USNS

Universal Screeners for Number Sense

Updated June 2024

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Forefront

Forward to the 2024 release of the Universal Screeners for Number Sense

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Notes on the 2024 release of the USNS

The changes in the assessments and scoring guides for the June 2024 release are mostly limited to refinements of the text, minor corrections, some clarifications. While there have been some requests for additional questions, and other more significant modifications, for consistencies' sake, these will not take place this year. This does not mean that they will not happen in the future. This project has always been committed to adherence to the idea of continual improvement, and a more major revision of the entire series is likely within the next few years. We appreciate the contributions of the community to inform these efforts, and appreciate all of you who have reached out to point out where we have fallen short and might improve this resource.

Although no questions were added or deleted for the 2024 edition, two minor changes to questions were made. The wording of the 4th grade fall question number 9 was modified to deepen the race context. Where it used to say, "mark where will the runners be after 1/3 mile," it now says they want to put a water station after 1/3 mile. This is a modification that I have been trying with students for a while and it seems to help emphasize the unit of 1/3 mile, with the hope of minimizing the linguistic confusion about the units involved. (1/3 mile, versus 1/3 of the race).

The other significant change was made to grade 3 Spring interview question number 2. This problem which starts as 300-102 then provides 300-2 as a scaffold if the student is unable to solve the original problem. A level zero was added to this problem for students who also cannot solve 300-2.

Most of the other things were fixes to typos, additional clarification on rubrics, and other minor things that had been requested and brought to my attention either through direct communication or through the Facebook "Number Sense Screeners" group. One of these being the addition of commentaries which were added to the grade 3 Midyear written tasks.

D Tasks are now Fluency Tasks

The so-called D Tasks (which originally were intended to be digital tasks and were named as such) have now been renamed to Fluency Tasks. The numbering has also changed from D1, D2, etc. to F1, F2, etc. The scoring of these in Forefront has not changed. Forefront users should enter the "points" not performance levels for each of the tasks. That is, if there are 6 problems on one task, and the student gets all right, enter a 6 in Forefront. Forefront will automatically convert the points to performance levels, which is what is used for calculation of the overall performance.

A Growing Community

The community of USNS users, now numbering over 20,000, continues to grow rapidly. This is reflected in the sample size of the Forefront Global Cohort. Thank you to those of you who use Forefront where the Global Cohort is housed (along with Next Steps documents and Family

Letters). Forefront is what supports and keeps the USNS project alive and vibrant. Forefront is also what enables research (see Wilkins, Woodward, and Norton, 2019).

In 2023 Forefront commissioned a validation study released in March 2023. Forefront is dedicated to continuing to help districts and the education community at large to gather and utilize evidence from meaningful assessments and improve outcomes for all students. We invite researchers and practitioners to reach out if they are interested in collaborating with us on these efforts. If you are interested in using Forefront to support your systematic implementation of the USNS we hope you will visit forefront.education or reach out to sales@forefront.education for a demo.

The Forefront/USNS community is growing rapidly due in part to the USNS assessments being adopted by the Alabama State Department of Education as an early numeracy screener for the Alabama Numeracy Act. Forefront is pleased to contribute to the efforts of all Alabama educators in focusing on the early development of critical skills and concepts for fostering long-term success in mathematics.

We would also like to extend you an invitation to join our Facebook "Number Sense Screeners" group. Join the community of USNS users there to discuss the scoring of responses, things they have witnessed, and wonderings.

A very sincere thanks to the entire community of users and for your efforts to improve instruction and math learning for all your students. Your passion, caring, and expertise is inspiring, and is what inspires and informs this project's continual improvement efforts.

I especially want to send thanks to those who have contributed to the curation of the Next Steps documents, including Margaret Betts, Meghan Brzozowski, Beth Finkelstein, Margaret Schweer, Christopher Mainhart, and Kim Pencil. Next steps documents are now available for all grade levels for all assessments for Forefront clients. I also want to express my sincere thanks to Joey Vaughan for reviewing and contributing to the Accommodations Recommendations document. And a huge thanks to Hugo Rivas for the Spanish translations.

Parent Letters and Next Steps Documents

The Family Letters and Next Steps documents for the USNS are available with subscriptions to Forefront. Next Steps docs are available to all clients and the Family Letters are available to Forefront Basic and Premium clients.

Next Steps for Instruction
The Next Steps documents, which are accessed through Forefront, are curated and original, question-by-question instructional responses to your USNS results. These are intended to serve as quick responses for individual, small group, and whole-class instruction.
Customized Family Letters
Once the results of the screeners have been entered, Forefront uses results to generate customized communication for families. Personalized letters explain the purpose of the USNS and tell the parent specifically where their child was successful. Where there are indications of a need for growth, parents will find specific suggestions for ways they can work at home to support their child. The family letters are currently available in English, Spanish, Amharic, Arabic, Bengali, and

Haitian Creole. Please contact support@forefront.education if you need additional languages added to your account.

Introduction: The Universal Screeners for Number Sense

In July of 2020 the Universal Screeners for Mathematics (2020) were released as an open-source assessment project by Forefront Education. The K-5 USNS represent a significant revision and redesign of the BVSD Math Screeners, a project that I had led while working in Boulder Valley School District as an elementary math specialist and coach. The screener project dates to 2007; this was the first major revision of the assessment series in 7 years. The changes made were informed by experiences in assessing students, feedback from the community of users, and advice from colleagues. You will find detailed notes about each of the changes below. Some questions were cut, others shortened. Some were changed significantly (see the fluency tasks for 5th grade) and a couple of questions were added.

We are delighted to continue to provide these assessments free of charge for the math education community and appreciate hearing your feedback. No doubt you will find further areas for improvement.

Rationale and Purposes for the Universal Number Sense Screeners:

The purpose for these assessments is to provide a series of interview-based universal screener assessments **for teachers** to:

- understand how their students make sense of mathematics.
- measure key number sense skills, concepts, and developmental milestones.
- better understand how to support all students in accessing grade level content and accelerate learning.
- inform RtI and MTSS Tiers 1 and 2: identify students and topics for whole class and small group targeted instruction.
- identify individual students who might need additional supports, and direct teachers toward high impact topics for instruction to accelerate learning.
- identify students for diagnostic assessments, for which we recommend the Add+Vantage Math assessments from the US Math Recovery Council.
- improve parent communication and collaboration.

Additionally, with the proper tools for collecting and visualizing the data, these Screeners are designed **for school and district leaders** to:

- monitor the effectiveness of instructional programs over time.
- inform professional development, PLCs, and other collaborative action.
- communicate current understandings of number sense.
- inform district FTE decision making through the identification of concentrations of students at risk of struggling so that districts might react proactively and provide early interventions.

The Universal Screeners for Number Sense project, with Forefront Education also serves **researchers** and the research community for understanding mathematical cognition and development, program effectiveness, and efforts to improve understandings of how we can best serve the needs of students.

Development History

The Math Screener Project has its roots in the work of Boulder Valley School District's (BVSD) Math Department starting in 2007. The original design of the assessments was informed by the work of the US Math Recovery Council, thus leading to direct alignment of the Fall assessments with the Add+Vantage Math Assessments (AVMR). The screeners were originally designed to support the systematic implementation of the teachings of AVMR. After a period of about four years, when annual fall revisions made using feedback from the teachers, in 2013, it was determined that no further revisions would be made for the foreseeable future. The 2020 revisions published by Forefront Education are the first major revisions since that time.

Over the past seven years, the Screeners have attracted a significant amount of attention in the United States and abroad. Ample feedback has been shared from that community over the years. For those of you who have provided feedback, I hope that you will appreciate the improvements you find here. The data from the Forefront Global Cohort (see below) has also helped to inform this work. The Global Cohort has helped to focus on student assets over deficit assessment, to calibrate the difficulty of the tasks so that they are more consistent from one grade level to the next, and to better inform instructional responses.

The 6th grade series of assessments was developed during the 2021 – 2022 school year. A huge thank you to Beth McDonald for taking on that effort.

As always, questions, feedback, comments, or otherwise are always welcome. Please reach out to screeners@forefront.education.

Design of the Screeners

These assessments were designed along these principles and assumptions:

- Teachers teach best and instruction improves when they have a deep curiosity about and understanding of individual students.
- Assessment is much more than numerical data. It is the interpretation of all observations about a student and their growth along learning and developmental trajectories.
- An assessment becomes formative once it has informed feedback and influenced instructional decision-making.
- Assessment is fundamentally a form of communication both from the student to the teacher and from the teacher to the student.
- We value student intuition, thinking, and mental math strategies.

The questions in these assessments were developed to align to:

- Research related to reliable predictors of general outcome measures for mathematics (see full bibliography below)
- The Add+Vantage Math Recovery assessments and related research (www.mathrecovery.org)
- The Common Core State Standards for Mathematics (www.corestandards.org) (additional state alignments have been added over time and are available through Forefront. Please inquire about alignments at sales@forefront.education.)
- The principles of Realistic Math Education

Number Sense Lens

The Number Sense Lens provides a structure for the entire series of assessments. The tasks of the USNS are organized around these six ideas:

- Numerals, Words, and Sequences (NWS)
- Addition and Subtraction within 20 (AS20)
- Place Value PV)
- Multiplication & Division (MultDiv)
- Fractions (Fracts)
- Problem Solving and Problem Posing (PSP)

The ideas of the Number Sense Lense are assessed across the grade levels as shown below.

Assessment	NWS	AS20	PV	MultDiv	Fracts	PSP
K - Fall	X	X				
K- Mid	X	X				
K - Spring	X	X	X			
1 - Fall	X	X	X			
1 - Mid	X	X	X			
1- Spring	X	X	X			
2 - Fall	X	X	X			
2 - Mid	X	X	X			X
2 - Spring	X	X	X			X
3 - Fall	X	X	X	X		X
3 - Mid	X		X	X		X
3 - Spring			X	X	X	X
4 - Fall	X		X	X	X	
4 - Mid	X		X	X	X	X
4 - Spring	X		X	X	X	X
5 - Fall	X		X	X	X	
5 - Mid	X		X	X	X	X
5 - Spring			X	X	X	X

For more about the Number Sense Lens and how Forefront uses it to help teachers focus attention and track progress see: Number Sense Lens

Unique Design

The Universal Number Sense Fall Screeners are one-on-one interview assessments, which give teachers a structure for collecting consistent observational data across classrooms and schools.

The Midyear USNS are intended to be more thorough and broader in their assessment of the ideas and content of each grade level. The middle of the year is unique in that it is a time to look for growth while also collecting formative assessment information. To maximize the information from the assessments, while keeping it as efficient as possible, the midyear assessments for grades 1 – 5 include two components (interview and paper & pencil)

- The interviews focus on aspects of learning that can only be assessed through listening to children.
- The paper & pencil sections focus on reasoning and producing visual models and equations, as well as fluency and number lines.

It is intended that the three components of the midyear assessment be spread out from late November through late January. This provides ample opportunity for teachers to conduct interviews and work the other components in with minimal disruption.

The end-of-year assessments for grades K-4 contain interview and paper & pencil components. The 5th grade assessment has no interview. The 5th grade assessment is a bit of a capstone assessment in that it integrates ideas from all grade levels and is particularly focused on the most critical skills and concepts of elementary school to ensure success in middle school. It is recommended to conduct this assessment with at least 6 weeks remaining in the year so that teachers have a chance to respond to the results before the end of the year.

The USNS are intended to serve as indicators of both struggle and measures of growth. The assessments become progressively more challenging over time to match the content as it develops over the years. The various components of the assessment complement each other, as do the assessments over time.

Assessment Windows

Although there are no strict guidelines for when to administer these assessments, generally the Fall Screeners should be finished within the first 4-6 weeks of school. The Midyear Screeners are designed to be given after the winter break, and the Spring Screeners should be administered in the last 4 -6 weeks of school. Some teachers have found that administering the Spring Screener as early as the first weeks of April has been informative for guiding end of the year instruction.

Depth of Knowledge

Some of the tasks on the Screeners very clearly have a Depth of Knowledge of level 1. The counting tasks and number identification tasks are good examples of this. However, the depth of knowledge of other tasks is not as straight forward since it depends on the questioning the teacher does. Asking for instance, “Can you show me how you solved that?” elicits a DOK of 2 or 3, whereas asking a student to prove their answer by asking, “Why does that work?” can elicit a DOK of 4. Teachers in general should ask probing questions as necessary to inform their own instruction without allowing themselves to become bogged down. While questions of DOK come up occasionally, task by task alignment to DOK levels has never been done.

What is Forefront®?

Forefront by Forefront Education is a powerful tool for collecting and leveraging assessment data to improve student learning. For the USNS and other assessment systems, Forefront provides an ideal solution for data collection with an interview tool for easy mobile data collection. Forefront's data visualization tools are easy and intuitive for teachers, while empowering leaders with powerful tools to put classroom data into the big picture.

Norm and Criterion Referenced

Through Forefront, we have been able to collect and aggregate results of the USNS enabling schools and districts to evaluate the results of students to a large nationwide sample. Partner districts who opt into the Forefront Global Cohort contribute their assessment results to an anonymized, international pool and can compare their local results to that global norm.

Forefront also organizes assessment results through the lens of the Common Core and other frameworks in a variety of different reports. In this way Forefront can enable districts to utilize the USNS as both norm and criteria referenced assessments.

Free for the Math Education Community

Universal Screeners for Number Sense are freely available to everyone in the education community and can be downloaded from the USNS Project page of our company website. The USNS are published under the Creative Commons license. (https://creativecommons.org/licenses/by-sa/4.0/)

The USNS are free, open-source assessments. Forefront provides the financial support to keep this project going and to make these assessments available. Thanks to all Forefront partner districts, whether you use the USNS or not. Your patronage makes this project possible.

If you are curious about Forefront and how it can support your school or district, please visit our website to view a demo or write to sales@forefront.education to schedule a custom demonstration and conversation for you and your team.

Instructions for Administration of Fall Screeners

These are interview-based screening assessments that happen one-on-one with students.

- Read the assessment through and discuss with a colleague to ensure that any questions that might arise can get cleared up.
- Prepare your space. Where will you do these assessments?
- Prepare all the materials that you need (materials lists are below).
- Do not provide students with paper and pencil or materials (counters, etc.)
- Practice it once with a student or colleague so that you are fully ready.
- Consider whether you will video tape or not. Some teachers video tape most of all the assessments for personal use, sharing with parents, or for PLC or other collaborative work.
- Schedule your time. Will you do one per day? Two per day? Or perhaps there is a better plan that fits well with your situation. No matter what you choose, consider how and when you will

complete the assessments.

- As you give the assessments take notes. We all think we are going to remember, and yet after doing a few assessments it is often difficult to remember. These assessments are designed to collect qualitative evidence as much as quantitative evidence. In fact, that qualitative evidence is more useful as formative information for instruction.
- Be curious, but keep a good pace. These interview assessments can lead to a lot of questions about how students solve problems. This is in fact the intention, and when teachers express a genuine curiosity about how students think that communicates to the student that you care. However, it is easy to let the questioning go on so long that you can get bogged down, and behind schedule. Sometimes it is best to make a note and ask more questions some other time.

Before administering the assessments read the assessments through carefully. The new detailed descriptions are designed to answer many of the questions that have come up over the years. It is best to do a dry run with the materials and either a "sample" student or a teaching partner.

Preparation

In addition to reading through the whole of the assessments, make the appropriate copies and gather the necessary materials before you get started. See the list of materials for each of the grade levels below.

Plan for Data Collection and Data Usage

Consider how and where data will be collected, shared, and utilized. Collecting data for the sake of data is not purposeful or useful. Forefront provides an excellent solution to this process and helps districts to see their USNS results alongside results from other assessments. For those who do not plan to use Forefront, creating formatted spreadsheets for data collection can be helpful. If the decision is made to administer the assessments school-wide or district-wide, plan at the beginning for when the results will be discussed, and how they will be used. It is important from the outset that everyone involved understands the purposes for making this commitment.

Forefront is particularly well designed for schools that are using the USNS as a *universal* screener. The ability to aggregate and disaggregate results, view results over time, compare groups and cohorts of students, and understand the results through a variety of lenses helps districts to maximize the information and the impact of the assessments quickly and easily.

Note Taking

Note catchers have been created for all the assessments. This allows for a little more room for note-taking question by question. As the students respond to the prompts it is important to observe the student closely. Although the numeric data that is collected from these assessments is useful for a few things, the rich information that comes from noticing and noting the students' responses is where much of the formative assessment information will come from. Quick Scripts have been created for each of the assessments as well to facilitate their administration.

Who should administer the assessments?

Whenever possible, we suggest that the teacher who works most directly with the student administer the assessments. Although the numeric data can be helpful, observing and listening to each student is where the most valuable information comes from. If it is impossible for a teacher to administer all the assessments, consider the following: For students whom the teacher believes will need a more thorough diagnostic assessment anyway, have someone else collect the Screener data and then the teacher can follow up with the diagnostic assessments. For students who you anticipate will have no trouble with the assessment, consider handing off these Screeners to others. However, please take into consideration that even these students are worth assessing because their thinking often reveals surprises.

Pacing/Time for Interviews

The USNS have been designed to be as efficient as possible, however history has shown that teachers need to focus their efforts keep a manageable pace. Teachers should attempt to questions students as much as is necessary to score the assessment accurately. It is sometimes tempting for teachers to turn the assessment into an instructional opportunity. This can cause the assessment times to get drawn out significantly. Teachers are advised to take note of the instructional opportunities that present themselves during the assessment and to address them later.

Many students will move through interviews more quickly, while others will need more time. The kindergarten screeners can often be done in 3 – 5 minutes. The 1st – 3rd grade screeners tend to take 5 – 7 minutes each. Revisions have been made to focus the questions better and improve efficiency. However, due to the increased complexity of the content, the 4th and 5th grade Screeners still take about 8 – 10 minutes each.

If a student is taking an inordinate amount of time and does not appear to be able to engage productively in the problem, the teacher may ask the student if they need more time or if they need to hear the question again. When a student is not working productively on a problem, it is appropriate to record the student answer as unsuccessful and move on. Teachers should seek to strike a balance between getting as much information as is useful for informing instruction and maintaining a manageable assessment schedule. Something to consider is to attempt to assess only one or two students per day. This makes the task more manageable.

Pacing/Time for Written Tasks

The written portions of the midyear and spring assessments are intended to be administered in a single class session. Many students will finish more quickly. Be prepared with activities that will not distract the other students for those who finish early. For students who require more time as part of an accommodation, that should be provided. For other students, who take longer, provided time as possible. Consider the possibility of administering incomplete questions for those students in a small group setting so that you can ensure that the students are engaged productively. If a student does not attempt a problem after being given ample opportunities to respond it is appropriate to score the response at the lowest performance level for that task.

Language Considerations

Because these assessments include interviews and the students primarily respond verbally, teachers find that they gain a wealth of information regarding the students' receptive and productive language abilities. Teachers are encouraged to make notes about the students' language usage.

Whenever possible the assessment should be made available in the dominant language of the student, and it is suggested to give the assessment in the language of the student's choosing. Be careful, however, for although a student might speak another language at home, it could be that much of their experiences with numbers and mathematics has come from school. So, although a student might be more confident with normal conversational language in their home language, they are often more competent in talking about mathematics in the language used primarily for math instruction. It is often highly informative to offer the assessment in two languages for bilingual students, sometimes moving back and forth between languages. Understanding each student's number sense and skills is critical. Understanding their language and ability to access instruction and participate in mathematical discourse is also important.

When administering the assessment in more than one language and recording the data into a data collection system like Forefront, enter the higher of the two scores for the student.

The assessments are currently available in English and Spanish. If you or your district makes other translations, we encourage you to share those back with us so that we can share them with the broader community.

Occasionally the assessment will directly encourage the teacher to check to ensure that the student understands the prompt. When, during the interview assessment, students are presented with a written problem to solve mentally, the teacher is asked to ensure that the student has read the problem correctly.

Frequently Asked Questions

Should I assess everyone?

These assessments are designed to be *universal* screening assessments, so yes. If you have a student who cannot access the test due to a disability enter 1s for the test. This allows districts who are building norms for the assessment to ensure that they are getting accurate percentile bands.

Why not provide counters and paper and pencil?

- The Fall Screeners are all written to be solved mentally. When children solve problems like this without paper and pencil it helps to reveal how they are making sense of the problems and the numbers involved.
- Providing paper and pencil and/or manipulatives will slow down the assessments significantly.
- The rubrics are written assuming that students are solving the problems without these things and providing them will cause inconsistencies in scoring.
- If, after completing the assessments, you wish to have some or all the children try the problems with paper and pencil and/or manipulatives to see how they would solve them, that might be helpful.

I have a student who scored very poorly, should I go down a grade level?

One way to find out what a student knows is to drop back a grade level in your assessment. Generally, these results are only kept for formative purposes and not entered into Forefront or your data system so that the local norms are solid, but check with your district leader. This is also true for students who score very well and moving up.

Does this identify students for accelerated course work?

No. This series of assessments is intended to inform instruction for grade level content. For students who are being considered for acceleration, a grade level Screener can be added to a body of evidence, but should be only an additional piece, not core to the process.

Our teachers are not AVMR (Add+Vantage Math Recovery) trained, is this still useful?

These assessments are useful to all, however with the appropriate training the impact is amplified. The US Math Recovery Council (mathrecovery.org) provides excellent professional development services for classroom teachers and interventionists. The associations with the AVMR assessments point teachers to the appropriate diagnostic assessment to help guide instructional decision making.

Materials Preparation Checklist for Fall Screeners

Kindergarten:

- ☐ Copies of the note catchers: One per student
- ☐ Copies of the Quick Script: One for the teacher
- ☐ Copies of the detailed script: As necessary for the teacher
- ☐ Number and dot cards
- ☐ 7 counters of one color, 3 counters of another color
- ☐ A piece of paper or a plate for the counter tasks

First Grade:

- ☐ Copies of the note catchers: One per student
- ☐ Copies of the Quick Script: One for the teacher
- ☐ Copies of the detailed script: As necessary for the teacher
- ☐ Number cards
- ☐ Counters: At least 15 including at least 8 of a single color and 3 of another color
- ☐ An opaque cover for the counters (a thin foam sheet, or card stock work well)

Second Grade:

- ☐ Copies of the note catchers: One per student
- ☐ Copies of the Quick Script: One for the teacher
- ☐ Copies of the detailed script: As necessary for the teacher
- ☐ Number and dot cards
- ☐ Counters: 14 of one color 6 of a second color
- ☐ Two opaque covers for the counters (thin foam sheets, or card stock work well)

Third Grade:

- ☐ Copies of the note catchers: One per student
- ☐ Copies of the Quick Script: One for the teacher
- ☐ Copies of the detailed script: As necessary for the teacher
- ☐ Cards for question prompts
- ☐ Counters: 12 of one color

Fourth Grade:

- ☐ Copies of the note catchers: One per student
- ☐ Copies of the Quick Script: One for the teacher
- ☐ Copies of the detailed script: As necessary for the teacher
- ☐ Number and dot cards
- ☐ Pencil and paper for student
- ☐ Number lines: One for each student

Fifth Grade:

- ☐ Copies of the note catchers: One per student
- ☐ Copies of the Quick Script: One for the teacher
- ☐ Copies of the detailed script: As necessary for the teacher
- ☐ Number and other cards
- ☐ Number lines: One for each student

Fall Universal Number Sense Screeners Standards Alignments

In addition to the Number Sense Lens, the tasks of the USNS have been aligned to a variety of standards systems. These alignments have been done in Forefront to enable teachers to visualize the assessment results by their own state standards. Additional alignments include Alabama Academic Standards, Australia's AC9, Colorado Academic Standards, Oregon State Standards, Florida's B.E.S.T, TEKS, and other state standards. Please contact us for information about alignments at sales@forefront.education. For convenience, alignments to the Common Core State Standards are outlined below.

Tasks at each grade level are generally aligned with the end-of-grade-level expectations from the prior grade. However, there are times when the alignment dips to touch on standards from lower grade levels. Except for the Number Sense Lens, alignments are not perfect. For example, it was decided to keep a series of counting questions in at all grade levels despite counting skills not being mentioned at each grade level.

Alignments to the "current grade level" align to the work of the grade level, not to the end of year expectations. That is, they represent a preparedness for the learning of the grade level. For example, in the 1st Grade Screener, question 1 is to count to 22. The standard referenced for that grade level is 1.NBT.A.1 which expects a student to count to 120. The difficulty of the tasks increases as they progress through and across the years.

Common Core State Standards Alignments

Kindergarten		
Question	**K - Standard**	**Number Sense**
1. Count to 10	K.CC.A.1	Numerals, Words & Sequences: Forward Number Word Sequences
2. Number ID	K.CC.A.3	Numerals, Words & Sequences: Numeral Identification
3. Count 7	K.CC.A.3	Addition and Subtraction Within 20: One to One Correspondence
4. Cardinality	K.CC.B.4a	Addition and Subtraction Within 20: Cardinality and Numeric Thinking
5. Add 3 More	K.CC.B.4b	Addition and Subtraction Within 20: Cardinality and Numeric Thinking
6. Subitize	K.CC.B.4	Addition and Subtraction Within 20: Subitizing
7. Fingers	K.OA.A.1	Addition and Subtraction Within 20: Fingers

1st Grade			
Question	**Current Grade**	**Prior Grade**	**Number Sense**
1. Count to 22	1.NBT.A.1	K.CC.A.1	Numerals, Words & Sequences: Forward Number Word Sequences
2. Count from 38-42	1.NBT.A.1	K.CC.A.1	Numerals, Words & Sequences: Forward Number Word Sequences
3. Count by 10s	1.NBT.A.1	K.CC.A.1	Numerals, Words & Sequences: Skip Count by 10s and 100s
4. Number ID	1.NBT.A.1	K.CC.A.3	Numerals, Words & Sequences: Numeral Identification
5. 15 objects uncovered	1.OA.A	K.CC.B.5	Addition and Subtraction Within 20: One to One Correspondence
6. 4 and 3 Covered	1.OA.A	K.OA.A.2	Addition and Subtraction Within 20: Covered Task - Addition
7. 8 Covered -2	1.OA.A	K.OA.A.2	Addition and Subtraction Within 20: Covered Task - Subtraction

8. Four Hidden Bears	1.OA.C.6	K.OA.A.5	Addition and Subtraction Within 20: Structures, Flexibility and Fluency
9. Two Hidden Bears	1.OA.C.6	K.OA.A.5	Addition and Subtraction Within 20: Structures, Flexibility and Fluency
10. Ten and three more	1.NBT.B.2	K.NBT.A.1	Place Value: Ones, Tens, and Hundreds

2ND Grade			
Task	**Current Grade**	**Prior Grade**	**Number Sense**
1. Count 27 – 43	2.NBT.A.2	1.NBT.A.1	Numerals, Words & Sequences: Forward Number Word Sequences
2. Count 96 – 120	2.NBT.A.2	1.NBT.A.1	Numerals, Words & Sequences: Forward Number Word Sequences
3. Count Back 23 – 10	2.NBT.A.2	1.NBT.A.1	Numerals, Words & Sequences: Backward Number Word Sequences
4. Number ID	2.NBT.A.3	1.NBT.A.1	Numerals, Words & Sequences: Numeral Identification
5. 9 and 6 Covered	2.OA.A	1.OA.A.1	Addition and Subtraction Within 20: Covered Task - Addition
6. 14 remove 3	2.OA.A	1.OA.A.1	Addition and Subtraction Within 20: Covered Task - Subtraction
7. Make 10	2.OA.B.2	1.OA.C.6	Addition and Subtraction Within 20: Structures, Flexibility and Fluency
8. Make 10 again	2.OA.B.2	1.OA.C.6	Addition and Subtraction Within 20: Structures, Flexibility and Fluency
9. 10 and 6 more	2.NBT.B.5	1.NBT.B.2	Place Value: Ones, Tens, and Hundreds
10. 16 and ten more	2.NBT.B.8	1.NBT.C.5	Place Value: Ones, Tens, and Hundreds

3RD Grade			
Task	**Current Grade**	**Prior Grade**	**Number Sense**
1. Count 496 to 502	3.NBT	2.NBT.A.2	Numerals, Words & Sequences: Forward Number Word Sequences
2. Count Back 303 to 298	3.NBT	2.NBT.A.2	Numerals, Words & Sequences: Backward Number Word Sequences
3. Number ID	3.NBT	2.NBT.A.3	Numerals, Words & Sequences: Numeral Identification
4. Equi-Partitioning	3.OA.A	Not defined in CCSS	Multiply and Divide: Represent
5. Count Back by 10s	3.NBT	2.NBT.B.8	Numerals, Words & Sequences: Skip Count by 10s and 100s
6. 45 + 19	3.NBT.A.2	2.NBT.B.5	Place Value: Computation Mental Math
7. 50-24	3.OA.A.2	2.NBT.B.5	Place Value: Computation Mental Math
8. Compare Lengths	3.MD.D.8	2.MD.B.6 and 2.MD.A.4	Problem Solving and Composing: Comparisons
9. Decompose 13	3.NBT.A.2	2.OA.B.2	Addition and Subtraction Within 20: Structures, Flexibility and Fluency
10. Decompose 13 again	3.NBT.A.2	2.OA.B.2	Addition and Subtraction Within 20: Structures, Flexibility and Fluency

4TH Grade			
Task	**Current Grade**	**Prior Grade**	**Number Sense**
1. Count 995 to 1000	4.NBT	2.NBT.A.2	Numerals, Words & Sequences: Forward Number Word Sequences
2. Count Back 602 to 598	4.NBT	2.NBT.A.2	Numerals, Words & Sequences: Backward Number Word Sequences
3. Number ID	4.NBT.A.2	2.NBT.A.3	Numerals, Words & Sequences: Numeral Identification
4. 6 x 3 Dots	4.OA	3.OA.A.1 and 2.OA.C.4	Multiply and Divide: Mental Math
5. Write mult. equation	4.OA	3.OA.A.1	Multiply and Divide: Model with Equations
6. 10s in 82	4.NBT.A	2.NBT.A.1	Place Value: Ones, Tens and Hundreds
7. 596 + 10	4.NBT.B.4	3.NBT.A.2	Place Value: Mental Computation
8. 400 – 198	4.NBT.B.4	3.NBT.A.2	Place Value: Mental Computation
9. Fractions on Number Line	4.NF.B	3.NF.A.2	Fractional Thinking: Number Lines

5TH Grade			
Task	**Current Grade**	**Prior Grade**	**Number Sense**
1. Count Back 1002 to 997	5.NBT	4.NBT.A.1	Numerals, Words & Sequences: Backward Number Word Sequences
2. Numeral ID	5.NBT	4.NBT.A.2	Numerals, Words & Sequences: Numeral Identification
3. 6 x 4	5.NBT.B.5	3.OA.C.7	Multiply and Divide: Fluency
4. Fluency and concept of 32÷4	5.NBT.B.6	3.OA.C.7	Multiply and Divide: Fluency
5. 30 x 4	5.NBT.B.5	3.NBT.A.3	Multiply and Divide: Mental Math
6. 29 x 4	5.OA	4.NBT.B.5	Multiply and Divide: Mental Math
7. Tens in 214	5.NBT.B.6	4.NBT.B.6	Place Value: Ones, Tens and Hundreds
8. $20 - $12.25	5.NBT.B.7	4.NBT.B.4	Place Value: Mental Math
9. Fractions and decimals on number line	5.NF	3.NF.A.2, 4.NF.C	Fractional Thinking: Number Lines

6th Grade		
Task	**Current Grade**	**Prior Grade**
1. Count by tenths	6.NS.C.6	5.NBT.A.1
2. Read Decimals and Fractions	6.NS.C.6	5.NF.B.3
3. Use 30 x 34 to solve 60 x 34	6.NS.B.2, 6.EE.A.3	5.NBT.B.5
4. Properties – Distributive property and division	6.EE.A.3, 6.EE.A.4	5.NBT.B.6
5. $300.00 - - $260.75	6.NS.B.3	5.NBT.B.7
6. 3 divided by ¾ in context	6.NS.A.1	5.NF.B.7
7. Units and Fractions	6.RP.A.3.a	5.NF.B.3
8. Units and Fractions	6.RP.A.3.a	5.NF.B.3
9. Units and Fractions	6.RP.A.3.a	5.NF.B.3

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The resources listed below were used to inform the development of the Number Sense Screener series either directly or indirectly.

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Fall Universal Screeners for Number Sense

Overall Performance Levels 2023-2024

Performance levels should be calculated using the performance levels for each task or task set. Forefront will do this automatically. For written and fluency tasks, enter point values as described in the scoring guides.

Kindergarten

Well Below Basic	Below Basic	Basic	Proficient
7-9	10-13	14-17	18-21

First Grade

Well Below Basic	Below Basic	Basic	Proficient
10-14	15-19	20-24	25-30

2nd Grade

Well Below Basic	Below Basic	Basic	Proficient
10-14	15-19	20-24	25-30

3rd Grade

Well Below Basic	Below Basic	Basic	Proficient
10-14	15-19	20-24	25-30

4th Grade

Well Below Basic	Below Basic	Basic	Proficient
9-12	13-17	18-22	23-27

5th Grade

Well Below Basic	Below Basic	Basic	Proficient
9-12	13-17	18-22	23-27

6th Grade

Well Below Basic	Below Basic	Basic	Proficient
9-11	12-14	15-21	22-27

Universal Screeners for Number Sense
Accessibility Features and Recommendations for Accommodations

The USNS assessments include interviews and paper and pencil portions. The guidance provided here is broken into two sections for each of the assessment formats.

Interviews:

The interview assessments are designed to be accessible to students with diverse needs. The use of manipulatives, and contextualized tasks are especially helpful in supporting students in accessing and understanding the problems. When it is evident that the student does not understand the task, it is appropriate for the teacher to present the task again, paraphrase, or use the student's home language (when possible.)

For all Students: Supporting students in understanding the tasks and what is being asked of them is appropriate and does not invalidate the assessments. This might include repeating the question, rephrasing the task, and/or giving a short example like, "Counting backward sounds like 3, 2, 1. Now you count back starting at 17." Be careful not to go so far as to provide unnecessary support. Giving a student a running start, like "20, 19, 18" or "17, 16. 15, …" for this task would be too much support. Support should only be given to help the student understand, not to prompt them toward solutions.

Transcriptions: While all students should be encouraged to complete the assessment as independently as possible, if, on the written portions of the assessments, a student needs assistance with transcriptions of ideas that they are able to express verbally, but not in writing, the teacher may transcribe student thinking as expressed by the student. Include these transcriptions in the scoring of the assessment. Because the assessments are intended to assess students number sense, not their ability to write, this is an appropriate accommodation for all students as necessary. When doing this, for accuracy and to eliminate issues of bias, teachers should attempt to transcribe verbatim and not add visual models. Students should draw all visual models.

Below is a list of allowable accommodations for students with unique needs. The screener process should mirror what is used in the classroom, as long as it does not invalidate the assessment. Do not provide students with unfamiliar accommodations.

Special Circumstances	Allowable Accommodations (Interviews)
Student who is Deaf or hard of hearing	• Administer the test in the language of instruction • Provide written instructions • See note below related to finger tasks on kindergarten assessment
Student with a vision impairment	• Touch the manipulatives if required for a task • Use Braille numbers for numeral identification tasks • Use tactile numerals (e.g., sandpaper numerals)

	• Describe images provided • Use tactile number lines and tools (e.g., rulers or rods)
Student who is learning English	• Administer the test in their home language
Student with significant cognitive disabilities	• Select the assessment level appropriate for that child (e.g., If a 5th grade student is still learning to read numerals at a 1st grade level, administer the 1st grade assessment.)

For scoring the USNS, right answers should be counted as correct regardless of the language used. For example, if a kindergarten student is able to read all the numerals from 0 - 10, but knows some numbers in English and others in Spanish, it should be counted as correct. Careful notes should be taken to inform instruction and help the student achieve the goals of the instructional program.

The USNS are designed to be asset-based assessments. Some will find that it is helpful to pick and choose tasks from various assessments to determine the extent of the student's abilities. If the district is using the USNS as a universal screener and are utilizing local norms, it is recommended to enter the data for the student's grade level placement, even if they are unable to access the tasks, so that a true local norm can be established, but then to use the results of the chosen tasks to guide instruction and decision making.

Note: related to the finger tasks in kindergarten for students who are deaf: Because the sign for 3 and 5 are both also indicated by 3 and 5 fingers this task special considerations need to be made. If during the reading of the numerals, the teacher feels that they have enough information already collected, use that task to score the finger task. We also suggest asking the student to show 6 fingers, using the sign for 6 to gather this information.

Written Tasks

Accommodations for the administration of the written tasks of the USNS should align with modifications and accommodations that the student receives with other written tasks.

Special Circumstances	Allowable Accommodations (Written Tasks)

Student who is Deaf or hard of hearing	• For tasks that require the student to write dictated numerals, the test administrator can use these methods:
	  ○ sign/speak the numeral
	  ○ provide a visual representation of the numeral (dots, base-10 blocks, or familiar manipulatives)
	• Repeat questions.
	• Use effective communication strategies for that child

	• Paraphrase verbiage on the assessment to match the student's language abilities and support access
Student with a vision impairment	• Oral administration • Large print • Magnification tools • Other classroom accommodations that are effective but would not invalidate the assessment
Student who is learning English	• Administer the test in their home language • Read aloud the assessment • Paraphrase verbiage on the assessment to match the student's language abilities and support access
Student with a reading disability	• Read aloud the assessment • Provide as little support as possible to ensure access (Additional supports to understand and access word problems beyond accessing the text are NOT allowed.)
Student with significant cognitive disabilities	• Select the assessment level appropriate for that child (e.g., If a 5th grade student is still learning to read numerals at a 1st grade level, administer the 1st grade assessment.) • Repeat questions • Use effective communication strategies for that child • Provide additional scaffolds, including multiplication tables calculators, only when explicitly mentioned in documentation.

Kindergarten

Fall Universal Screener for Number Sense

Instructions and Guidance:

The Fall USNS is entirely an interview-based assessment.

Who? Whenever possible, the teacher who works most directly with the child should be the one to administer the interview portion of the screener and score the written portion

Read the entire assessment through in preparation and run through the tasks.

Prepare the materials. Only provide materials as described in the script.

Do not provide the student with paper and pencil.

Set up in a place with as few distractions as possible.

Keep a good pace. Most assessments will take 3 – 4 minutes.

Limit Questioning: It is usually best to attempt to limit questioning and move at a steady pace through the tasks. This improves the efficiency, but also helps to ensure the consistency of administration, and therefore the reliability of the results.

Be flexible: You might find that you can work most efficiently by administering one task at a time, moving from student to student rather than having them come to a station. This can be done with the counting tasks and numeral ID task. Users of Forefront will find that the interview tool can be switched to focus on tasks. Here is a help article for using the interview tool.

Collaborate: Sometimes groups of students can be reorganized in creative ways to provide one teacher with the ability to sit with individual students.

Watch carefully and take notes: The nuances in behaviors that reveal a child's number sense development are sometimes hard to see and hear.

Smile and do your best to make the situation as stress free as possible. If the child seems particularly timid or nervous, consider trying at another time.

Video tape: Although it is not necessary for the administration of the assessment, recording an assessment or two to discuss with colleagues can be an excellent way to learn together, build consistency in administration and scoring, and communicate with parents.

Kindergarten: Fall

Number Sense Screener

Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language of Assessment: □ English □ Spanish □ Other: _____

AVMR Assessment(s) Suggested? □ No □ Yes (see below)

Number Words and Numerals	*score*
1. "I'd like to hear you count. Start counting from 1." (Score through 10) ☐ *correct 1st attempt: 3 pts* ☐ *correct on 2nd attempt or not fluent: 2 pts* ☐ *unsuccessful: 1 pt* ***Notes:***	
2. Numeral Identification Cards: **8 _____ 5 _____ 3 _____ 6 _____ 2 _____ 7 _____ 9 _____ 1 _____ 4 _____ 10 _____** ☐ *all correct: 3 pts* ☐ *7 - 9 correct: 2 pts* ☐ *6 or **fewer** correct: 1 pt* ***Notes:***	
AVMR Number Words and Numerals Assessment recommended? ____	
Counting and Cardinality	*score*
3. Counts 7 counters of a single color ☐ *correct on first attempt: 3 pts* ☐ *correct on 2nd attempt: 2 pts* ☐ *unsuccessful: 1pt* ***Notes:***	
4. 7 counters rotated ☐ *answers 7 without recounting: 3 pts* ☐ *recounts 7: 2 pts* ☐ *unsuccessful: 1 pt* ***Notes:***	
5. 7 and 3 more ☐ *correct: does not recount the 7: 3 pts* ☐ *correct: counts all: 2 pts* ☐ *unsuccessful: 1 pt* ***Notes:***	
AVMR Addition and Subtraction Assessment recommended? ____	
Structuring Number	*score*
6. Dot cards flash (Subitizing) ☐ *correct for both cards: 3 pts* ☐ *correct for one card: 2 pts* ☐ *incorrect for both: 1 pt* ***Notes:***	
7. 5 fingers, then 3 fingers ☐ *correct without counting by 1s* ☐ *correct, counts to show either* ☐ *unable to show one* ***Notes:***	
AVMR Structuring Number Assessment recommended? ____	

Kindergarten: Fall

Number Sense Screener

Script, *print 1 copy/test administrator*

Numerals, Words and Sequences

1. **"I'd like to hear you count. Start counting from 1 and I'll tell you when to stop."** Score task based on ability to count to ten. Teachers may allow student to count beyond 10 if it is informative.
   If student is unsuccessful on first attempt, ask student to count again. "**OK, can you count again for me? Start from 1."**
2. Place the cards in front of the student one at a time in the order listed.

   8 5 3 6 2 7 9 1 4 10

   "Read this card to me." (check if correct; record incorrect answers.)

Counting and Cardinality

3. Put out 7 red counters on a plate and ask, **"How many counters are here?"**
   If student is incorrect, have them attempt again.
4. Confirm that there are 7 for the student. Demonstrate count the 7 if the student was unsuccessful. With the student watching, rotate the plate one half turn.
   "How many counters are here?"
5. Confirm again that there are 7 counters. Leave the 7 red counters where they are and place 3 blue counters randomly spaced next to the red ones. "**How many are there now?"**

Structures, Flexibility & Fluency

6. **"I am going to show you a card quickly. Tell me how many dots you see."**
   Flash dot cards (3 then 5) quickly, only long enough for the student to catch a glance, about ½ second.
7. **"Show me 5 fingers."** After student has shown their answer, say, "**OK, put your fingers down. Now show me 3 fingers."**

Kindergarten: Fall

Number Sense Screener

Spanish Script, *print 1 copy/test administrator*

Numerals, Words and Sequences

1. **"Comienza a contar desde el 1 y yo te diré cuándo parar."** Score task based on ability to count to ten. Teachers may allow student to count beyond 10 if it is informative. If student is unsuccessful on first attempt, ask student to count again. "**Ok, ¿Puedes contar otra vez? Empieza desde 1."**
2. Place the cards in front of the student one at a time, in the order listed.

   8 5 3 6 2 7 9 1 4 10

   "Léeme esta tarjeta." (check if correct; record incorrect answers.)

Counting and Cardinality

3. Put out 7 red counters on a plate and ask, **"¿Cuántas fichas hay aquí?"** If student is incorrect, have them attempt again.
4. Confirm that there are 7 for the student. Demonstrate count the 7 if the student was unsuccessful. With the student watching, rotate the plate one half turn. **"¿Cuántas fichas hay aquí?"**
5. Confirm again that there are 7 counters. Leave the 7 red counters where they are and place 3 blue counters randomly spaced next to the red ones. **"¿Cuántas hay ahora?"**

Structures, Flexibility & Fluency

6. **"Te voy a mostrar una tarjeta rápidamente. Dime cuántos puntos ves."** Flash dot cards (3 then 5) for about ½ second.
7. **"Múestrame 5 dedos."** After student has shown their answer, say, **"OK, pon tus dedos abajo. Múestrame 3 dedos."**

Kindergarten: Fall

Administration Guide

Scoring Guide, *print 1 copy/test administrator*

Count to Ten Number Sense: Forward Number Word Sequences

1. "Start counting from 1 and I'll tell you when to stop." If the student is unsuccessful on first attempt, ask the student to do it again. Score task based on ability to count to ten. Teachers may allow student to count beyond 10 if it is informative.

3	2	1
Correct 1st attempt: Counts to 10 successfully on the first attempt without long pauses or self-corrections	**Correct on 2nd attempt or not fluent:** Counts to 10 on second attempt or has pauses and/or self-corrections.	**Unsuccessful:** Student does not demonstrate the ability to count to 10 in any language.
Commentary: The ability to recite the number word sequence to 10 is fundamental and is a goal of most preschool programs, and it is something that most parents will do with their children. Students who are unable to count to ten at the beginning of kindergarten will likely need extra targeted instruction and practice in order to catch up with their peers. Talking with parents about the importance of counting is also appropriate. **Note regarding bilingual students:** It is appropriate to assess students in both the home language as well as the language of instruction. Score for the better performance. If a student is able to count well in their home language, use that to score this task regardless of their performance in the language of instruction.		

Read Numerals to Ten Number Sense: Numeral ID

2. Place the cards in front of the student one at a time (not in numerical order).

"Read this card to me." (check if correct; record incorrect answers.)

8 5 3 6 2 7 9 1 4 10

3	2	1
All correct: Student is able to read all of the numbers. Self-corrections and pauses are OK.	**7-9 correct:** Student is able to read 7 – 9 of the numbers.	**6 or fewer correct:** Student reads 6 or fewer of the numbers correctly.
Commentary: As with counting to ten, reading numbers to 10 is a goal of most preschool programs. Take note of those students who can read very few numbers. Promptly provide targeted instruction and check their progress regularly. Note: If a student counts up in order to name the number (e.g. when looking at a 6, they say, "1, 2, 3, 4, 5, 6. Six. It's a six." or something to that effect) take note. Count this as correctly identifying the numeral, but continue working until full automaticity is attained.		

Kindergarten: Fall

Count Seven Objects

Number Sense: Counting and Cardinality: One to One Correspondence

3. Put out 7 red counters on a plate (or piece of paper) and ask, **"How many counters are here?"** If student is incorrect on the first try, have them attempt again. If the student seems reluctant to touch the objects say, **"You can touch the objects as you count."**

3	2	1
Correct on 1st attempt: Student demonstrates one-to-one correspondence and answers that there are seven	**Correct on 2nd attempt:** Student is able to correctly count when asked to count a second time.	**Unsuccessful:** Student is unable to count the set of 7 counters.
Commentary: This task includes several pieces of knowledge that are often so subtle that they are overlooked. When a student knows to counts in response to the question, "How many?" that is important. Take note of which students do not count. Then there is the understanding that as each number is said, an object is touched or pointed to. (1:1 correspondence) Some students will use a pull-off strategy, to group the objects as they are counted. This is an important skill that some students come to kindergarten with and should be explicitly taught to all students. Lastly, there is the understanding that when the count is complete, the last number said indicates the total number of objects in the set (cardinality). Teachers should notice the strategies that they use to enumerate the set and, especially for students who are unsuccessful, note the things they do well.		

Turn the 7 – Ask Again, "How many?" Number Sense: Cardinality and Numeric Thinking

4. Confirm that there are 7 for the student. Demonstrate how you count the 7 if the student was unsuccessful. With the student watching, rotate the plate one half turn.

"How many counters are here?"

3	2	1
Student answers 7 without recounting: Student sees that nothing has changed and that the answer must still be 7.	**Student recounts the 7:** Student counts again to see that there are 7.	**Unsuccessful:** Student does not answer that there are 7 counters.
Commentary: As you administer this task it is important that the student sees clearly that no counters have been added or removed. This task, which has its roots in ideas conservation of number that go back nearly 80 years to the research of Piaget, helps to reveal which students have developed a beginning understanding composite units (unitizing), and that the position of the objects does not matter for the number.		

Kindergarten: Fall

Seven and Three More Number Sense: Cardinality and Numeric Thinking

5. Confirm again that there are 7 counters. Leave the 7 red counters where they are and place 3 blue counters randomly spaced next to the red ones. "**How many are there now?"**

3	2	1
Correct, does not recount the 7: Student recognizes that the 7 does not need to be counted yet again and continues the count or promptly answers 10.	**Correct, counts all:** Student recounts the full set to answer 10.	**Unsuccessful:** Student does not respond that there are 10 objects.
Commentary: The colors of the counters don't matter except that the set of 7 should be all the same color and the 3 extras should be of a different color. Historically fewer than 20% of students in the Forefront Global Cohort score 3 on this task. This task can reveal more about students who might benefit from extensions and enrichment opportunities.		

Subitize 3 and 5 Number Sense: Subitizing

6. "I am going to show you a card quickly. Tell me how many dots you see."

Flash 3 dot card very quickly followed by the 5, only long enough for students to catch a glimpse (about ½ second.)

3	2	1
Correct for both cards	**Correct for one card**	**Incorrect for both**
Commentary: This task is intended to test for the ability to quickly recognize quantities without needing to count. This ability, known as subitizing, is widely agreed to be an important fundamental skill and a strong indicator of number sense. For students who score a 1 on this task an Add+Vantage Math Structuring Number assessment would be helpful.		

Show Five then Three Fingers Number Sense: Fingers

7. "Show me 5 fingers." After student has shown their answer, say, "**Ok, put your fingers down. Now show me 3 fingers."**

3	2	1
Correct without counting by ones: Student raises fingers all at once for both 3 and 5	**Correct, counts by ones:** Student raises fingers one at a time for either 3 or 5	**Either incorrect:** The student does not show both 5 fingers and 3 fingers when prompted.
Commentary: This task, which has been added for this revised version of the Fall Screeners, is another classic indicator of number sense. Watch students closely on this task. The ability to solve addition and subtraction problems using fingers is important to the work of kindergarten, and the ability to represent these basic numbers on fingers is an important foundational skill for that work.		

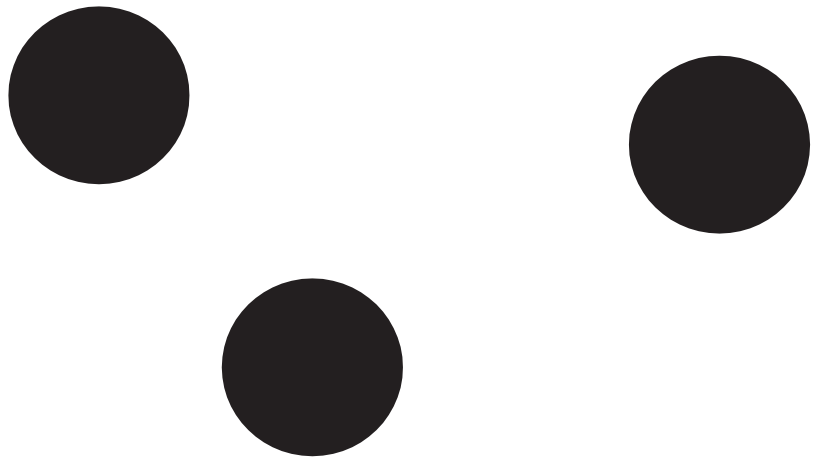
8 5 3 6

2 7 9 1

Adapted from US Math Recovery Council and BVSD Screeners

4

10



Adapted from US Math Recovery Council and BVSD Screeners

Grade 1

Fall Universal Screener for Number Sense

Instructions and Guidance:

The Fall USNS is an interview-based assessment.

Who? Whenever possible, the teacher who works most directly with the child should be the one to administer the interview portion of the screener and score the written portion

Read the entire assessment through in preparation and run through the tasks.

Prepare the materials. Only provide materials as described in the script.

Do not provide the student with paper and pencil.

Set up in a place with as few distractions as possible.

Keep a good pace. Most assessments will take 4 – 5 minutes.

Limit Questioning: It is usually best to attempt to limit questioning and move at a steady pace through the tasks. This improves the efficiency, but also helps to ensure the consistency of administration, and therefore the reliability of the results.

Be flexible: You might find that you can work most efficiently by administering one task at a time, moving from student to student rather than having them come to a station. This can be done with the counting tasks and numeral ID task. Users of Forefront will find that the interview tool can be switched to focus on tasks. Here is a help article for using the interview tool.

Collaborate: Sometimes groups of students can be reorganized in creative ways to provide one teacher with the ability to sit with individual students.

Watch carefully and take notes: The nuances in behaviors that reveal a child's number sense development are sometimes hard to see and hear.

Smile and do your best to make the situation as stress free as possible. If the child seems particularly timid or nervous, consider trying at another time.

Video tape: Although it is not necessary for the administration of the assessment, recording an assessment or two to discuss with colleagues can be an excellent way to learn together, build consistency in administration and scoring, and communicate with parents.

Grade 1: Fall

Number Sense Screener

Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language of Assessment: □ English □ Spanish □ Other: _____

AVMR Assessment(s) Suggested? □ No □ Yes (see below)

Number Words and Numerals	*score*
scoring: correct & fluent: 3pts, correct on 2nd attempt or uncertain: 2pts, unsuccessful: 1 pt	
1. "Start counting from 1 and I will tell you when to stop." (stop at 22) *Notes:*	
2. "Start counting again. This time start at the number 38." (stop at 42) *Notes:*	
3. Count by 10s. (Stop at 100) *Notes:*	
4. Numeral Identification: 8 _____ 5 _____ 12 _____ 17 _____ 20 _____ ☐ *correct and fluent: 3 pts* ☐ *correct but uncertain: 2 pts* ☐ *any unsuccessful: 1 pt* *Notes:*	
AVMR Number Words and Numerals Assessment recommended: _____	
Addition and Subtraction	*score*
scoring: correct on the first attempt: 3 pts, correct on second attempt: 2 pts, unsuccessful: 1 pt	
5. Count 15 counters *Notes:*	
6. 4 + 3 = 7 with covered counters *Notes:*	
7. 8 – 2 = 6 with counters partially covered *Notes:*	
AVMR Addition and Subtraction Assessment recommended? _____	
Structuring Number	*score*
scoring: correct/automatic: 3 pts, correct/works out (fingers, counting): 2 pts, incorrect: 1 pt	
8. 5 bears, then 4 covered *Notes:*	
9. 5 bears, then 2 covered *Notes:*	
AVMR Structuring Number Assessment recommended? _____	
Place Value	*score*
10. 10 dots and 3 more ☐ *13 w/o counting or counts from 10: 3 pts* ☐ *correct counts all: 2 pts* ☐ *incorrect:1 pt* *Notes:*	
AVMR Place Value Assessment recommended? _____	

Adapted from US Math Recovery Council and BVSD Screeners

Grade 1: Fall

Number Sense Screener

Quick Script, *print 1 copy for test administrator*

Numerals, Words and Sequences

1. **"Start counting from 1 and I will tell you when to stop."** (stop at 22) If student is not successful on first attempt, you may ask them to count again.
2. **"Start counting again. This time start at the number 38."** (stop at 42)
   If the student has difficulties getting started say, **"Say the number 38**." (Child says 38)
   "Good, now keep counting."
3. **"Count by tens."** (stop at 100)
4. Numeral Identification Cards: 8, 5, 12, 17, 20.
   Lay the cards out one at a time and ask, **"What number is this?"**

Addition and Subtraction Within 20

5. Put out 15 counters. Ask, **"How many counters are there?"**
   If student is unsuccessful on first attempt say, **"Let's check that. Count them again very carefully."**
6. Place four counters in front of the student and cover without allowing the student to count. **"Here are 4 red counters."** Cover three more counters with a second cover.
   "Here are 3 blue counters. How many counters are there altogether?"
   Repeat the task if not successful on first attempt.
7. Place 8 red counters in front of the student. **"Here are 8 red counters."**
   Cover without allowing the student to count. Remove 2 counters and leave them uncovered. **"How many are left under here?"** Point to the cover.
   If student is unsuccessful on first attempt collect the 8 counters again. Count them aloud, put them in a line, and cover again. Remove two and ask, **"How many are still under here?"**

Structures, Flexibility & Fluency

8. Present bear card. Ask, **"How many bears are there?"** Confirm that there are 5. Without child seeing, cover 4 bears.
   "How many bears do you see now? How many are hidden?"
9. Present bear card again. **"How many bears are there?"** Confirm that there are 5.
   Without child seeing, cover 2 bears.
   "How many bears do you see? How many are hidden?"

Place Value

10. **"Here I have 10 dots."** Put the ten-frame onto the table in front of the child. **"Here, I have 3 more. How many are there all together?"**

Grade 1: Fall

Number Sense Screener

Spanish Script, *print 1 copy/test administrator*

Numerals, Words, and Sequences

1. **"Comienza a contar desde el 1 y te diré cuándo parar."** (stop at 22) If student is not successful on first attempt, you may ask them to count again.
2. **"Comienza a contar de nuevo. Esta vez empieza con el número 38.** (stop at 42)
   If the student has difficulties getting started say, **"Diga el numero 38**." (Child says 38)
   "Bueno, sie contanto."
3. **"Cuenta de diez en diez."** (stop at 100)
4. Numeral Identification Cards: 8, 5, 12, 17, 20.
   Lay the cards out one at a time and ask, **"¿Qué número es este?**

Addition and Subtraction Within 20

5. Put out 15 counters. Ask, **"¿Cuántas fichas hay?"**
   If student is unsuccessful on first attempt say, **"Vamos a revisar, cuenta de nuevo con mucho cuidado."**
6. Place four counters in front of the student and cover without allowing the student to count. **"Aquí hay 4 fichas rojas."** Cover 3 more counters with a second cover, **"Aquí hay 3 fichas azules. ¿Cuántas fichas hay en total?"**
   Repeat the task if not successful on first attempt.
7. Place 8 red counters in front of the student. **"Aquí hay 8 fichas rojas."**
   Cover without allowing the student to count. Remove 2 counters and leave them uncovered. **"¿Cuántas quedan aquí debajo?"** Point to the cover.
   If student is unsuccessful on first attempt collect the 8 counters again. Count them aloud, put them in a line, and cover again. Remove two and ask, **"¿Cuántas quedan todavía aquí debajo?"**

Structures, Flexibility & Fluency

8. Present bear card. Ask, **"¿Cuántos osos hay?"** Confirm that there are 5. Without child seeing, cover 4 bears.
   "¿Cuántos osos ves ahora? ¿Cuántos están escondidos?"
9. Present bear card again. **"¿Cuántos osos hay?"** Confirm that there are 5. Without child seeing, cover 2 bears. **"¿Cuántos osos ves? ¿Cuántos están cubiertos?"**

Place Value

10. **"Aquí tengo diez puntos."** Put the ten-frame onto the table in front of the child. **"Aquí tengo tres más. ¿Cuántos hay en total?"**

Grade 1: Fall

Administration Guide

Scoring Guide, *print 1 copy/test administrator*

Count to 22 Number Sense: Forward Number Word Sequences

1. **"Start counting from one and I will tell you when to stop."** (Stop at 22) Listen carefully. If a student appears to skip a number, have them try again. Sometimes it helps to ask the student to count slowly and loudly.

3	2	1
Correct/fluent on 1st attempt	**Correct, but uncertain:** Enter a score of 2 if the student is hesitant or makes self-corrections, or if student is correct on 2nd attempt.	**Unsuccessful:** Student is unable to complete the count to 22 without errors.
Commentary: By the end of kindergarten students are expected to be able to count to 100 starting from any number in the sequence. The ability to be able to count is an important foundational skill and one that is highly indicative success in first grade. Students who are unable to count to 22 should immediately be considered for targeted instruction and their progress should be monitored. For students who score 1 or 2 on this task consider the Add+Vantage Math Recovery Assessment Number Words and Numerals.		

Count from 38 to 42 Number Sense: Forward Number Word Sequences

2. "Start counting again. This time start at the number 38." (stop at 42)
If the student has difficulties getting started say, **"Say the number 38**." (Child says 38) **"Good, now keep counting."**

3	2	1
Correct/fluent: Student counts from 38-42 without delays or self-corrections.	**Correct, but uncertain:** Student is able to complete the count but makes-self corrections, is hesitant, or needs to drop back for a "running start."	**Unsuccessful:** Student is unable to complete the count.
Commentary: The ability to start a count starting at any number in the sequence is a foundational skill for using counting on for addition and counting back for subtraction. For students who score 1 on this task consider administering the Add+Vantage Math Recovery Assessment Number Words and Numerals.		

Grade 1: Fall

Count by 10s Number Sense: Skip Count by 10s

3. "Count by tens." (Stop at 100) If a student is unsure what the prompt means and hesitates to start or starts counting 10, 11, 12, etc. it is ok to support the student by saying, "**Count by tens, like this 10, 20..."** (do not go past 20 with this additional prompt.) If the student makes mistakes you may as the student to count again.

3	2	1
Correct/fluent: Students counts by tens without significant pauses. Minor self-corrections are ok.	**Correct, but uncertain:** Student makes longer pauses, and or makes self-corrections. If the student makes mistakes on the first count and you ask them to try again and they are successful on a second attempt enter a 2.	**Unsuccessful:** Student is unable to count by 10s to 100.
Commentary: The ability to count by 10s is critical for the development of place value concepts. Although the student might not yet have a full understanding of tens, fluency with the verbal sequence will support later conceptual development. This is a skill that all students should continue to master in first grade as they move beyond 100 in their counts and as they learn to add 10 to any number under 100.		

Numeral ID to 20 Number Sense: Numeral ID

4. Numeral Identification: Present each numeral card one at a time in this order.
"What number is this?" 8, 5, 12, 17, 20

3	2	1
All correct, confident: Student responds to each card promptly with the correct answer.	**All correct, but uncertain:** Student expresses uncertainty, self corrects or otherwise shows that they need more practice with reading numerals under 20. If the student reads 17 as 70 make note. If this is the only mistake score as a 2.	**Any Incorrect:** Student is unable to read one or more of the numbers.
Commentary: This quick sampling of numerals is used to determine quickly if a student is confident with reading numbers to 20. Use this screener to determine which students to assess for their ability to read all numbers under 20 quickly and easily. For students who score 2 or 1 consider using AVMR Number Words and Numerals Assessment.		

Grade 1: Fall

Count 15 Objects Number Sense: One to One Correspondence

5. Put out 15 counters for the child to count. Can be multiple colors or all one color. **"How many counters are here?"** If student is unsuccessful on first attempt say, **"Let's check that. Count them again very carefully."**

3	2	1
Correct on first attempt: Student demonstrates one-to-one correspondence and a solid number word sequence to 15.	**Correct on 2nd attempt:** Student makes minor errors in counting that lead to inconsistency.	**Unsuccessful:** Student is unable to count a set of 15 objects.
The ability to enumerate a set of up to 20 objects is indicative of not only an important skill, but also critical cognitive development. Students who are unable to count a set of up to 20 objects should receive targeted instruction and progress should be monitored. If there is any doubt that the student has not yet developed cardinality, after the student has completed the count ask, **"So, how many are there?"** If the student proceeds to count again take note of this. Students need to know that the last number said when counting represents the total number of objects in the set. If, when asked, the student counts the set again it is likely that some explicit instruction is necessary. Telling the student directly, "When we count, the last number we say is how many are there. So how many counters are there?" This will support students in developing this understanding. For students who are unsuccessful, consider administering AVMR Addition and Subtraction assessment.		

4 and 3 Covered Number Sense: Covered Tasks - Addition

6. Put 4 counters all of the same color in front of the child. **"Here are four counters."** Cover them without allowing the child to count. Put out 3 more counters of a different color next to the 4. **"I am putting 3 more counters here."** Cover them without allowing the child to count. Using your hand to indicate both groups, **"How many are there altogether?"**

3	2	1
Correct on first attempt: Student correctly answers 7. A variety of solution strategies are possible and all are valid.	**Correct on second attempt:** Student is unsuccessful on the first attempt, but is able to find the correct answer on 2nd attempt. Any solution strategy is acceptable.	**Unsuccessful:** Student is unable to solve the task successfully.
This task is a strong number sense indicator, in that it is a simple task within finger range. Students who are unsuccessful with this task would likely benefit from prompt targeted instruction. The ability to solve this task is indicative of cognitive development that is foundational for success in 1st grade.		

Grade 1: Fall

Eight Counters – Remove 2 Number Sense: Covered Tasks - Subtraction

7. Place 8 red counters in front of the student. **"Here are 8 red counters"** (Cover without allowing the student to count.) Remove 2 counters and leave them uncovered. **"I took two counters back out. How many are still under here?"** Point to the cover.

If the student is unsuccessful, collect the counters and lay them down again, putting them into a line as you count them aloud. **"1, 2, 3, 4, 5, 6, 7. 8"** Cover them again. **"There are 8 counters under here. I am removing two. How many are still under here?"**

3	2	1
Correct on first attempt: Student correctly answers 6 on first attempt.	**Correct on second attempt:** With the additional support of counting and structure student answers correctly.	**Unsuccessful:** After the 2nd presentation, student is still unable to solve.
Subtraction is a difficult topic to teach and to learn. Students who score 1 on this task will need additional instructional supports when subtraction is introduced in 1st grade, which is often early in the year. Consider the drawn and material supports that can support students in arriving at accurate solutions, but also for developing conceptual understanding. These same students will also likely benefit from targeted instruction. To further determine where the instructional starting point is, consider presenting a smaller number of counters (4 or 5) and remove one to see if the student is able to answer.		

Grade 1: Fall

5 Bears, Some Hiding Number Sense: Structures, Flexibility and Fluency

8. Present bear card. Ask, **"How many bears are there?"** Allow the student to count if necessary and confirm that there are 5. Without child seeing, cover 4 bears. **"How many bears do you see now? How many are hidden?"**

9. Present bear card again. **"How many bears are there?"** Confirm that there are 5. Without child seeing, cover 2 bears. **"How many bears do you see? How many are hidden?**

3	2	1
Correct and Automatic: Student quickly is able to identify the number of hidden bears without signs of counting.	**Correct/Works out:** Student is able to tell the numbers of hidden bears, but needs to count and/or use fingers to work out.	**Unsuccessful:** Student is unable to accurately determine the number of hidden bears.
Commentary: Knowing combinations to 5 is a critical milestone on the road to fluency with addition and subtraction. Students who are unsuccessful with these tasks will need ample opportunities for them to develop this fluency if they are going to reach the end of 1st grade goal, which is fluency within 10.		

Ten and three more Number Sense: Place Value: Ones, Tens and Hundreds

10. "Here I have 10 dots." Put the ten-frame onto the table in front of the child. **"Here, I have 3 more. How many are there all together?"**

3	2	1
Correct, counts from 10 or answers without counting: Student operates off the ten without needing to count the ten.	**Correct, Counts All:** Student counts the ten and the three to answer 13	**Unsuccessful:** Student does not answer 13
Commentary: The ability to operate off of 10 is foundational for much of the work related to place value in 1st grade. Learning to do this takes time and this ability is an important developmental landmark. For students who score at a level 1 on this task, there is important work to do related to 1:1 correspondence and targeted supports are likely necessary. Students who score 1 on his task should be further assessed, an Add+Vantage Math Recovery Addition & Subtraction test is recommended.		

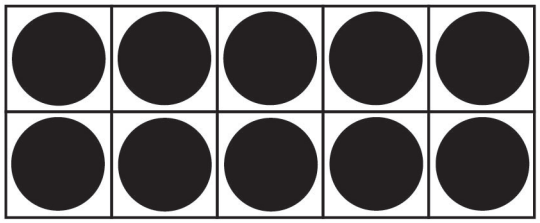
8

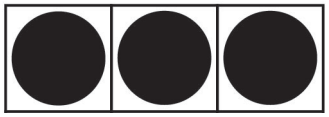
5

12

20

17





Grade 2

Fall Universal Screener for Number Sense

Instructions and Guidance:

The Fall Number Sense Screeners are entirely interview-based assessments.

Who? Whenever possible, the teacher who works most directly with the child should be the one to administer the interview portion of the screener and score the written portion

Read the entire assessment through in preparation and run through the tasks.

Prepare the materials. Only provide materials as described in the script.

Do not provide the student with paper and pencil.

Set up in a place with as few distractions as possible.

Keep a good pace. Most assessments will take 4 – 6 minutes.

Limit Questioning: It is usually best to attempt to limit questioning and move at a steady pace through the tasks. This improves the efficiency, but also helps to ensure the consistency of administration, and therefore the reliability of the results.

Be flexible: You might find that you can work most efficiently by administering one task at a time, moving from student to student rather than having them come to a station. This can be done with the counting tasks and numeral ID task. Users of Forefront will find that the interview tool can be switched to focus on tasks. Here is a help article for using the interview tool.

Collaborate: Sometimes groups of students can be reorganized in creative ways to provide one teacher with the ability to sit with individual students.

Watch carefully and take notes: The nuances in behaviors that reveal a child's number sense development are sometimes hard to see and hear.

Smile and do your best to make the situation as stress free as possible. If the child seems particularly timid or nervous, consider trying at another time.

Video tape: Although it is not necessary for the administration of the assessment, recording an assessment or two to discuss with colleagues can be an excellent way to learn together, build consistency in administration and scoring, and communicate with parents.

Grade 2: Fall

Number Sense Screener

Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language of Assessment: □ English □ Spanish □ Other: _____

AVMR Assessment(s) Suggested? □ No □ Yes (see below)

Number Words and Numerals	*score*
scoring: correct & fluent: 3 pts, correct but uncertain: 2 pts, unsuccessful: 1 pt	
1. "Start counting from 27 and I will tell you when to stop." (Stop at 43) *Notes:*	
2. "Start counting from 96 and I will tell you when to stop." (Stop at 120) *Notes:*	
3. Count backwards from 23 to 10 *Notes:*	
4. Numeral Identification: 66 ____ 71 ____ 90 ____ 17 ____ 54 ____ ☐ *correct and fluent: 3 pts* ☐ *correct but uncertain: 2 pts* ☐ *any unsuccessful: 1 pt* *Notes:*	
AVMR Number Words and Numerals Assessment recommended? _____	
Addition and Subtraction	*score*
scoring: correct on the first attempt: 3 pts, correct on second attempt: 2 pts, unsuccessful: 1 pt	
5. 9 + 6 with covered counters *Notes:*	
6. 14 – 3 with partially covered counters *Notes:*	
AVMR Addition and Subtraction Assessment recommended? _____	
Structuring Number	*score*
scoring: correct and automatic: 3 pts, correct/works out: 2 pts, unsuccessful: 1 pt	
7. Two numbers that make 10: ___ + ___ *Notes:*	
8. Another two numbers that make 10: ____ + ____ *Notes:*	
AVMR Structuring Number Assessment recommended? _____	
Place Value	*score*
9. 10 and 6 more ☐ *correct without counting: 3 pts* ☐ *counts by ones to solve: 2 pts* ☐ *unsuccessful: 1 pt* *Notes:*	
10. 16 and 10 more ☐ *correct: w/o counting by ones: 3 pts* ☐ *correct: counts by ones: 2 pts* ☐ *unsuccessful: 1 pt* *Notes:*	
AVMR Place Value Assessment recommended? _____	

Grade 2: Fall

Number Sense Screener

Quick Script, *print 1 copy for test administrator*

Numerals, Words and Sequences

1. **"Start counting from 27 and I will tell you when to stop."** (Stop at 43) You may ask the student to count again to see if they are correct on a second attempt.
2. **"Start counting from 96 and I will tell you when to stop."** (Stop at 120) You may ask the student to count again to see if they are correct on a second attempt.
3. **"Count backward from 23 and I will tell you when to stop."** (stop at 10) If the student at first counts up, interrupt them to correct them, saying, **"That is counting up. This time we are counting down, to zero."** You may ask the student to count again if they make a mistake.
4. Numeral Identification Cards: 66, 71, 90, 17, 54.
   Lay the cards out one at a time and ask, **"What number is this?"**

Addition and Subtraction

5. **"Here are 9 counters."** (Cover.) **"Here are 6 counters."** (Cover.) **"How many counters are there all together?"**
   If the student is unsuccessful on the first attempt show the whole task again.
6. Put out 14 counters of one color. (Cover.)
   "Here are 14 counters." Remove 3 counters and cover. **"I'm taking away 3. How many counters are still under here?"** Gesture to the first cover.
   If the student is not successful on first attempt pose the question a second time.

Structures, Flexibility & Fluency

7. **"Tell me two numbers that go together to make 10."** (Prompt for addition.)
8. **"Tell me another two numbers that go together to make 10."** (Prompt for addition.)
   If the student says 10 and 0 do not score and ask for another combination.

Place Value

9. Put a 10-frame on the table. **"I have some dots here. How many do you think there are?"** If student doesn't know, take note and have the student count. Confirm that there are 10 dots. Slide them under a cover. **"I put these 10 dots under here, and now I am going to add 6 more."** Show the 6 dots. Slide them under the cover. **"How many are under here now?"**
10. Confirm that there are 16. (If student was unsuccessful, reveal all the dots and demonstrate a count like this. **"There are 16. Look, 10** (gesturing to the strip of ten) **11, 12, 13, 14, 15, 16."** (pointing to the six dots). **Ten and six is sixteen."** Cover again. **"There are 16 dots under here. I am going to put another strip of 10."** Show the strip of 10 and slide it under with the 16. **"How many are under here now?"**

Grade 2: Fall

Number Sense Screener

Spanish Script, *print 1 copy for test administrator*

Numerals, Words & Sequences

1. **"Comienza a contar desde el 27 y yo te diré cuándo parar."** (Stop at 43) You may ask the student to count again to see if they are correct on a second attempt.
2. **"Comienza a contar desde el 96 y yo te diré cuándo parar."** (Stop at 120) You may ask the student to count again to see if they are correct on a second attempt.
3. **"Cuenta hacia atrás desde el 23 y yo te diré cuándo parar."** (stop at 10) If the student at first counts up, interrupt them to correct them, saying, **"Eso es contar hacia arriba. Estamos contando hacia abajo, hacia el cero."** You may ask the student to count again if they make a mistake.
4. Numeral Identification Cards: 66, 71, 90, 17, 54.
   Lay the cards out one at a time and ask, **"¿Qué número es este?"**

Addition and Subtraction Within 20

5. **"Aquí hay 9 fichas."** (Cover.) **Aquí hay 6 fichas."** (Cover.) **"¿Cuántas fichas hay en total?"**
   If the student is unsuccessful on the first attempt show the whole task again.
6. Put out 14 counters of one color. (Cover.)
   "Aquí hay 14 fichas." Remove 3 counters and cover. **"Voy a quitar 3. ¿Cuántas fichas hay todavía aquí debajo?"** Gesture to the first cover.
   If the student is not successful on first attempt pose the question a second time.

Structures, Flexibility & Fluency

7. **"Dime dos números que juntos sumen 10."** (Prompt for addition.)
8. **"Dime otros dos números que juntos sumen 10."** (Prompt for addition.)
   If the student says 10 and 0 do not score and ask for another combination.

Place Value

9. Put a 10-frame on the table. **"Tengo algunos putos aquí. ¿Cuántos piensas que hay?"** If student doesn't know, take note and have the student count. Confirm that there are 10 dots. Slide them under a cover**. "Puse estos 10 puntos debajo y ahora voy a sumar 6 más."** Show the 6 dots. Slide them under the cover. **"¿Cuántos hay aquí debajo ahora?"**
10. Confirm that there are 16. (If student was unsuccessful, reveal all the dots and demonstrate a count like this. **"Hay 16. Mira, 10** (gesturing to the 10-frame) **11, 12, 13, 14, 15, 16."** (pointing to the six dots). **Diez y seis es dieciseis."** Cover again.
    "Hay 16 puntos aquí debajo. Voy a poner otros 10." Show the 10-frame and slide it under with the 16. **"¿Cuántos hay ahora?"**

Grade 2: Fall

Administration Guide

Scoring Guide, *print 1 copy/test administrator*

Count from 27 to 43 Number Sense: Forward Number Word Sequence

1. "Start counting from 27 and I will tell you when to stop" (Stop at 43) You may ask the student to count again to see if they are correct on a second attempt.

3	2	1
Correct and fluent: Student starts counting and continues to count correctly without long pauses or self-corrections.	**Correct, but uncertain:** The student is able to complete the count, but looks to the teacher for reassurance, has longer pauses for thinking, or makes self-corrections. Or student counts correctly on 2nd attempt.	**Unsuccessful:** Student is unable to count starting at 27, or makes mistakes in the sequence. If you feel that the student has made these mistakes and would be able to self-correct on a second attempt, prompt the student to start over and if student is correct, score as 2.
Commentary: The ability to count within 100 starting from any number in the sequence is a kindergarten expectation. This is indicative of not only a skill, but also important foundational conceptual development. Students who score a 1 on this task should be recommended for an AVMR Number Words & Numerals assessment.		

Count from 96 to 120 Number Sense: Forward Number Word Sequence

2. "Start counting from 96 and I will tell you when to stop." (Stop at 120) You may ask the student to count again to see if they are correct on a second attempt.

3	2	1
Correct and fluent: Student starts counting and continues to count correctly without long pauses for thinking or self-corrections.	**Correct, but uncertain:** The student is able to complete the count, but looks often to the teacher for reassurance, has longer pauses for thinking, or makes self-corrections. Or student counts correctly on 2nd attempt.	**Unsuccessful:** Student is unable to count starting at 96 or makes mistakes in the sequence.
Commentary: The ability to count within 120 starting from any number in the sequence is a 1st Grade (1.NBT.A.1) expectation. This is indicative not only of a skill, but also important foundational conceptual development. Students who score a 1 on this task should be recommended for an AVMR Number Words & Numerals assessment.		

Grade 2: Fall

Count Back from 23 to 10 Number Sense: Backward Number Word Sequence

3. "Count backward from 23 and I will tell you when to stop." (stop at 10) If the student at first counts up, interrupt them to correct them, saying, **"That is counting up. This time we are counting down, to zero."** You may ask the student to count again if they make a mistake.

3	2	1
Correct and fluent: Student starts counting down and continues to count correctly without long pauses for thinking or self-corrections.	**Correct, but uncertain:** The student is able to complete the count, but looks often to the teacher for reassurance, has longer pauses for thinking, or makes self-corrections. Or student counts correctly on 2nd attempt.	**Unsuccessful:** Student is unable to count starting at 27 or makes mistakes in the sequence.
Commentary: The ability to count within 100 starting from any number in the sequence is a kindergarten expectation. This is indicative of not only a skill, but also important foundational conceptual development. Students who score a 1 on this task should be recommended for an AVMR Number Words & Numerals assessment.		

Numeral ID to 100 Number Sense: Numeral ID

4. Numeral Identification Cards: 66, 71, 90, 17, 54.

Lay the cards out one at a time and ask, **"What number is this?"**

3	2	1
Correct and fluent: Student correctly reads the number with certainty.	**Correct, but uncertain:** The student reads the numbers correctly, but perhaps looks to the teacher for reassurance, has longer pauses for thinking, or makes self-corrections. If the child appears to say "70" when presented with the number 17, or nineteen when shown the 90, take note and score as a 2.	**Unsuccessful:** Student makes a mistake when reading one or more numbers (see the possible exception for 17 or 90). Student makes errors indicative of issues with reading numbers under 100.
Commentary: The ability to read numbers under 100 is a 1st Grade Standard. Given that students will be working extensively with numbers to 100 in 2nd Grade, knowing number names and being able to read and write numbers is an essential, fundamental skill for accessing the grade level curriculum. This is a very brief sampling of numbers under 100. If there is any doubt, further assessment should happen. Students who score a 1 on this task should be recommended for an AVMR Number Words & Numerals assessment.		

Grade 2: Fall

9 Covered and 6 More Number Sense: Covered Task - Addition

5. "Here are 9 blue counters." (Cover.) **"Here are 6 red counters."** (Cover.) **"How many counters are there all together?"**

If the student is unsuccessful on the first attempt show the whole task again.

If strategy is not obvious ask, **"How did you figure that out?"**

3	2	1
Correct on first attempt: Student may use a variety of strategies to solve this problem.	**Correct on second attempt:** A variety of strategies are acceptable.	**Unsuccessful:** Student is unable to accurately determine that the sum is 15.
Commentary: This problem is indicative of ability to operate off of a given value. The ability to solve this problem demonstrates a significant conceptual development and can be considered a milestone. Students who are unsuccessful with this task should be recommended for an Add+Vantage Math Addition & Subtraction assessment.		

14 Counters Remove 3 Number Sense: Covered Task - Subtraction

6. Put out 14 counters of one color in front of the child by do not allow them to count (Cover.) **"Here are 14 counters."** Remove 3 counters and cover. **"I'm taking away 3. How many counters are still under here?"**

If the student is not successful on first attempt pose the entire task a second time.

3	2	1
Correct on first attempt: Student may use a variety of strategies to solve this problem.	**Correct on second attempt:** A variety of strategies are acceptable.	**Unsuccessful:** Student is unable to accurately determine that the difference is 11.
Commentary: Like the previous problem, the ability to solve this problem is indicative of ability to operate off of a given value and demonstrates a significant conceptual development and can be considered a milestone. Students who are unsuccessful with this task should be recommended for an Add+Vantage Math Addition & Subtraction assessment.		

Partitions of 10 Number Sense: Structures, Flexibility & Fluency

7. "Tell me two numbers that go together to make 10." (Prompt for addition.)

8. "Tell me another two numbers that go together to make 10." (Prompt for addition.)

If the student says 10 and 0 do not score and ask for another combination.

3	2	1
Correct and Automatic: Fluent recall.	**Correct/Works out:** Student is able to produce combinations of ten, but significant think time is necessary, counting of fingers, or self-corrections all indicate a level 2 type response.	**Unsuccessful:** Student is unable to accurately provide a combination of two numbers that combine to make 10.
Commentary: Knowing combination of numbers that combine to make 10 is critical for the development of more sophisticated computational strategies. Students who score less than 3 on these two tasks should be recommended for AVMR Structuring Numbers Assessment.		

Grade 2: Fall

Ten Dots and Six More Number Sense: Place Value - Ones, Tens, and Hundreds

9. "I have a strip of dots here. How many do you think there are?" If student doesn't know, take note and have the student count. Confirm that there are 10 dots. Slide them under a cover. **"I put these 10 dots under here, and now I am going to add 6 more."** Show the 6 dots. Slide them under the cover. **"How many are under here now?"**
Allow the student to answer, then confirm that there are 16. (If student was unsuccessful, reveal all the dots and demonstrate a count like this. **"There are 16. Look, 10** (gesturing to the strip of ten) **11, 12, 13, 14, 15, 16."** (pointing to the six dots). **Ten and six is sixteen."** Cover again and do not remove the items. Proceed to the next task.

3	2	1
Correct, no counting by ones: To score a 3 on this task the student should respond 16.	**Correct-counts by ones:** The student counts by ones to solve either by counting from 1 or counting on from 10.	**Unsuccessful:** Student does not answer 16.
Commentary: Place value as it relates to tens and ones is essential to the work of 2nd grade. It is critical that students who know that a ten and some more ones create teen numbers. This problem has close ties to the Structuring Number section above and should also be considered within that context. It could be also proposed that this question is similar enough to Addition & Subtraction that it should be considered with those problems in mind. Many students who are unsuccessful with this task likely would have already been recommended for an AVMR assessment in one of the previous two sections.		

Sixteen and Ten More Number Sense: Place Value - Ones, Tens, and Hundreds

10. "There are 16 dots under here. I am going to put another ten." Show the strip of 10 and slide it under with the 16. **"How many are under here now?"**

3	2	1
Correct, w/o count by ones: To score a 3 on this task the student should respond 26.	**Correct-counts by ones:** The student counts by ones to solve.	**Unsuccessful:** Student does not answer 26.
Commentary: Place value as it relates to tens and ones is essential to the work of 2nd grade. It is critical that students can add tens to any number under 100. This problem, which is the most challenging task of the assessment is nevertheless indicative of an understanding of place value that is foundational to the work of the grade. If students are unsuccessful with this task, the AVMR Place Value assessment would reveal more about their understanding, but that assessment would not be recommended for students who were also unsuccessful with tasks #4 and #7 & 8. For those students use the AVMR Addition and Subtraction assessment.		

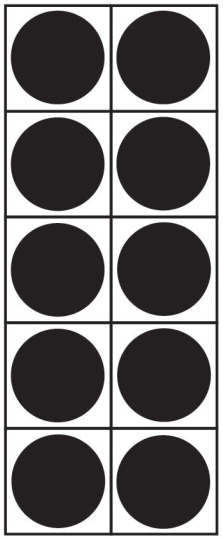
66

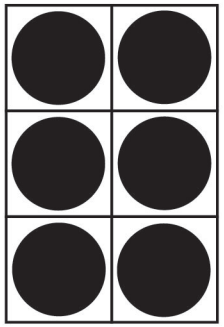
71

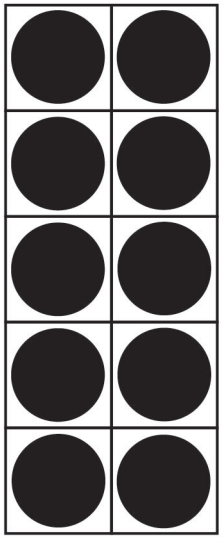
90

17

54







Grade 3

Fall Universal Screener for Number Sense

Instructions and Guidance:

Who? Whenever possible, the teacher who works most directly with the child should be the one to administer the interview portion of the screener and score the written portion

Read the entire assessment through in preparation and run through the tasks.

Prepare the materials. Only provide materials as described in the script.

Do not provide the student with paper and pencil.

Set up in a place with as few distractions as possible.

Keep a good pace. Most assessments will take 4 – 6 minutes.

Limit Questioning: It is usually best to attempt to limit questioning and move at a steady pace through the tasks. This improves the efficiency, but also helps to ensure the consistency of administration, and therefore the reliability of the results.

Be flexible: You might find that you can work most efficiently by administering one task at a time, moving from student to student rather than having them come to a station. This can be done with the counting tasks and numeral ID task. Users of Forefront will find that the interview tool can be switched to focus on tasks. Here is a help article for using the interview tool.

Collaborate: Sometimes groups of students can be reorganized in creative ways to provide one teacher with the ability to sit with individual students.

Watch carefully and take notes: The nuances in behaviors that reveal a child's number sense development are sometimes hard to see and hear.

Smile and do your best to make the situation as stress free as possible. If the child seems particularly timid or nervous, consider trying at another time.

Video tape: Although it is not necessary for the administration of the assessment, recording an assessment or two to discuss with colleagues can be an excellent way to learn together, build consistency in administration and scoring, and communicate with parents.

Grade 3: Fall

Number Sense Screener

Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language of Assessment: □ English □ Spanish □ Other: _____

AVMR Assessment(s) Suggested? □ No □ Yes (see below)

Number Words and Numerals	*score*
scoring: correct & fluent: 3 pts, correct on 2nd attempt or uncertain: 2 pts, unsuccessful: 1 pt	
1. "Start counting up from 496." (stop at 502). *Notes:*	
2. "Count backward from 303." (stop at 298) *Notes:*	
3. Numeral Identification: 106 ____ 212 ____ 577 ____ 1,000 ____ ☐ *correct and fluent: 3 pts* ☐ *correct but uncertain: 2 pts* ☐ *any unsuccessful: 1 pt* *Notes:*	
AVMR Number Words and Numerals Assessment recommended: _____	
Multiplication and Division	*score*
scoring: correct on the first attempt: 3 pts, correct on second attempt: 2 pts, unsuccessful: 1 pt	
4. 12 counters into 4 equal groups. *Notes:*	
AVMR Multiplication and Division Assessment recommended? _____	
Place Value and Addition and Subtraction	*score*
5. Count back from 120 by 10s. ☐ *correct and fluent: 3 pts* ☐ *correct but uncertain: 2 pts* ☐ *incorrect: 1 pt* *Notes:*	
6. 45 + 19 ☐ *correct w/o counting by ones: 3 pts* ☐ *correct: counts by ones: 2 pts* ☐ *incorrect: 1 pt* *Notes:*	
7. 50 – 24 ☐ *correct w/o counting by ones: 3 pts* ☐ *correct: counts by ones: 2 pts* ☐ *incorrect: 1 pt* *Notes:*	
8. Difference in two lines (64 and 58) ☐ *correct: 3 pts* ☐ *attempts counting: 2 pts* ☐ *doesn't see where the difference is found 1 pt* *Notes:*	
AVMR Place Value and Addition and/or Subtraction Assessments recommended? _____	
Structuring Number	*score*
scoring: correct and automatic: 3 pts, correct/works out: 2 pts, incorrect: 1 pt	
9. ____ + ____ = 13 *Notes:*	
10. ____ + ____ = 13 *Notes:*	
AVMR Structuring Number recommended? _____	

Grade 3: Fall

Number Sense Screener

Quick Script, *print 1 copy/test administrator*

Numerals, Words and Sequences

1. **"Start counting at 496."** (stop at 502). Allow for 2 attempts if necessary. Put numeral card 496 on table for second attempt.
2. **"Count backward from 303."** (stop at 298) Allow for 2 attempts if necessary. Put numeral card 303 on table for second attempt.
3. Numeral Identification Cards: 106, 212, 577, and 1,000.
   Lay the cards out one at a time and ask, **"What number is this?"**

Multiplication and Division

4. Put out a collection of 12 counters for the student. **"Here are 12 counters. Use these counters to make 4 equal groups."**
   If the student is not correct on first attempt, ask the student to show you again.
   *See full detailed script for more prompt suggestions.

Place Value

5. **"Start at 120 and count back by tens."** (Allow student to count to zero)
6. Place the card **45 + 19** in front of the student. **"Read this card."** Ensure the student reads it correctly and help them if necessary. **"Work out the answer."**
   "How did you solve it?"
   (Optional: If the student duplicates a standard written algorithm ask, **"Do you have another way to work it out?"**)
7. Present the card 50 - 24. **"Read this card."** If the student is unable to read the card correctly, take note and support them in reading it. **"How much is 50 - 24?"** If student is unsuccessful, present the set of 50 dots. Present it as a full grid of 50 dots. **"Here are 50 dots. See how there are 5 columns with 10 dots each."** Cover the grid and pull out the section of 24 dots. **"I have taken 24 back out. How many are still under here?"** Leave the 24 dots uncovered on the table.

Problem Solving - Comparisons

8. Show the student the two number lines from the materials. **"This top line measures 58 units long. The bottom one measures 64 units. Which line is longer?** Allow student to answer and confirm that the bottom line is longer. **How much longer is the bottom line than the top line?"**

Structures, Flexibility & Fluency

9. **"Tell me two numbers that go together to make 13."** (Rephrase if necessary to ask for addition.)
   If student says 13 + 0 do not score and ask for another way to make 13.
10. **"Tell me another two numbers that go together to make 13."**
    If student says 13 + 0 do not score and ask for another way to make 13.

Grade 3: Fall

Number Sense Screener

Spanish Script, *print 1 copy/test administrator*

Numerals, Words & Sequences

1. **"Comienza a contar desde el 496."** (Stop at 502) Allow for 2 attempts if necessary. Put numeral card 496 on table for second attempt.
2. **"Cuenta hacia atrás desde el 303."** (Stop at 298) Allow for 2 attempts if necessary. Put numeral card 303 on table for second attempt.
3. Numeral Identification Cards: 106, 212, 577, and 1,000.
   Lay the cards out one at a time and ask, **"¿Cuál número es éste?"**

Multiplication and Division

4. Put out a collection of 12 counters for the student. **"Aquí hay 12 fichas. Usa estas fichas para hacer 4 grupos iguales."**
   If the student is not correct on first attempt, ask the student to show you again.
   *See full detailed script for more prompt suggestions.

Place Value

5. **"Comenzando desde e120 cuenta hacia atrás de diez en diez."** (Allow student to count to zero.)
6. Place the card **45 + 19** in front of the student. **"Lee esta tarjeta."** Ensure the student reads it correctly and help them if necessary. **"Calcula la respuesta."**
   "¿Cómo lo resolviste?"
   (Optional: If the student duplicates a standard written algorithm ask, **"¿Tienes otra manera para resolverlo?"**)
7. Present the card 50 - 24. **"Lee esta tarjeta** If the student is unable to read the card correctly, take note and support them in reading it. **"Calcula la respuesta."** If student is unsuccessful, present the set of 50 dots. Present it as a full grid of 50 dots. **"Aquí hay 50 puntos. Mira como hay 5 columnas con 10 puntos cada una."** Cover the grid and pull out the section of 24 dots. **"Le quite 24. ¿Cuántos quedan aquí debajo?"** Leave the 24 dots uncovered on the table.

Problem Solving - Comparison

8. Show the student the two number lines from the materials. **"La primera línea mide 58 unidades de largo. La de abajo mide 64 unidades. ¿Cuál línea es más larga?** Allow student to answer and confirm that the bottom line is longer.**¿Qué tanto más larga es la línea de abajo que la primera línea?"**

Structures, Fluency & Flexibility

9. **"Dime dos números que juntos sumen 13."** (Rephrase if necessary, to ask for addition.) If student says 13 + 0 do not score and ask for another way to make 13.
10. **"Dime otros dos números que juntos sumen 13."**

Grade 3: Fall

Administration Guide

Detailed Script and Scoring Guide, *print 1 copy/test administrator*

Count from 496 to 502 Number Sense: Forward Number Word Sequence (FNWS)

1. "Start counting at four hundred ninety six" (stop at 502). If the student makes an error on the first attempt that you think might be corrected with a second attempt, lay the number card 496 in front of student and say, **"OK. Let me hear that one more time. Start counting from four hundred ninety six and I will tell you when to stop."** If time allows, have the student to continue counting (e.g. to 512).

3	2	1
Correct and fluent: Student counts accurately and with confidence.	**Uncertain but correct:** Student is able to complete the count, but might need to pause to think, make self-corrections, express uncertainty, or need a second attempt.	**Incorrect:** Student is unable to successfully complete the count.
Commentary: Counting in the higher ranges reveals an understanding of the number system more than an ability to *memorize* the sequence. Although this question is in the section of Number Words and Numerals, this question also reveals practical understanding of place value. For students who score at a level one, further assessments should be done. A quick second step would be to ask the student to count from 98 - 112. For students who are unsuccessful with this task, consider using the Add+Vantage Math Recovery Number Words and Numerals assessment.		

Count Back from 303 to 298 Number Sense: Backward Number Word Sequence (BNWS)

2. "**Count backward from three hundred three."** (stop at 298) If the student makes an error on the first attempt that might be corrected with a second attempt, put the number card 303 on the table and say, **"Let me hear that one more time. Start with three hundred three (point to card) and count backward."**

3	2	1
Correct and fluent: Student counts accurately and with confidence. Pauses for thinking are OK.	**Correct but uncertain:** Student is able to complete the count, but might need to pause to think, make self-corrections, express uncertainty, or need a second attempt.	**Incorrect:** Student is unable to successfully complete the count.
As with counting forward, counting back is a skill that reveals understanding of the number system more than an ability to *memorize* a sequence of numbers. Because counting backward is significantly harder than counting forward allow for think time as necessary. Students who are not successful with this task should be recommended for the Add+Vantage Math Recovery Number Words and Numerals assessment. For a quick follow up with students who are unsuccessful ask for a count down from 102 - 98.		

Grade 3: Fall

Read Numerals to 1,000 Number Sense: Numeral ID

3. Numeral Identification Cards. **"Read this number for me."** 106 212 577 1,000

If student makes a mistake you may present the card again.

3	2	1
Correct and fluent: Student reads all of the numbers correctly and confidently.	**All correct, but any uncertain:** Student is accurate, but uncertain in the reading of the numbers or needs a second attempt with any of the numbers.	**Any Incorrect:** Student reads any of the numbers incorrectly.
Commentary: A student's ability to accurately and fluently read and talk about numbers is fundamental if they are to engage in mathematical discourse. This skill is often under assessed, in that the ability to read numbers, especially for students who are emerging bilinguals and students who struggle with reading, needs to be assessed and taught in small groups or one-on-one. For students who are being assessed in a language other than the language of instruction, consider also assessing this skill in the language of instruction. The ability to read numbers in one language does not automatically "transfer" to a second language, but often needs to be "translated" in the mind of the person. Developing fluency in the language of instruction supports engagement. For students who score at a level 1 on this task the Add+Vantage Math Number Words & Numerals assessment is recommended.		

Make Four Groups from 12 Counters Number Sense: Multiplication and Division - Represent

4. Put out a collection of 12 counters (all the same color) for the student. **"Here are twelve counters. Use these to make 4 equal groups."** If the student is not successful on the first attempt as the student to show you again.

This question includes some linguistic complexity. In assessing the ability of a student to form equal sized groups, teachers should recognize that this concept itself lies at an intersection of mathematical understanding and language. When a student is unsuccessful on the first attempt, provide additional prompting to help the student understand the task. However as you do, keep in mind that significant prompting is what helps you to identify a level 2 response. For example, **"Did you make 4 groups?" "How many groups did you make?" "Are your groups all the same?"**

3	2	1
Correct on first attempt: Student makes 4 groups initially with 3 in each group without the need for additional prompting.	**Correct on second attempt:** Student did not initially make 4 groups with 3 in each, and needed some additional prompting to be able to understand the task.	**Incorrect:** Student does not create 4 groups with 3 in each group even with additional prompting.
Commentary: The ability to share a set of objects among several groups is a critical foundational skill for understanding and formalizing an understanding of multiplication and division. The ability to understand the language of this is also critical, for understanding instruction (receptively) as well as the ability to engage in mathematical discussions in the class. Much can be learned about student thinking from this task. Many students will make 3 groups with 4 in each group. Ask the student to "count the groups," and they will often recount the number of objects in each group. Ask the student, "How many groups did you make?" and this can lead to some important cognitive dissonance. If the student says three, repose the task to see if they are successful on a second attempt.		

Grade 3: Fall

Task #4 Commentary Continued:
For students who perform at a level 1 it can sometimes be helpful to draw 4 circles and ask them if they can make 4 groups with the same amount in each group. Although the ability to do this with this significant scaffold still remains a score of 1, it can illustrate the starting point for that student in terms of their understanding of creating equal groups.
Students who score at a Level 1 on this task should be further assessed using the Add+Vantage Math Multiplication & Division assessment.

Count by 10s Back from 120

Number Sense: Skip Counting – Place Value – Count by 10s and 100s

5. "Start at 120 and count back by tens." (allow student to count to zero). If student makes slight mistakes on first attempt, say, **"OK. Can I hear that one more time**?"

3	2	1
Correct and fluent: Student accurately counts back by tens from 120 with very few or no pauses" without undue pauses and with reasonable confidence.	**Correct but uncertain:** Student is able to complete the count, but with pauses for thinking and/or self-corrections. Or student is able to correctly complete the count on a second attempt.	**Unsuccessful:** Student does not correctly complete the count.
Commentary: This task is designed to help teachers understand a student's understanding of the relationship between 10s and 100s and to reveal the student's verbal sequence. For students who are unable to complete the count, note the kinds of mistakes that the student makes in order to inform next steps for instruction. This foundational number sense indicator supports an understanding of place value especially as it relates to subtraction. Consider the results of this task in combination with the remainder of the tasks in this section to determine if an AVMR Place Value Assessment would be productive.		

Solve 45 + 19 Mentally

Number Sense: Place Value – Mental Math

6. Place the card 45 + 19 in front of the student. **"Read this card."** Ensure the student reads it correctly and help them if necessary (take note of any difficulties with reading the card.) "**Work out the answer."** If the strategy that the student used was not obvious, or if the student answers incorrectly, ask, **"How did you solve it?"** (Optional: If the student duplicates a written algorithm in their head or by finger writing on the table, ask, **"Do you have another way to work it out?")**

3	2	1
Correct w/o counting by 1s: Student is able to solve the task without needing to count by ones. If a student uses a traditional algorithm, the student does not count by 1s to solve 5 + 9.	**Correct - Counts by ones, or self corrects when explaining strategy:** Student counts by ones. This can either sound like a long count on from 45 (e.g. 45, 46, 47 etc.) or if a traditional algorithm is being used, "9, 10, 11, 12, 13, 14...put the 4 down, carry the one." Or If the student answers incorrectly, but then corrects their answer when explaining a strategy.	**Incorrect:** Student is unable to produce a correct answer of 64.

Grade 3: Fall

Task #6 Commentary:
This task seeks to elicit thinking as it relates to 10s and 1s. Students who have a solid understanding of place value might use a variety of strategies: Add tens, then ones: 40 + 10 is 50, 50 +9 is 59 and 59 + 5 is 64. If a student uses this kind of strategy, score as a 3 even if the student counts by ones to add 59 + 5. The key to notice students manipulating the 10s as units. This is why it is critical to question a student who uses the traditional algorithm with the goal of determining whether a student truly understands place value as it relates to addition.

For students who score at a level 1 on this task, using an Add+Vantage Math Recovery: Place Value assessment is recommended.

Solve 50 – 24 Mentally Number Sense: Place Value – Mental Math

7. Present the card 50 - 24. **"Read this card."** If the student is unable to read the card correctly, take note and support them in reading it. **"How much is 50 - 24?"** If student is unsuccessful, present the set of 50 dots. Present it as a full grid of 50 dots. **"Here are 50 dots. See how there are 5 columns with 10 dots each."** Cover the grid and pull out the section of 24 dots. **"I have taken 24 back out. How many are still under here?"** Leave the 24 dots uncovered on the table.

3	2	1
Correct w/o counting by 1s: Student is able to solve the task on first attempt without the visual scaffold. Although counting back by 1s is less than optimal and should be noted, score a 3 if the student counts back by 1s without the scaffold.	**Correct when presented with the visual scaffold:** When a student correctly solves the problem after presented with the scaffold, score as a 2 regardless of the strategy (take note of how they solved it.)	**Incorrect:** Student is unable to produce a correct answer of 26.
Commentary: This task can be solved in many ways. Subtraction is a difficult topic for many students, especially when regrouping is involved. Often the visual scaffold will prompt thinking that was not available to the student when the task is presented numerically. Ideally, students will use a strategy of counting back by tens, or perhaps they will use 50 - 25 as a known fact to work from. Note the students who are able to have success when the task is supported by the visual model. For students who score at a level 1 on this task, using an Add+Vantage Math Recovery: Place Value assessment is recommended.		

Grade 3: Fall

Compare Lengths (58 and 64) Number Sense: Problem Solving and Posing - Comparisons

8. Show the two number lines from the materials. **"This top line measures 58 units long. The bottom one measures 64 units. Which line is longer?** Allow student to answer and confirm that the bottom line is longer. "**How much longer is the bottom line than the top?"**

3	2	1
Correct: Student recognizes the difference is 6. Student can use a variety of methods. Count by 1s is ok.	**Student attempts to find the difference, but doesn't attend to the numbers:** Some students will attempt to count intervals between the two bars, without attending to the units. That is, they recognize where the difference would be found, but don't attend to the numbers. Or Student attempts to use the numbers to find the difference, but calculates incorrectly.	**Student does not see the difference as the space between:** This can look a lot of ways, but what is critical is that the student at a level 1 are not yet seeing that the difference is a mathematical relationship between the two lengths.
Commentary: Understanding "difference" as it relates to subtraction represents a developmental milestone for students. Seeing the space between can be challenging for many students. For students who are still developing this understanding, it is important to consider the appropriate scaffolds and supports necessary when difference problems are presented in the instructional program.		

Partitions of 13 Number Sense: Structures, Flexibility and Fluency

9. **"Tell me two numbers that go together to make 13."** (rephrase as necessary to ensure that the student understands that you are asking for two numbers, that when added together make 13.) If your instructional program uses a specific term (e.g. a number bond) for these basic combinations, consider using that in your prompt.

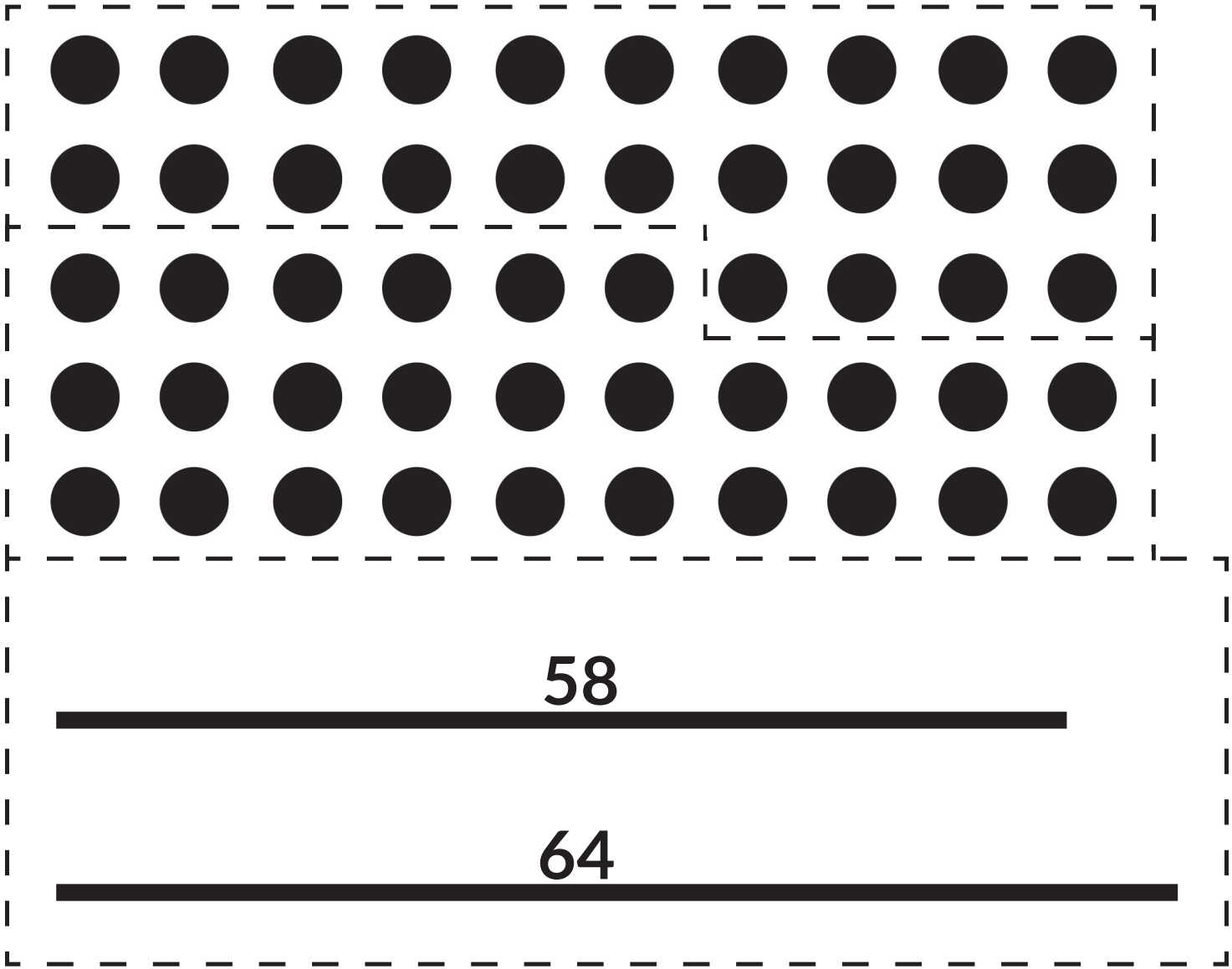
10. "**Tell me another two numbers that go together to make 13."**

Score 9 and 10 separately using this guide:

3	2	1
Correct/fluent: The student demonstrates ready access to combinations of numbers that add to 13.	**Correct/works out:** Student is able to find numbers that combine to make 13, but is able to with some think time or by using fingers or a counting method.	**Incorrect:** Student does not accurately identify numbers that add to 13
Commentary: Fluency with addition and subtraction through 20 is an expectation for the end of 2nd grade. However, "fluency" is a process that goes on for many years. Students who are more successful with fluency tasks show more success overall in mathematics, and tend to enjoy it more since basic computations become less of a burden. As students grow in their familiarity with basic facts, the energy necessary for using them decreases, allowing students to focus on other, more complex ideas of third grade math. As the 3rd grade curriculum turns to focus on multiplication and division, look for opportunities to continue working on fluency with addition and subtraction. For students who are not fully successful on these tasks use the Add+Vantage Math Recovery (AVMR) Structuring Number assessment.		

577	496
1,000	303
45 + 19	106
50 - 24	212

Grade 3: Fall Screener Cards



Grade 4

Fall Universal Screener for Number Sense

Instructions and Guidance:

Who? Whenever possible, the teacher who works most directly with the child should be the one to administer the interview portion of the screener and score the written portion

Read the entire assessment through in preparation and run through the tasks.

Prepare the materials including a number line for each student for question #9. Only provide materials as described in the script.

Do not provide the student with paper and pencil, except for marking on the number line for problem #9.

Set up in a place with as few distractions as possible.

Keep a good pace. Most assessments will take 4 – 6 minutes.

Limit Questioning: It is usually best to attempt to limit questioning and move at a steady pace through the tasks. This improves the efficiency, but also helps to ensure the consistency of administration, and therefore the reliability of the results.

Be flexible: You might find that you can work most efficiently by administering one task at a time, moving from student to student rather than having them come to a station. This can be done with the counting tasks and numeral ID task. Users of Forefront will find that the interview tool can be switched to focus on tasks. Here is a help article for using the interview tool.

Collaborate: Sometimes groups of students can be reorganized in creative ways to provide one teacher with the ability to sit with individual students.

Watch carefully and take notes: The nuances in behaviors that reveal a child's number sense development are sometimes hard to see and hear.

Smile and do your best to make the situation as stress free as possible. If the child seems particularly timid or nervous, consider trying at another time.

Video tape: Although it is not necessary for the administration of the assessment, recording an assessment or two to discuss with colleagues can be an excellent way to learn together, build consistency in administration and scoring, and communicate with parents.

Grade 4: Fall

Number Sense Screener

Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language of Assessment: □ English □ Spanish □ Other: _____

AVMR Assessment(s) Suggested? □ No □ Yes (see below)

Number Words and Numerals	*score*
scoring: correct & fluent: 3 pts., correct but uncertain: 2 pts., unsuccessful: 1 pt.	
1. Count from 995. (stop at 1000) *Notes:*	
2. Count back from 602. (stop at 597) *Notes:*	
3. Numeral Identification: 628 ____ 402 ____ 555 ____ 1,000 ____ $\frac{1}{3}$ ____ ☐ *correct and fluent: 3 pts* ☐ *correct but uncertain: 2 pts* ☐ *any unsuccessful: 1 pt* *Notes:*	
AVMR Number Words and Numerals Assessment recommended? _____	
Multiplication and Division	*score*
4. 6 cards with 3 dots each ☐ *correct: multiplies or cnts by 3s: 3 pts* ☐ *correct on 2nd try, or cnts by 1s: 2 pts* ☐ *incorrect: 1 pt* *Notes:*	
5. Equation to match cards ☐ *multiplication equation 3 pts* ☐ *addition equation: 2 pts* ☐ *unsuccessful: 1 pt* *Notes:*	
AVMR Multiplication and Division Assessment recommended? _____	
Place Value	*score*
6. 82 pencils into boxes of 10 ☐ *correct: 3 pts* ☐ *self-corrects when explaining: 2 pts* ☐ *incorrect: 1 pt* *Notes:*	
7. 596 + 10 ☐ *correct: not cnt by 1s: 3 pts* ☐ *self-corrects on explaining or cnts by 1s: 2 pts* ☐ *incorrect: 1 pt* *Notes:*	
8. 400 – 198 (follow with 400 – 102 if necessary) ☐ *solves 400-198* ☐ *solves 400-102: 2 pts* ☐ *incorrect: 1 pt* *Notes:*	
AVMR Place Value Assessment recommended? _____	
Fractions	*score*
9. Mark 1/3 and 2/3 on the number line. ☐ *both accurate: 3 pts* ☐ *both between 0-1: 2 pts* ☐ *out of order or not between 0 and: 1 pt* *Notes:*	
AVMR Fractions Assessment recommended? _____	

Grade 4: Fall

Number Sense Screener

Script, *print 1 copy/test administrator*

:Numerals, Words & Sequences

1. **"Start counting from 995 and I will tell you when to stop."** (Stop at 1000)
2. **"Count backward from 602. I'll tell you when to stop."** (Stop at 597)
3. Numeral Identification Cards: 628, 402, 555, 1,000, $\frac{1}{3}$
   Lay the cards out one at a time and ask, **"What number is this?"**

Multiplication and Division

4. Place out 6 cards with dots face down without allowing the student to see the dots.
   "I have 6 cards. Each card has three dots on it. How many dots are there all together?"
5. **"Write an equation to go with the dots on the cards."** (Give pencil and have them write the equation on the back of the note catcher.) If student writes an addition sentence, ask them to write a multiplication sentence. If student is incorrect in #4, but uses the same numbers in equation, count this item as correct.

Place Value

6. Show the student the picture of the pencil boxes**. "I have 82 pencils that need to be packed into boxes with ten pencils in each box. How many boxes can I fill with 10 pencils each?"**
7. Show the card 596 +10. **"Read this card."** (Ensure that the student reads the card correctly. Correct them if necessary.) **"Work out the problem."**
   "How did you solve it?" If the student duplicates the standard written algorithm, ask if they have another way of solving it.
8. Place the card 400-198 in front of the student. **"Read this card."** Ensure that the student reads the card correctly. Correct them if necessary. **"Work out the problem."** If it is not obvious, ask **"How did you solve it?"** regardless of whether they have given the correct answer (202) or not. If the student is unable to solve 400 - 198, remove the 400 - 198 present the second card for this task: **400 - 102. "Read this card."** (Ensure that the student reads the card correctly. Correct them if necessary.)

Fractional Thinking

Give the student a copy of the number line. "**This line shows a racecourse. The runner starts here at zero and runs to the end, where it says 2. Two stands for 2 miles. They want to put a water station after the first one third mile.** Put the card that says $\frac{1}{3}$ on the table. **Where should they put the water station?" "Use your pencil to put a mark one third mile from the start and label it with the fraction."**

Lay the card that says $\frac{2}{3}$ on the table. **"They want to put another water station after two thirds mile. Where should they put the second water station? Put a mark $\frac{2}{3}$ mile from the start and label it $\frac{2}{3}$."**

Grade 4: Fall

Number Sense Screener

Spanish Script, *print 1 copy/test administrator*

Numerals, Words & Sequences

1. **"Comienza a contar desde el 995 y yo te diré cuándo parar."** (Stop at 1000)
2. **"Cuenta hacia atrás desde el 602 y yo te diré cuándo parar."** (Stop at 597)
3. Numeral Identification Cards: 628, 402, 555,1,000, $\frac{1}{3}$

   Lay the cards out one at a time and ask, **"¿Cuál número es éste?"**

Multiplication and Division

4. Place out 6 cards with dots face down without allowing the student to see the dots.

   "Tengo 6 tarjetas. Cada tarjeta tiene tres puntos. ¿Cuántos puntos hay en total?"
5. **"Escribe una oración numérica (ecuación) que vaya con los puntos en las tarjetas."** (Give pencil and have them write the equation on the back of the note catcher) If student writes an addition sentence, ask them to write a multiplication sentence. If student is incorrect in #4, but uses the same numbers in equation, count this item as correct.

Place Value

6. Show the student the picture of the pencil boxes**. "Tengo 82 lápices que deben ser empaquetados en cajas con diez lápices en cada caja. ¿Cuántas cajas puedo llenar con 10 lápices en cada una?"**
7. Show the card 596 +10. **"Lee esta tarjeta."** (Ensure that the student reads the card correctly. Correct them if necessary.) **"Resuelve el problema."**
"¿Cómo lo resolviste?" If the student duplicates the standard written algorithm, ask if they have another way of solving it.
8. Place the card 400-198 in front of the student. **"Lee esta tarjeta."** Ensure that the student reads the card correctly. Correct them if necessary. **"Resuelve el problema."** If it is not obvious, ask **"¿Cómo lo resolviste?"** regardless of whether they have given the correct answer (202) or not. If the student is unable to solve 400 - 198, remove the 400 - 198 present the second card for this task: **400 - 102. "Lee esta tarjeta."** (Ensure that the student reads the card correctly. Correct them if necessary.)

Fractional Thinking

9. Give the student a copy of the number line. **"Esta línea muestra una carrera. El corredor empieza aquí en cero y corre hasta el final, donde dice 2. Ese dos significa dos millas. Quieren poner un puesto de aqua después de un tercio de una milla.** Put the card that says $\frac{1}{3}$ on the table. "**¿Donde deben de poner el puesto de agua? Pon una marca en donde va $\frac{1}{3}$ de milla y escribe $\frac{1}{3}$."**

   Lay the card that says $\frac{2}{3}$ on the table. **"Quieren poner otro puesto de agua a dos tercios de una milla. ¿Dónde deben de poner la segunda puesto de agua? Pon una marca en la milla $\frac{2}{3}$ desde el inicio y escribe la fracción**."

Grade 4: Fall

Administration Guide

Scoring Guide, *print 1 copy/test administrator*

1. Count from 995 – 1000 Number Sense: Forward Number Word Sequences

"Start counting from 995 and I will tell you when to stop." Lay the card that says 995 on the table. Stop at 1000. If the student finishes the count saying either one thousand or million have the student write the number on the back of the notetaker. If student does not count to a thousand or "million" score as unsuccessful.

3	2	1
Correct and fluent: Student demonstrates an ability to count to 1,000 and writes the number correctly.	**Correct, but uncertain:** Student is not fluent in their count to one thousand, but writes 1,000 correctly. Or Student is fluent in their count, but is unable to write 1,000 correctly. Or Student says "million' instead of "thousand," but writes the number correctly.	**Unsuccessful:** Student is unable to count from 995 to 1,000. Or Student ends count saying "million" and is unable to accurately write 1,000
Commentary: This task is a progression of counting tasks that start in kindergarten. For students who are unsuccessful, as time allows, consider a lower count to determine at what level the student is competent in their counting abilities. For students who say "a million" at the end of this count, this may be more of a language issue than an understanding of the number system, thus the writing of the number has been added to this task to help understand the student's thinking. This confusion is not uncommon for bilingual students who speak Spanish or French whose words for one thousand are *mil* and *mille*.. Historically, the Forefront Global Cohort, has shown that nearly 35% of incoming 4th grade students score at a level 1 on this task. Teachers should be prepared with ideas for providing targeted instruction for those students who are still developing this fundamental skillset. For students who are not successful on this task the Add+Vantage Math Recovery (AVMR) Number Words and Numerals assessment is recommended.		

2. Count Back from 602 – 597 Number Sense: Backward Number Word Sequence

"Count backward from six hundred two and I will tell you when to stop." Lay the card that says 602 on the table. (Stop at 597.)

3	2	1
Correct and fluent: Student demonstrates an ability to accurately make this count with reasonable confidence	**Correct but uncertain:** Student is able to accurately complete the count, but with longer pauses, self-corrections, or multiple attempts.	**Unsuccessful:** Student is unable to accurately complete the count.
Commentary: This continues counting back tasks from previous years' Screeners. This task is as much a place value task as it is a test of the understanding of the number word sequence. It is not unusual to find 4th grade students who are unsuccessful with this task. Historically, in the Forefront Global Cohort, nearly 25% of incoming 4th grade students scored at a level 1 on this task. Teachers should be prepared with ideas for providing targeted instruction for those students who are still developing this fundamental skillset. For students who are not successful on this task the Add+Vantage Math Recovery (AVMR) Number Words and Numerals assessment is recommended.		

Grade 4: Fall

3. Numeral ID to 1000 and Unit Fractions Number Sense: Numeral ID

Numeral Identification: 628 402 555 1,000 $\frac{1}{3}$

Lay the cards out one at a time and ask, **"What number is this?"**

3	2	1
Correct and Fluent: Student shows an ability to read these numbers without difficulty.	**Correct but uncertain:** Student shows some uncertainty with reading these numbers.	**Unsuccessful:** Student is unable to read any of the numbers.
Commentary: The ability to read numbers is a question of access to instruction, and necessary for engaging in mathematical discourse. Students who score either 2 or 1 on this task due to issues with reading the whole numbers should be recommended for the Add+Vantage Math Recovery Number Words and Numerals assessment.		

4. Six Cards With Three Dots Number Sense: Multiplication and Division:;Fluency and Flexibility

Place the 6 cards with the dots face down, without allowing the student to see the dots. Say, **"I have 6 cards. Each has 3 dots on it. How many dots are there altogether?"**
If student is unsuccessful, show the 3 dots from one of the cards quickly to the student. **"See, each card has 3 dots. Each card is the same. How many dots are there altogether?"**
If the student attempts to use a memorized fact, but gives a wrong answer, (e.g. Student says, "It's 16. Because 3 times 6 is 16.") Say, **"How can you show me that is true?"**

3	2	1
Correct, multiplies or counts by 3s: Student solves correctly on first attempt and does not count by 1s.	**Correct on 2nd attempt or counts by 1s:** This includes students who attempt to solve with a memorized fact, but are incorrect in their answer, but correct themselves when asked to solve it another way.	**Unsuccessful:** Student loses count, or whatever, but does not give the answer 18.
Commentary: This task is intended to assess the students' ability to repeat equal groups of numbers. (units of 3 in this case). This is fundamental for multiplicative thinking. Students who score at a level 1 or 2 on this task should be considered for an Add+Vantage Math Recovery Multiplication & Division assessment.		

Grade 4: Fall

5. Equation for Dot Cards Number Sense: Multiplication and Division: Model with Equations

Do not remove the cards from the previous task. Do not tell the student the correct answer to the previous question. Say, **"Write an equation to go with the dots on the cards."** (Give the student a pencil and have them write the equation on the back of the note catcher.)

Occasionally, students will need some additional prompting to understand the task. If so, say "Write an equals sign. You said the answer was ___, so =___ is the start. How would you finish it?"

If the student writes an addition equation (e.g. 3+3+3+3+3+3=18) say, **"Good, can you also write a multiplication equation that matches?"**

3	2	1
Multiplication equation: Student writes a multiplication equation that matches the situation. * If the student had the fact incorrect in question 4 but their equation here matches that, score as a level 3.	**Correct repeated addition equation:** Student makes repeated addition equation that matches the cards. This could be 3+3+3+3+3+3, but also accept 6+6+6 (or less commonly 9 + 9), if they can show you where the 6s (or 9s) are. and Student is unable to write matching multiplication equation For other addition equations that do not show repeated addition (e.g. 12 + 9) score as a 1.	**Incorrect:** Student is unable to create either a multiplication or repeated addition problem that matches the situation presented on the cards.
Commentary: An understanding of how multiplication is used to represent multiplicative situations is foundational for working with multiplication and division in 4th grade. Helping students who are still thinking additively, or who are unable to use an equation to mathematically model the situation (see SMP4) need experiences to help them associate repeated groups with the idea and symbolic representation of multiplication.		

6. How Many Tens in 82 Number Sense: Place Value – Ones, Tens, and Hundreds

Show the student the picture of the pencil boxes. **"I have 82 pencils that need to be packed into boxes with ten pencils in each box. How many boxes can I fill with 10 pencils each?"** If the student does not answer correctly, ask them to explain their thinking.

3	2	1
Correct: Student answers 8 (some might account for the remainders. Take note, but this does not impact the scoring.) If student answers 9 boxes ask them to explain to check to see if one box will be less than full.	**Self-corrects when explaining:** Student confused on the first attempt then self-corrects when thinking it through aloud.	**Incorrect:** Student is unable to see that 8 boxes are necessary.
Commentary: This contextualized problem, which is a place value problem in its essence helps to reveal readiness for 4th grade work with division. This question was modified in this version from a problem presented this problem with 132 pencils. Historically fewer than 50% of students were able to solve that problem correctly. For the teacher, it might be helpful to ask the problem using 132 pencils as a follow up to the question with the 82 pencils. For students who are unsuccessful with this task an Add+Vantage Math Recovery (AVMR) Place Value assessment would be recommended.		

Grade 4: Fall

7. 596 + 10 Number Sense: Place Value – Mental Math

Show the card 596 +10. **"Read this card."** (Ensure that the student reads the card correctly. Help them if necessary.) "**Work out the problem."** If it is not obvious, ask, **"How did you solve it?"** If student uses a traditional algorithm, ask if they have another way to solve the problem and/or ask them to explain their thinking to determine if they are simply following the procedure, or if they understand the place value.

3	2	1
Correct without counting by 1s: The student is able to explain how to solve this problem without resorting to counting by ones. If the student has used a traditional algorithm, only score as a 3 if they can explain why that method works using an explanation that uses the words: ten(s) and hundred(s).	**Correct, counts by ones or uses a traditional algorithm w/o being about to clearly explain the place value:** Student solves by counting on by 1s, or the student applies the traditional algorithm, but is unable to provide an explanation that talks about 10s and 100s. Or Student corrects their answer when explaining, or on 2nd attempt.	**Incorrect:** Student does not answer 606.
Commentary: It is an expectation of 2nd and 3rd grade that students will develop a conceptual understanding of place value that will be applied in 4th grade to develop fluency with multi-digit addition and subtraction. This task is designed to elicit thinking related to place value as it relates to tens and hundreds. For students who have already learned to apply a standard algorithm, it is important that they have a conceptual understanding of place value before moving to the formalization of the procedure that will happen in 4th grade.		

8. 400 – 198 Number Sense: Place Value – Mental Math

Place the card 400-198 in front of the student. **"Read this card."** Ensure that the student reads the card correctly. Correct them if necessary. **"Work out the problem."** If it is not obvious, ask **"How did you solve it?"** regardless of whether they have given the correct answer (202) or not.

If the student is unable to solve 400 - 198, remove the 400 - 198 present the second card for this task: **400 - 102. "Read this card."** (Ensure that the student reads the card correctly. Correct them if necessary.)

3	2	1
Student solves 400-198 either on 1st attempt or when explaining their thinking: The student is able to determine that the correct answer is 202.	**Student solves 400-102:** Although the student was unable to solve the task 400 - 198, when presented with the second task they accurately answer 298.	**Student is unable to solve either task.**
Commentary: This task has been modified from the prior version to include a second problem that is slightly easier in order to get a fuller understanding of the students' thinking. Consider, if time allows, asking students who score at a level 1 to solve the problem 102 - 3 to determine the student's level of understanding at this point in time. The ability to apply place value understanding to be able to subtract is critical for students. This fundamental skill/concept is critical for division, and for students who are struggling with subtraction at the beginning of 4th grade place value should quickly become a focus of targeted supports and progress should be monitored. For students who score a 1 on this task, an AVMR Place Value assessment would be advisable.		

Grade 4: Fall

9. Thirds on A Race Course Number Sense: Place Value – Fractions on Number Lines

Give the student a copy of the number line. "**This line shows a racecourse. The runner starts here at zero and runs to the end, where it says 2. Two stands for 2 miles. They want to put a water station after the first one third mile.** Put the card that says $\frac{1}{3}$ on the table. **Where should they put the water station?" "Use your pencil to put a mark one third mile from the start and label it with the fraction."**

Lay the card that says $\frac{2}{3}$ on the table. **"They want to put another water station after two thirds mile. Where should they put the second water station? Put a mark $\frac{2}{3}$ mile from the start and label it $\frac{2}{3}$."**

3	2	1
Accurately places both: Student pays attention to dividing space between 0 and 1 into thirds to place the fractions.	**Places both between 0 and 1:** Student places both fractions between 0 and 1, but does not attend to equal thirds. 2/3 is placed to the right of 1/3.	**Not between 0 and 1 or out of order:** Student doesn't place the fractions between 0 and 1.
Commentary: The previous version of this assessment did not have the context, and fewer than 20% of students in the Forefront Global Cohort scored at a level 3 on this task. With the context we anticipated that more students will be able to demonstrate a better understanding of fractions, in order to better identify productive supports and starting points for instruction. After the revisions, the percentage of students scoring at a level 3 did in fact improve and slightly over 30% scored in this range. Nevertheless, the ability to place fractions on number lines that extend beyond 1 is a critical task and students are expected to do so without a context by the end of 3rd grade. Students in 3rd and 4th grades should have multiple opportunities to work with fractions on number lines to prepare them for more complex fraction concepts and rational number topics in 5th grade and beyond.		

995

602

628

402

555

1,000

596 + 10

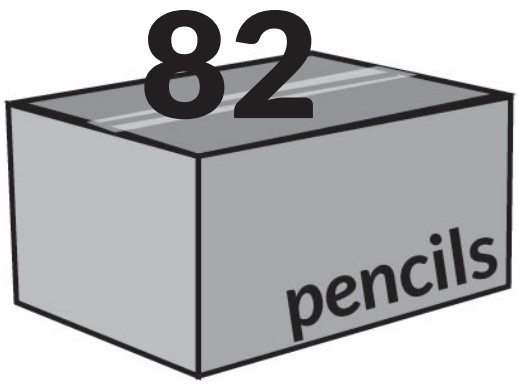
400 - 198

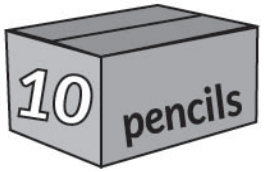
400 - 102

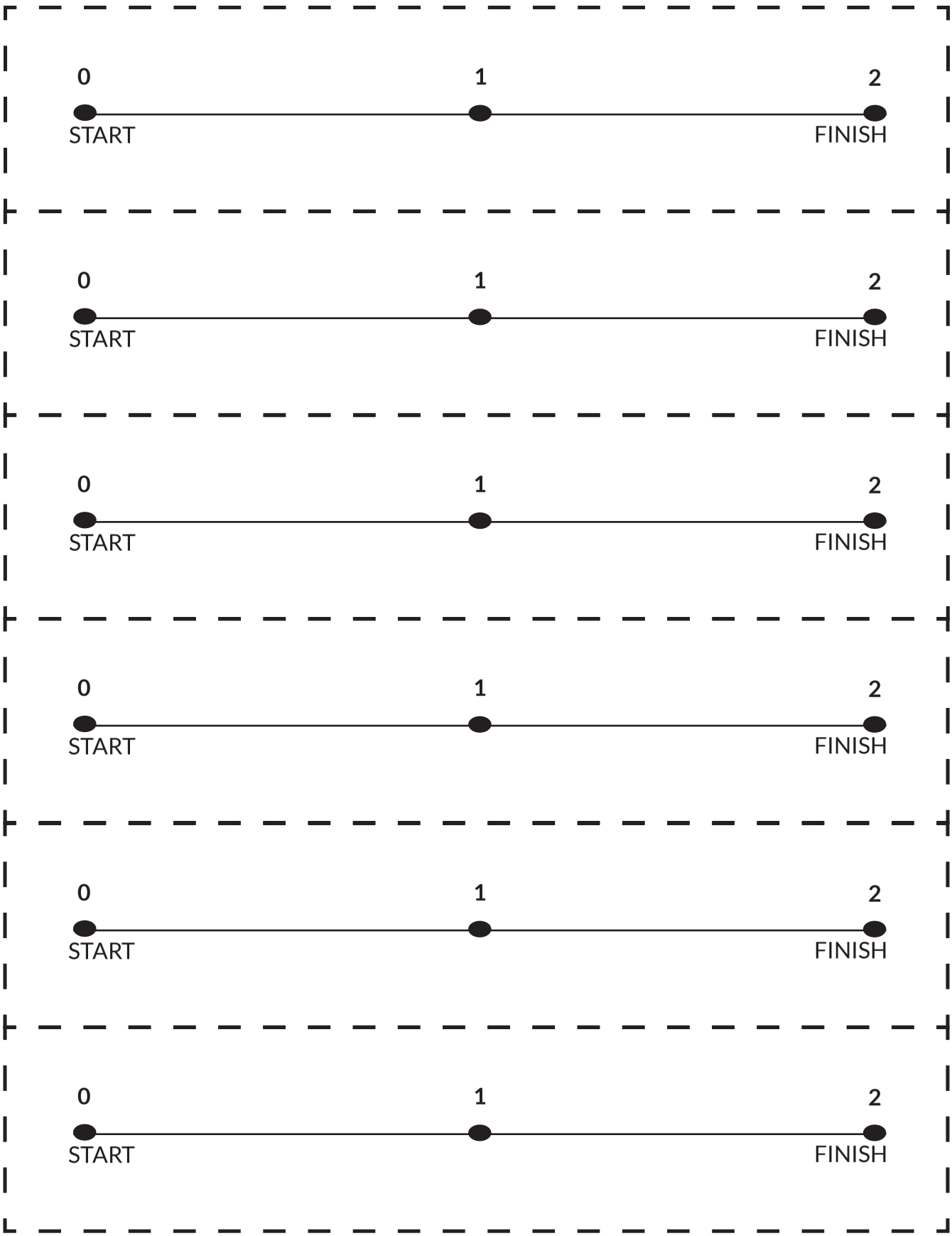
$\frac{1}{3}$

Use above for numeral identification and fractions sections.

$3\frac{2}{}$







Grade 5

Fall Universal Screener for Number Sense

Instructions and Guidance:

Who? Whenever possible, the teacher who works most directly with the child should be the one to administer the interview portion of the screener and score the written portion

Read the entire assessment through in preparation and run through the tasks.

Prepare the materials. Only provide materials as described in the script.

Do not provide the student with paper and pencil.

Set up in a place with as few distractions as possible.

Keep a good pace. Most assessments will take 5 – 7 minutes.

Limit Questioning: It is usually best to attempt to limit questioning and move at a steady pace through the tasks. This improves the efficiency, but also helps to ensure the consistency of administration, and therefore the reliability of the results.

Be flexible: You might find that you can work most efficiently by administering one task at a time, moving from student to student rather than having them come to a station. This can be done with the counting tasks and numeral ID task. Users of Forefront will find that the interview tool can be switched to focus on tasks. Here is a help article for using the interview tool.

Collaborate: Sometimes groups of students can be reorganized in creative ways to provide one teacher with the ability to sit with individual students.

Watch carefully and take notes: The nuances in behaviors that reveal a child's number sense development are sometimes hard to see and hear.

Smile and do your best to make the situation as stress free as possible. If the child seems particularly timid or nervous, consider trying at another time.

Video tape: Although it is not necessary for the administration of the assessment, recording an assessment or two to discuss with colleagues can be an excellent way to learn together, build consistency in administration and scoring, and communicate with parents.

Grade 5: Fall

Number Sense Screener

Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language of Assessment: □ English □ Spanish □ Other: _____

AVMR Assessment(s) Suggested? □ No □ Yes (see below)

Number Words and Numerals	*score*
1. **"Count back from 1002." (stop at 998)** ☐ *correct and fluent: 3 pts* ☐ *correct but not fluent: 2 pts* ☐ *unsuccessful: 1 pt* *Notes:*	
2. **Numeral Identification Cards** Indicate if response is immediate (√), delayed (d), or incorrect (x) **90,540** _____ $\frac{3}{5}$ _____ 40,008 _____ $1\frac{1}{2}$_____ ☐ *all correct/fluent: 3 pts* ☐ *all correct, but not confident: 2 pts* ☐ *any incorrect: 1 pt* *Notes:*	
AVMR Number Words and Numerals Assessment recommended? _____	
Multiplication and Division	*score*
3. **6 x 4 with array** ☐ *correct and automatic: 3 pts* ☐ *correct /works out: 2 pts* ☐ *incorrect: 1 pt* *Notes:*	
4. **32 ÷ 4 with array** ☐ *correct and automatic: 3 pts* ☐ *correct /works out: 2 pts* ☐ *incorrect: 1 pt* *Notes:*	
5. **30 x 4** ☐ *correct: 3 pts* ☐ *incorrect, but good strategy: 2 pts* ☐ *incorrect no viable strategy:1 pt* *Notes:*	
6. **29 x 4** ☐ *subtracts 4 from 120: 3 pts* ☐ *correct/solves separately: 2pts* ☐ *incorrect: 1 pt* *Notes:*	
AVMR Multiplication and Division Assessment recommended? _____	
Place Value	*score*
7. **Groups of 10 in 214** ☐ *correct 1st attempt: 3 pts* ☐ *self-corrects when explaining: 2 pts* ☐ *incorrect: 1 pt* *Notes:*	
8. **$20.00 - $12.25** ☐ *correct: 3 pts* ☐ *self-corrects when explaining thinking: 2 pts* ☐ *incorrect: 1 pt* *Notes:*	
AVMR Place Value Assessment recommended? _____	
9. **Label number line (give one point for each of the below)** ☐ 1.5 is between 1 – 2 ☐ $1\frac{3}{4}$ is placed right of midway between 1 – 2 ☐ $\frac{2}{3}$ is between 0 – 1. ☐ *all correct: 3 pts* ☐ *2 correct: 2pts* ☐ *1 or none correct: 1 pt* *Notes:*	

Grade 5: Fall

Number Sense Screener

Script, *print 1 copy for test administrator*

Numerals, Words and Sequences

1. **"Start counting back from 1,002 and I'll tell you when to stop."** (stop at 997)
2. Numeral Identification Cards:
   90,540 _____ $\frac{3}{5}$ _____ 40,008 _____ $1\frac{1}{2}$_____
   Lay the cards out one at a time and ask, **"What number is this?"**

Multiplication and Division

3. Put the card that says 6 x 4 in front of the student. **"What does this say?"** Show the two dot cards. (the 6x4 array, and the card with a set of six and a set of 4) **"Which of these matches six times four?"** Regardless of which card the student chooses, point to the 6 by 4 array. **"This one matches six times four because there are 6 rows with 4 in each row."**
   "How much is 6 x 4?"
4. Give the student the card that says 32÷4. **"Read this card."** Ensure the student reads the card correctly. Help them if necessary and make a note. **"How much is 32÷4?"**
   - ➔ If the student answers correctly, lay the array on the table for the student and say, **"Show me how you can use this to find that answer."**
   - ➔ If the student is unable to answer after a brief wait, give them the array and ask, **"Can you use this to help you? There are 32 dots on this card."**
5. Show card: 30 x 4. **"What is 30 times 4?"**
   "How did you work it out?"
6. Do not remove the card that says 30 x 4. Confirm or, if necessary, clarify for student that 30 x 4 is 120. Show card: 29 x 4.
   "Use your answer to 30 x 4 to you figure out 29 x 4?"

Place Value

7. Show the student the picture of the pencil boxes. **"I have 214 pencils that need to be packed into boxes with ten pencils in each box. How many boxes can I fill with 10 pencils each?"** If the student does not answer correctly, ask them to explain their thinking.
8. Place out the money card, **"If you spent $12.25 and paid with $20.00 how much money would you get back?"**
   "How did you work that out?" Allow student to correct answer when explaining their thinking.

Fractional Thinking

9. Give student paper number line. **"Put marks on the number line where these numbers go. Label the dots."**

Grade 5: Fall

Number Sense Screener

Spanish Script, *print 1 copy/test administrator*

Numerals , Words, and Sequences

1. **"Empieza a contar para atrás desde 1,002 y yo te digo cuando parar."** (stop at 997)
2. Numeral Identification Cards: **90,540____ 3/5____ 40,008_____ 1 ½ _____**
   Lay the cards out one at a time and ask, **"¿Cuál número es éste?"**

Multiplication and Division

3. Put the card that says 6 x 4 in front of the student. **"What does this say?"** Show the two dot cards. (the 6x4 array, and the card with a set of six and a set of 4) Show the two dot cards. ¨**¿Cuál de estas tarjetas muestra seis por cuatro?** Regardless of which card the student chooses, point to the 6 by 4 array. **Esta muestra 6 por 4 porque hay 6 hileras con cuadro en cada hilera." ¿Cuánto es 6 x4?**
4. Give the student the card that says 32÷4. **"Lee esta tarjeta."** Ensure the student reads the card correctly. Help them if necessary and make a note. **"¿Cuánto es 32÷4?"**
   - ➔ If the student answers correctly, lay the array on the table for the student and say, **"Muéstrame como puedes usar esto para encontrar la respuesta."**
   - ➔ If the student is unable to answer after a brief wait, give them the array and ask, **"¿Puedes usar esto para ayudarte? Hay 32 puntos en esta tarjeta."**
5. Show card: 30 x 4. **"¿Cuánto es 30 x 4?"**
   "¿Cómo lo resolviste?"
6. Do not remove the card that says 30 x 4. Confirm or, if necessary, clarify for student that 30 x 4 is 120. Show card: 29 x 4.
   "Usa la respuesta de 30 x 4 para ayudarte a resolver 29 x 4."

Place Value

7. Show the student the picture of the pencil boxes. **"Tengo 214 lápices que necesitan empacarse en cajas de 10 lápices en cada caja. "¿Cuántas cajas puedo llenar con 10 lápices en cada una?"**
8. Place out the money card, **"¿Si gastas $12.25, y pagas con un billete de $20.00, cuánto de cambio recibirías?**
   ¿Cómo lo resolviste?" Allow student to correct answer when explaining their thinking.

Fractional Thinking

9. Give student paper number line. **"Pónga puntos en la línea numérica donde van estos números. Ponga el número sobre los puntos."**

Grade 5: Fall

Administration Guide

Scoring Guide, *print 1 copy/test administrator*

Count Back From 1,002 – 998 Number Sense: Backward Number Word Sequence

Number Sense: Backward Number Word Sequence

1. **"Start counting back from one thousand two and I will tell you when to stop."** Lay card that says 1,002 on the table. (stop at 998) If student is incorrect, ask them to do it again.

3	2	1
Correct and confident: Student is able to complete the task with reasonable fluency. Allow for think time as necessary for students to complete the count.	**Correct but with errors:** Student completes the count, but makes self-corrections. Or Student is correct on 2nd attempt.	**Unsuccessful:** Student is unable to demonstrate the ability to accurately count back from 1002 - 998.
Commentary: This task is not about having memorized this sequence. It is about the ability to utilize the ideas of place value; to reveal that a student is making *sense* of our number system. Students in 5th grade should, according to most states' standards, be able to count forward and back from any number under 1,000,000. Theoretically, that is. We know in actuality that many of our students cannot. Activities that support all students in developing the ability to count forward and back with both large and small numbers can be beneficial for the whole class.		

Numeral ID: Large Numbers and Fractions Number Sense: Numeral ID

2. Lay the cards out one at a time and ask, **"What number is this?"**

90,540 $\frac{3}{5}$ 40,008 $1\frac{1}{2}$

3	2	1
All correct/fluent: Student reads the numbers with some confidence, and the assessor is left feeling comfortable that this student can accurately read numbers up to 100,000.	**All correct/not confident:** Student reads the numbers correctly, but the assessor feels that more instruction, practice, feedback and/or assessment would be good due to pauses or self-corrections.	**Unsuccessful:** Student is unable to read any one of the numbers.
Commentary: The ability to read numbers is about accessing instructional materials, understanding instruction, and engaging in mathematical discourse. Students who cannot read these numbers should be provided with the coaching and practice opportunities necessary to be able to read all numbers that will be worked with in 5th grade. Listen carefully for students who read one and one half as "one half." This is a common mistake and can sometimes indicate a critical confusion about the number.		

Grade 5: Fall

Six by Four Multiplication

Number Sense: Multiplication and Division – Fluency and Flexibility

3. Put the card that says 6 x 4 in front of the student. **"What does this say?"** Show the two dot cards. (the 6x4 array, and the card with a set of six and a set of 4) Show the two dot cards. **"Which of these matches six times four?"** Regardless of which cards the student chooses, point to the 6 by 4 array. **"This one matches six times four because there are 6 rows with 4 in each row." "How much is six times four?"**

3	2	1
Correct and Composite: Student chooses correct dot card and answers 6 x 4 without signs of counting by 6s, 4s, or 1s. For example, uses a memorized fact, or uses known facts (e.g. 5 x 4 = 20 and 1 x 4 = 4, so 6 x 4 = 24; or doubles the product of 6 x 2)	Student chooses correct dot card and counts by 6s or by 4s to solve or does a combination of skip counting and count by ones	Student does not choose card that matches 6 x 4 and/or counts by 1s to solve (most likely using the card as a support). Even if the student has memorized 6 x 4 and answers that correctly, if they do not choose the correct dot card, score as a 1.
Commentary: Understanding multiplication and being able to find products with little effort supports the further development of multiplicative thinking throughout mathematics. Students who do not demonstrate conceptual understanding as it relates to multiplication, and those who are not operating on composite units to find products, but instead count by 1s, will need supports in accessing 5th grade curriculum. For students who score a 1 on this task, using an Add+Vantage Math Recovery (AVMR) Multiplication & Division assessment is recommended.		

Divide 32÷4 Number Sense: Multiplication and Division – Flexibility and Fluency

4. Give the student the card that says 32÷4. **"Read this card."** Ensure the student reads the card correctly. Help them if necessary and make a note. **"How much is 32 ÷ 4?"**
If the student answers correctly, lay the array on the table for the student and say, **"Show me how you can use this to find that answer."**
If the student is unable to answer after a brief wait, give them the array and ask, **"Can you use this to help you? There are 32 dots on this card."**

3	2	1
Student demonstrates reasonable fluency and conceptual understanding: Student answers correctly, either counting by 4s, deriving fact, or knowing the fact, and student demonstrates an understanding of the relationship. The student may say there are 8 rows or columns, or they may count the 8 across a row. Accept answers that show that the student recognizes that there are either 4 sets of 8, or 8 sets of 4.	**Student shows fluency without conceptual understanding or understanding without fluency.** Student either knows the answer, but does not demonstrate an understanding of how the problem relates to the card or student needs the card in order to answer correctly.	**Incorrect:** Student does not answer 8

Grade 5: Fall

Question #4 Commentary: Fluency with division is important for 5th grade, however students may use a variety of strategies for solving basic division problems. Perhaps more important is an understanding of division as it relates to sets of objects. This task has been revised to help assessors better understand how students understand division.

30x4 Number Sense: Multiplication and Division – Mental Math

5. Show card 30 x 4. Ask, **"What is thirty times four?"** If strategy is not obvious you might want to ask what strategy they used.

3	2	1
Correct: Answers that 30 x 4 =120.	**Incorrect but viable strategy:** Attempts a viable strategy (e.g. counting by 4s.) But makes a calculation error.	**Incorrect no viable strategy:** Student's strategy would not result in a correct answer (e.g. answers 34)
Commentary: Fluency with these kinds of problems supports access to curriculum, instruction, and student to student discourse. Students who need to develop fluency should be provided with the coaching, practice, and feedback necessary.		

Use 30x4 to solve 29x4 Number Sense: Multiplication and Division – Mental Math

6. Do not remove the card that says 30 x 4. Confirm, or if necessary, clarify that the answer is 120 by saying, **"30 x 4 is 120. See, 30, 60, 90, 120."**
Lay the card that says 29 x 4 on the table. **"30 x 4 is 120. How much is 29 x 4?"**

3	2	1
Subtracts 4 from 120: Student shows an understanding of the connection between 30 x 4 and 29 x 4 by subtracting four. If the student attempts to do this but makes a mistake in the subtraction, count correct.	**Correct, solves separately:** Student resolves the entire task in order to answer 116.	**Incorrect:** Student does not attempt to subtract 4 (e.g. subtracts 1) or attempts to do the full calculation, or makes no attempt.
Commentary: This question is designed to reveal a conceptual understanding of multiplication. Over the years, the Forefront Global Cohort has revealed that this task is more difficult than the previous one. In order to improve performance on this kind of task, instructional methods like Number Talks and others that promote mental math strategies over procedures have shown themselves to be effective in improving outcomes on this task.		

Grade 5: Fall

How Many Tens in 214 Number Sense: Ones, Tens and Hundreds

7. Show the student the picture of the pencil boxes. **"I have 214 pencils that need to be packed into boxes with ten pencils in each box. How many boxes can I fill with 10 pencils each?"** If the student does not answer correctly, ask them to explain their thinking.

3	2	1
Correct: Student answers 21 (some might account for the remainders. Take note, but this does not impact the scoring.) If student answers 22 ask them to explain to check to see if one box will not be full.	**Self-corrects when explaining:** Student corrects answer when thinking it through aloud.	**Incorrect:** Student does not answer 21 boxes.
Commentary: This contextualized problem, which is a place value problem in its essence helps to reveal a conceptual understanding that will support students' growing understanding of division.		

Change for a Twenty Dollar Bill Number Sense: Place Value - Mental Math

8. Place out the money card, "**If you have $20.00 and pay for something that costs $12.25. How much change should you get?"** Whether correct or incorrect, ask them, **"How did you figure that out?"**

3	2	1
Correct: Student answers $7.75.	Self corrects when explaining:	**Incorrect:** Student does not answer $7.75
Commentary: This question was modified from its prior version which presented an item that costs $16.97. Historically, only about 50% of students answered that question correctly. This is intended to better identify students who are in need of further assessment and targeted instruction. Unfortunately, after the results of this modified task were also somewhat disappointing, and fewer than 50% of students in the Global Cohort were able to mentally solve this problem.		

Grade 5: Fall

Fractions and Decimals Number Line Number Sense: Fractional Thinking - Number Lines

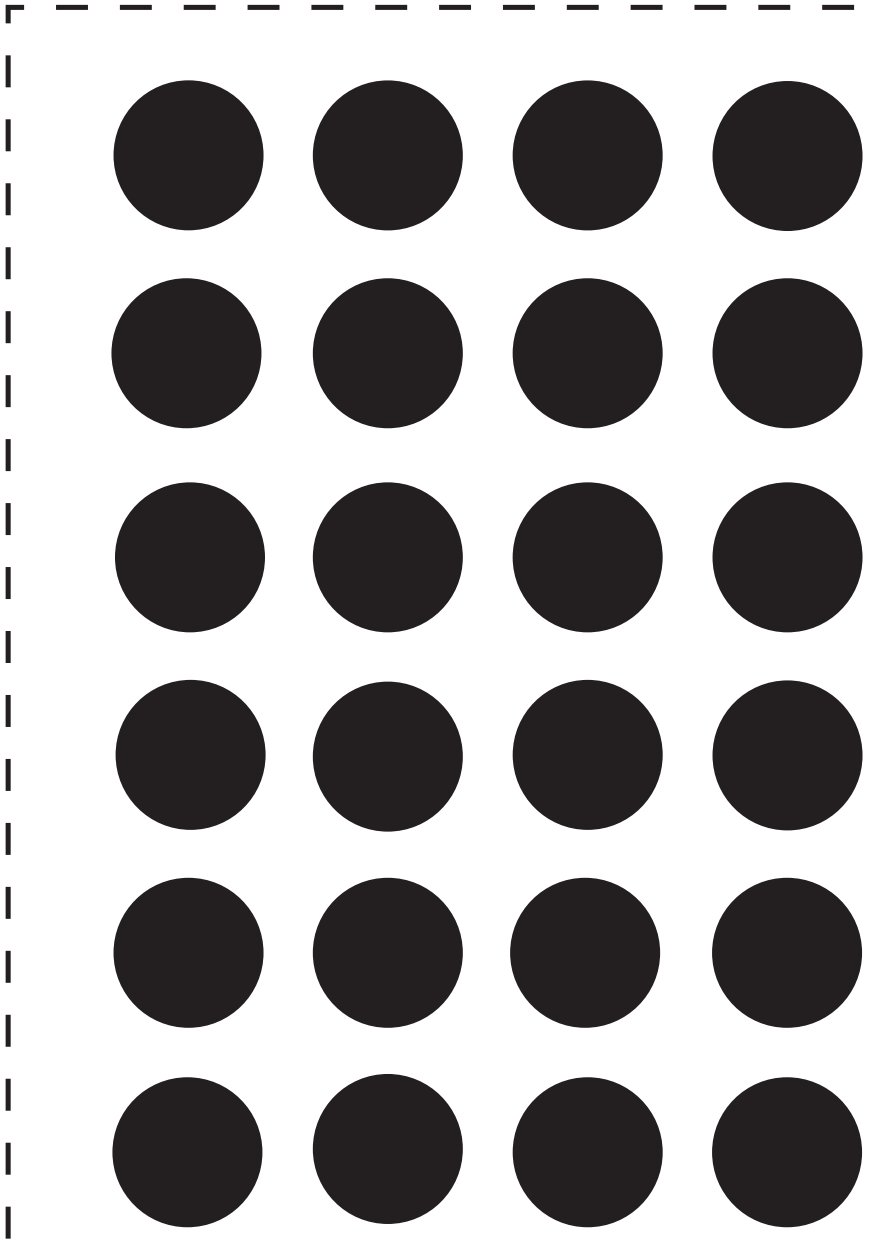
9. Give the student the paper number line. **"Put marks on the number line where these numbers go. Label the dots."**

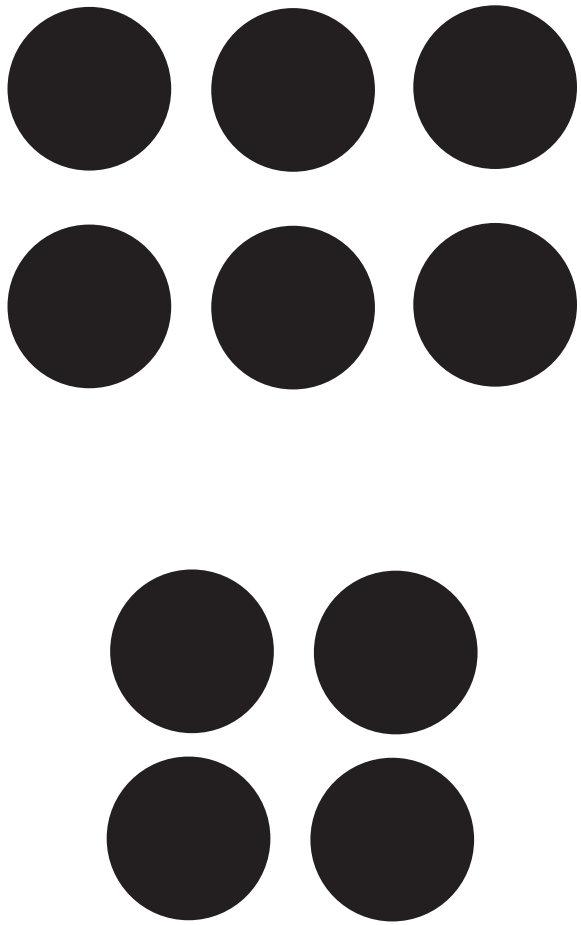
Scoring: Give one point for each bullet below:

- **1.5 is between 1- 2**
- **1 ¾ is placed right of 1.5 between 1-2**
- **⅔ is between 0-1**

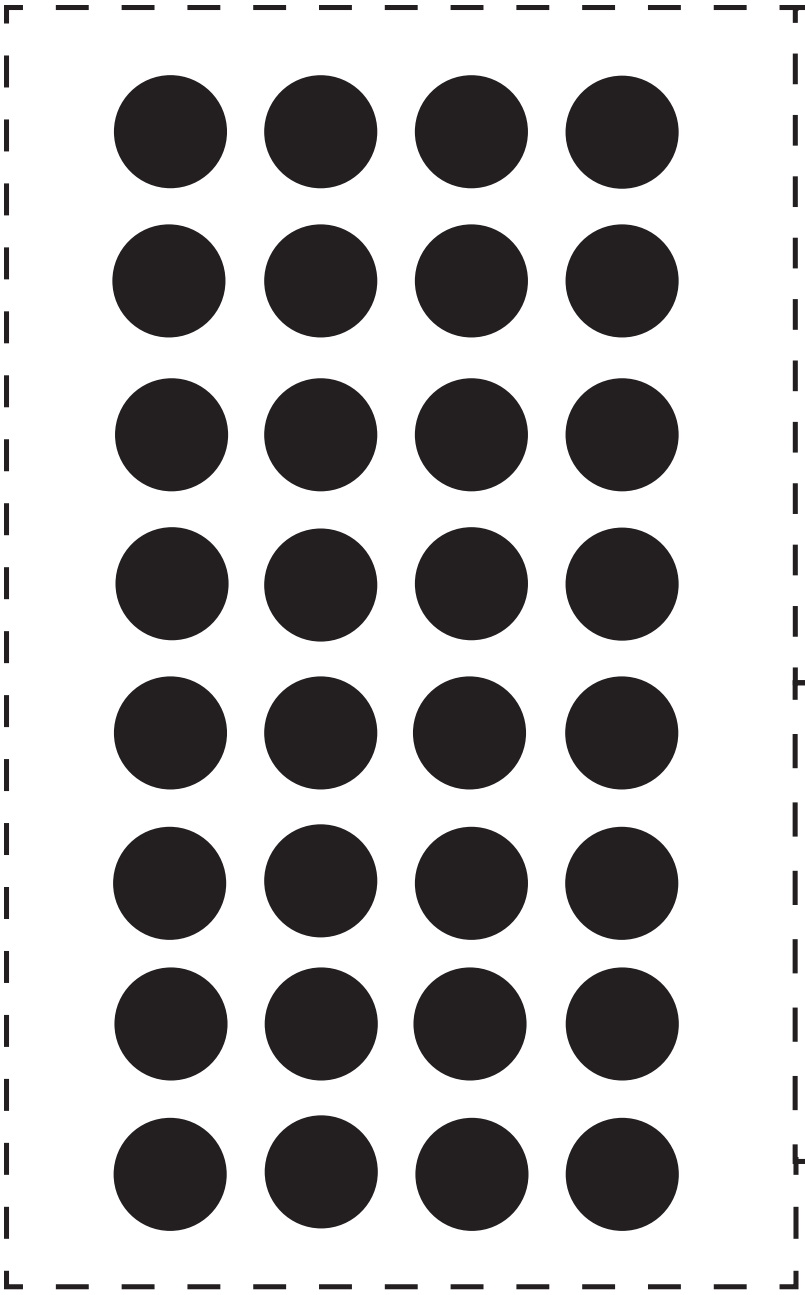
3	2	1
3 points	2 points	1 or no points
Commentary: Fractions and decimal numbers are essential topics for 5th grade mathematics. In order for students to access the instruction, to engage productively with the curriculum, and to formalize the understandings and procedures of 5th grade students need a firm foundational understanding of fractions. The ability to place fractions and decimals on number lines is critical. Teachers will want to ensure that students can reason with how these numbers relate to one another and where they lie on the number line.		

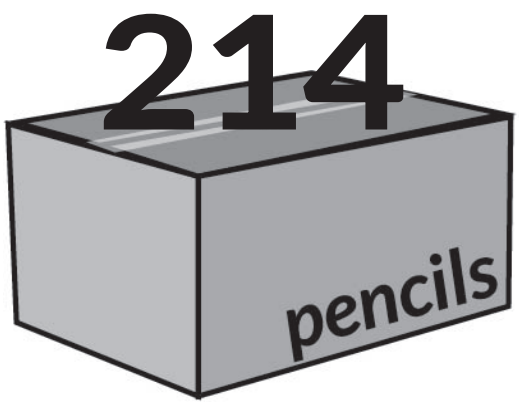
$\frac{1}{2}$ | $\frac{1}{1}$	1,002
32 ÷ 4	90,540
30 x 4	٥ | ٣
29 x 4	40,008

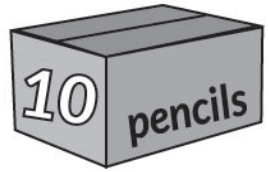


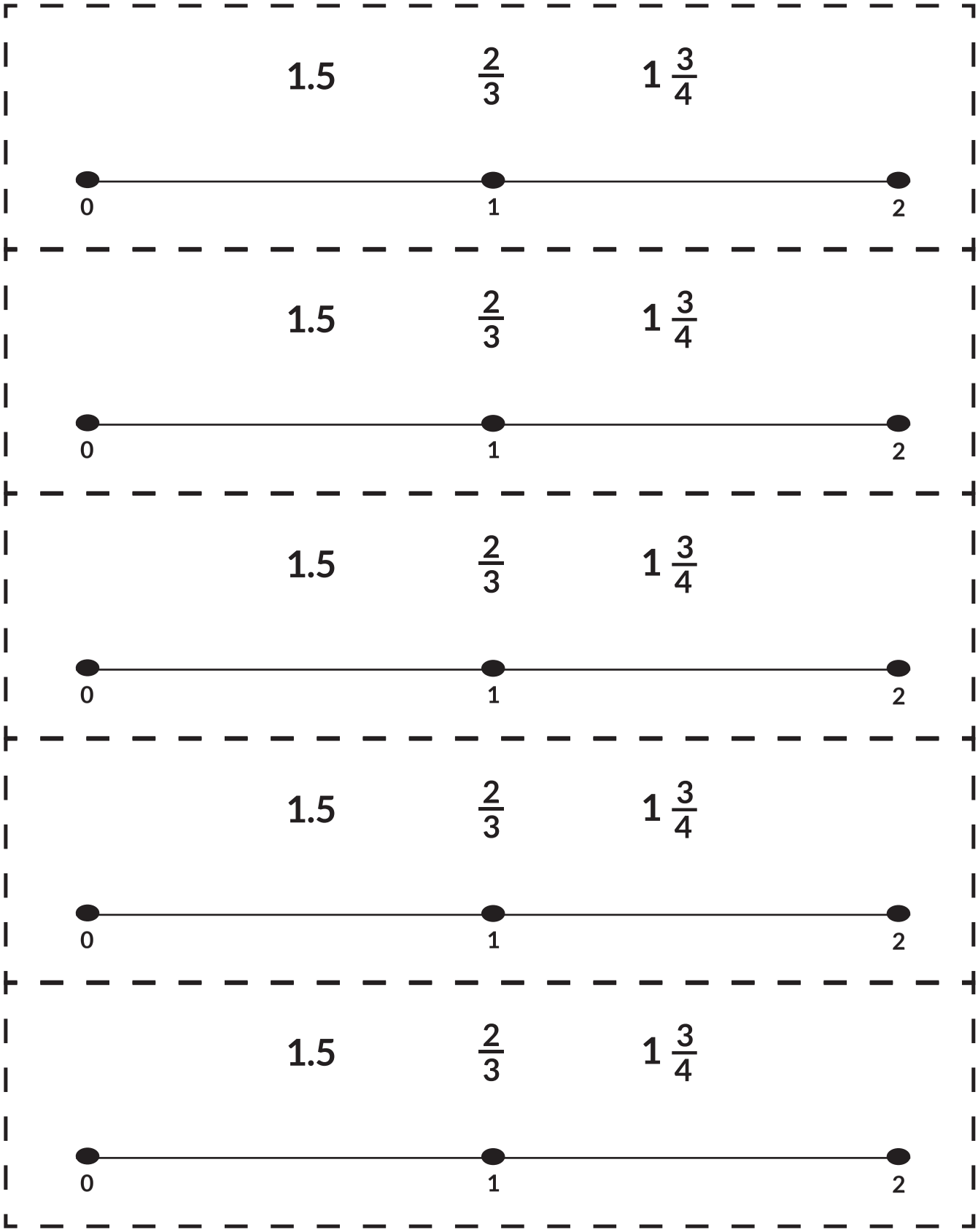


6 x 4









copy one number line per student

Grade 6

Fall Universal Screener for Number Sense

Instructions and Guidance:

Who? Whenever possible, the teacher who works most directly with the child should be the one to administer the interview portion of the screener and score the written portion

Read the entire assessment through in preparation and run through the tasks.

Prepare the materials. Only provide materials as described in the script.

Do not provide the student with paper and pencil.

Set up in a place with as few distractions as possible.

Keep a good pace. Most assessments will take 5 – 7 minutes.

Limit Questioning: It is usually best to attempt to limit questioning and move at a steady pace through the tasks. This improves the efficiency, but also helps to ensure the consistency of administration, and therefore the reliability of the results.

Be flexible: You might find that you can work most efficiently by administering one task at a time, moving from student to student rather than having them come to a station. This can be done with the counting tasks and numeral ID task. Users of Forefront will find that the interview tool can be switched to focus on tasks. Here is a help article for using the interview tool.

Collaborate: Sometimes groups of students can be reorganized in creative ways to provide one teacher with the ability to sit with individual students.

Watch carefully and take notes: The nuances in behaviors that reveal a child's number sense development are sometimes hard to see and hear.

Smile and do your best to make the situation as stress free as possible. If the child seems particularly timid or nervous, consider trying at another time.

Video tape: Although it is not necessary for the administration of the assessment, recording an assessment or two to discuss with colleagues can be an excellent way to learn together, build consistency in administration and scoring, and communicate with parents.

Grade 6: Fall

Number Sense Screener

Note Catcher, *print 1 copy/student back to back*

Name: _____

Date: _____ Teacher: _____

Language of Assessment: □ English □ Spanish □ Other: _____

AVMR Assessment(s) Suggested? □ No □ Yes (see below)

Number Words and Numerals	Score
1. "Start counting forward from 9.8 (spoken "nine and eight-tenths") by tenths and I'll tell you when to stop." (stop at 10.2). ☐ *correct and fluent: 3 pts.* ☐ *correct but uncertain: 2 pts.* ☐ *unsuccessful: 1 pt.*	
2. Numeral Identification cards. **Indicate if the response is immediate (✓), delayed (d), or incorrect (x).** **____5,628.41 _____$\frac{9}{4}$ _____947.392 _____$2\frac{7}{12}$** ☐ *all correct/fluent: 3 pts.* ☐ *all correct but uncertain: 2 pts.* ☐ *any incorrect: 1 pt.*	
Multiplication and Division	**Score**
3. 60 x 34 ☐ *Correct/Doubles: 3 pts.* ☐ *incorrect/strategy: 2 pts.* ☐ *correct/no viable strategy: 1 pt.*	
4. True or False (960 ÷ 6) + (960 ÷ 6) = 80 ☐ *correct: 3 pts.* ☐ *correct but uncertain: 2 pts.* ☐ *incorrect/no viable strategy: 1 pt.*	
Place Value	**Score**
5. $300.00 - $260.75 ☐ *correct: 3 pts.* ☐ *self-corrects: 2 pts.* ☐ *incorrect: 1 pt.*	
Fractions	**Score**
6. 3 ÷ ¾ ☐ *correct: 3 pts.* ☐ *correct but uncertain: 2 pts.* ☐ *incorrect/no viable strategy: 1 pt.*	

Grade 6: Fall

Number Sense Screener

Note Catcher, *print 1 copy/student back to back*

Name: _____

Date: _____ Teacher: _____

Language of Assessment: □ English □ Spanish □ Other: _____

AVMR Assessment(s) Suggested? □ No □ Yes (see below)

7. 1 Long Orange Bar = ? Medium Purple Bars ☐ *correct: 3 pts.* *correct but uncertain: 2 pts.* ☐ *incorrect/no viable strategy: 1 pt.*	
8. ¾ Long Orange Bar = ? Medium Purple Bars ☐ *correct: 3 pts.* ☐ *correct but uncertain: 2 pts.* ☐ *incorrect/no viable strategy: 1 pt.*	
9. ¾ Long Orange Bar = ? Small Green Bars ☐ *correct: 3 pts.* ☐ *correct but uncertain: 2 pts.* ☐ *incorrect/no viable strategy: 1 pt.*	

Grade 6: Fall

Quick Script: English

Number Words and Numerals

1. **"Start counting forward from 9.8 (spoken "nine and eight-tenth") by tenths and I'll tell you when to stop."** (stop at 10.2).
2. Lay the cards out one at a time and ask, **"What number is this?"**

5,628.41 $\frac{9}{4}$ **947.392** $2\frac{7}{12}$

Multiplication and Division

3. Put the card that says 30 x 34 =1020 in front of the student. Show card: 60 x 34. **"Use your answer to 30 x 34 to help you figure out 60 x 34. How much is 60 x 34? How did you work it out?"**
4. Put the card that says 960 ÷ 12 = 80 in front of the student. Ask the student **"Use this to determine if the following is true or false"**:
   (960 ÷ 6) + (960 ÷ 6) = 80
   Ask the student **"How did you work that out?"**

Place Value

5. Place out the card, **"If you spent $260.75 and paid with $300.00 how much money would you get back?" "How did you work that out?"** Allow students to correct their answer when explaining their thinking.

Fractions

6. *Dog food is sold in a 3-pound bag. My dog, Max, eats a 3/4 pound serving every day. **"How many servings of dog food are in the bag?"**
   "Draw a picture, construct a number line, or make a table to explain your solution."

For items 7-9: Place out the card with the three bars. Say, **"Pretend that the small green bar can fit into the long orange bar 16 times. Pretend that the small green bar can fit into the medium purple bar two times."**

7. **"How can you use this information to figure how many times the medium purple bar would fit into the long orange bar?"**
8. Regardless of the response the student provides, point to the medium purple bar and explain, **"This medium purple bar can fit 8 times into the long orange bar." "How can you use this information to figure out how many medium purple bars create a length ¾ the length of the orange bar?"**
9. Regardless of the response the student provides, point to the ¾ length of the long orange bar and explain, **"This medium purple bar can fit 6 times into ¾ of the length of the long orange bar." "How can you use this information to figure out how many green bars create a length ¾ the length of the orange bar?"**

*Adapted from the Institute for Learning at the University of Pittsburgh 2016.

Grade 6: Fall

Quick Script: Español

Numerales y palabras numéricas

1. **"Empiezas a contar hacia adelante desde 9.8 (hablando" nueve y ocho décimos") por décimos y yo te diré cuándo parar".** (para al 10,2).
2. Coloque las tarjetas una a la vez y pregunte: **"¿Qué número es este?"**
3. 5,628.41 $\frac{9}{4}$ 947.392 $2\frac{7}{12}$

Multiplicación y división

4. Pon la tarjeta que dice 30 x 34 = 1020 al frente del estudiante. Demuestra la tarjeta: 60 x 34. **"Usa tu respuesta a 30 x 34 para ayudarte a calcular 60 x 34. ¿Cuánto es 60 x 34? ¿Cómo lo resolviste?**
5. Ponga la tarjeta que dice 960 ÷ 12 = 80 al frente del estudiante. Pregúntele al estudiante **"Utiliza esto para determinar si lo siguiente es verdadero o falso"**:
   (960 ÷ 6) + (960 ÷ 6) = 80
   Pregúntele al estudiante **"¿Cómo resolviste eso?"**

Valor

6. Ahora ponga la tarjeta,**"Si gastas $260.75 y pagas $300.00, ¿cuánto dinero recuperarías?" "¿Cómo resolviste eso?"** Permita que los estudiantes corrijan su respuestas cuando expliquen su pensamiento.

Fracciones

7. * La comida para perros se vende en bolsas de 3 libras. Mi perro, Max, come una porción de ¾ de libra todos los días. **"¿Cuántas porciones de comida para perros hay en la bolsa?"**

"Haz un dibujo, construye una línea numérica o haz una tabla para explicar tu solución".

Para los puntos 7-9: Coloque la tarjeta con las tres barras. Pretende que la pequeña barra verde pueda caber en la larga barra anaranjada 16 veces. Pretende que la barra verde pequeña puede caber dos veces en la barra morada mediana.

8. **"¿Cómo puedes utilizar esta información para calcular cuántas veces la barra morada mediana cabría en la barra anaranjada larga?"**
9. Independientemente de la respuesta que brinde el estudiante, apunte a la barra morada mediana y explique: **"Esta barra morada mediana puede caber 8 veces en la barra anaranjada larga". "¿Cómo puedes usar esta información para averiguar cuántas barras de color morado medianas crean una longitud ¾ de la longitud de la barra anaranjada?"**
10. Independientemente de la respuesta que brinde el estudiante, apunte a la longitud de ¾ de la barra anaranjada larga y explique: **"Esta barra morada mediana puede caber 6 veces en los ¾ de la longitud de la barra anaranjada larga". "¿Cómo puedes usar esta información para averiguar cuántas barras verdes crean una longitud de ¾ de la longitud de la barra anaranjada?"**

* Adaptado del Institute for Learning at The University of Pittsburgh 2016.

Grade 6: Fall

Scoring Guide *Print 1 copy per teacher*

Number Words and Numerals

1. **"Start counting forward from 9.8 (spoken "nine and eight-tenth") by tenths and I'll tell you when to stop."** Lay the card that says 9.8 on the table. Stop at 10.2. If the student finishes the count saying either ten and two-tenths, ten point two, nine and twelve tenths, or nine point twelve have the student write the number on the back of the notetaker. If student does not count to ten and two-tenths, ten point two, nine and twelve tenths, or nine point twelve score as unsuccessful.

3	2	1
Correct and fluent: Student demonstrates an ability to count to 10.2 and writes the number correctly.	**Correct, but uncertain:** Student is not fluent in their count to ten and two tenths, but writes 10.2 correctly. Or Student is fluent in their count, but is unable to write 10.2 correctly. Or Student says "nine and twelve tenths', or 'nine point twelve" instead of "ten and two-tenths', or 'ten point two" but writes the number correctly.	**Unsuccessful:** Student is unable to count from 9.8 to 10.2. Or Student ends count saying "nine and twelve tenths', or 'nine point twelve" and is unable to accurately write 10.2.
Commentary: This task is a progression of counting tasks that start in kindergarten. For students who are unsuccessful, as time allows, consider a lower count to determine at what level the student is competent in their counting abilities. For students who says "nine and twelve tenths', or 'nine point twelve" at the end of this count, this may be more of a language issue than an understanding of the number system, thus the writing of the number has been added to this task to help understand the student's thinking.		

Grade 6: Fall

Scoring Guide *Print 1 copy per teacher*

2. Reading Decimals and Fractions

5,628.41 $\frac{9}{4}$ 947.392 $2\frac{7}{12}$

Lay the cards out one at a time and ask, **"What number is this?"**.

3	2	1
Correct and Fluent: Student shows an ability to read these numbers without difficulty.	**Correct but Uncertain:** Student shows some uncertainty with reading these numbers.	**Unsuccessful:** Student is unable to read any of the numbers.
Commentary: The ability to read numbers is a question of access to instruction, and necessary for engaging in mathematical discourse.		

3. Use 30 x 34 to solve 60 x 34

Put the card that says 30 x 34 =1020 in front of the student. Show card: 60 x 34. **"Use your answer to 30 x 34 to help you figure out 60 x 34. How much is 60 x 34? How did you work it out?"**

3	2	1
Correct, Doubles Product: Student solves correctly on first attempt and does not multiply in isolation of 30 x 34.	**Correct but Uncertain:** Student solves incorrectly on first attempt and does not multiply in isolation of 30 x 34.	**Incorrect or Correct No Viable Strategy:** Student relies solely on multiplication procedures or solves 60 x 34 in isolation of 30 x 34.
Commentary: This task is intended to assess the students' ability to high relations of 3 and to use the relationship between the multiplicand and the product to solve more complex multiplication problems.		

Grade 6: Fall

Scoring Guide *Print 1 copy per teacher*

4. Put the card that says 960 ÷ 12 = 80 in front of the student. Say, **"960 divided by 12 is equal to 80. Use this to determine if the following is true or false"**: Place the next card: (960 ÷ 6) + (960 ÷ 6) = 80

   After the student has answered, ask, **"How do you know?"**

   Occasionally, students will need some additional prompting to understand the task. If so, say **"If you divide 960 by 12, is this same as dividing 960 by 6 and then 6 again?"**

3	2	1
Correct: Student correctly describes this statement as false and is able to provide a conceptual explanation why this statement is false.	**Correct but Uncertain:** Student correctly describes this statement as false but is not able to provide a conceptual explanation why this statement is false; OR Student incorrectly describes this statement as true but it is able to provide a conceptual explanation why they believe this statement to be true.	**Incorrect/No Viable Strategy:** Student incorrectly describes this statement as true but is not able to provide a conceptual explanation why they believe this statement is true.
Commentary: Fluency with basic division should inform students' division strategies with more complex division problems. Perhaps more important is an understanding of division as it relates to properties. This task is designed to assess the student's ability to use multiplicative doubling and halving relations inversely to solve division problems. This task also has the potential to assess the student's application of the distributive property.		

Grade 6: Fall

Scoring Guide *Print 1 copy per teacher*

5. Place out the card with the money and price tag, **"If you spent $260.75 and paid with $300.00 how much money would you get back?" "How did you work that out?"** Allow students to correct their answer when explaining their thinking.

3	2	1
Correct: Student answers $39.25.	**Self-corrects when Explaining Thinking**	**Incorrect:** Student does not answer $39.25.
Commentary: This question was modified from the 5th grade version which presented an item where you have $20.00 and pay for something that costs $12.25. By examining these relationships in the hundreds, students are asked to partition and iterate with more complex units.		

6. Place the card with the picture of the dog food in front of the student. Say, **"Dog food is sold in a 3-pound bag. My dog, Max, eats a 3/4 pound serving every day. How many servings of dog food are in the bag?"**
   If a student is struggling to solve this problem, provide paper and ask the student to draw their or write out their thinking. If a student continues to struggle with a way to solve the problem, ask the student to try and solve the problem with a 1.5-pound dog food bag. If a student does not draw or write out any reasoning, then after the student provides a solution, turn over the Note Catcher and ask the student to draw or write their strategy.
   "Draw a picture, construct a number line, or make a table to explain your solution."

3	2	1
Correct: Student answers 4 servings and provides a visual or written explanation grounded in conceptual reasoning	**Correct without explanation or incorrect with understanding:** Student does not answer 4 servings, but provides a visual or written explanation grounded in conceptual understanding. OR Student answers 4 servings, but is not able to provide a visual or written explanation grounded in conceptual understanding	**Incorrect without viable strategy** Student does not answer 4 servings and is not able to provide a visual or written explanation grounded in conceptual reasoning.
Commentary: This task is designed to assess students' ability to partition and iterate visual units to solve fraction division tasks.		

Grade 6: Fall

Scoring Guide *Print 1 copy per teacher*

For items 7-9: Present the image of the 3 bars. Say, "**Pretend that the small green bar can fit into the long orange bar 16 times. Pretend that the small green bar can fit into the medium purple bar two times."**

7. Show the student the three bar models and explain to the student that **"Pretend the small green bar can fit into the medium purple bar two times."** Then ask the student, **"How can you use this information to figure how many times the medium purple bar would fit into the long orange bar?"**

3	2	1
Correct: Student can correctly answer this task by iterating and/or partitioning the bar with the given bars.	**Correct but Uncertain:** Student answers correctly but do not use the given bars to solve this task; OR Student answers incorrectly but are able to use the given bars to solve the task.	**Incorrect and No Viable Strategy:** Student is not able to answer correctly and use a viable strategy to explain their solution.
Commentary: This task is designed to assess students' ability to develop fractions as a form of measure. If students are able to mentally iterate the purple bar to imagine how many times it would fit into the orange bar, they are able to solve fraction tasks with part-whole relationships. If students are able to coordinate 16 as eight two's without losing the relationship between the units, they are able to solve fraction tasks as a form of measure.		

Grade 6: Fall

Scoring Guide *Print 1 copy per teacher*

8. Regardless of the response the student provides, point to the medium purple bar and explain, **"This medium purple bar can fit 8 times into the long orange bar." "How can you use this information to figure out how many medium purple bars create a length ¾ the length of the orange bar?"**

3	2	1
Correct: Student can correctly answer this task by iterating and/or partitioning the bar with the given bars.	Student answers correctly but do not use the given bars to solve this task; OR Student answers incorrectly but are able to use the given bars to solve the task.	**Incorrect and No Viable Strategy:** Student is not able to answer correctly and use a viable strategy to explain their solution.
Commentary: This task is designed to assess students' ability to develop fractions as a form of measure. If students are able to mentally iterate the purple bar to imagine how many times it would fit into ¾ of the orange bar, they are able to solve fraction tasks with part-whole relationships. If students are able to coordinate ¾ of 16 as six two's without losing the relationship between the units, they are able to solve fraction tasks as a form of measure.		

9. Regardless of the response the student provides, point to the ¾ length of the long orange bar and explain, **"This medium purple bar can fit 6 times into ¾ of the length of the long orange bar." "How can you use this information to figure out how many green bars create a length ¾ the length of the orange bar?"**

3	2	1
Correct: Student can correctly answer this task by iterating and/or partitioning the bar with the given bars.	**Correct but Uncertain:** Student answers correctly but do not use the given bars to solve this task; OR Student answers incorrectly but are able to use the given bars to solve the task.	**Incorrect and No Viable Strategy:** Student is not able to answer correctly and use a viable strategy to explain their solution.
Commentary: This task is designed to assess students' ability to develop fractions as a form of measure. If students are able to mentally iterate the green bar to imagine how many times it would fit into ¾ of the orange bar, they are able to solve fraction tasks with part-whole relationships. If students are able to coordinate six and 12 as ¾ of 16 without losing the relationship between the units, they are able to solve fraction tasks as a form of measure.		

5,628.41

947.392

9 | 4

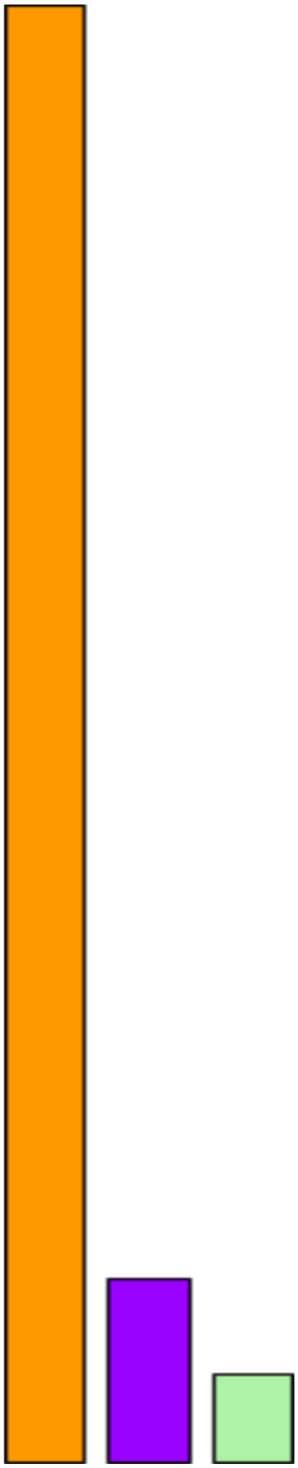
7 | 2 12

$30 \times 34 = 1020$

$60 \times 34 = ?$

$960 \div 12 = 80$

$(960 \div 6) + (960 \div 6) = 80$




TREATS
3
lbs


¾ lb.


$260.75

Midyear Assessments

Updated June 2024

Introduction and Overview

The revisions of the Midyear Universal Screeners for Number Sense (USNS) from 2020 represent a significant redesign to increase the breadth and improve efficiency of the assessments while maintaining the richness of the information. The Midyear USNS combine interviews with teacher scored paper and pencil tasks to create a rich, multifaceted portraits of student understanding while being manageable for classroom teachers to administer. Thanks to all of the teachers, colleagues, and broader math education community whose ideas and feedback have informed this work, and these revisions.

The Three Components of the Midyear Universal Screeners for Number Sense

Interviews

The structured interviews of the Midyear USNS reveal skills and understandings that are difficult, if not impossible, to assess otherwise. These include assessments of number word sequences (rote counting), numeral identification, mental math, and working with materials.

Much of the information derived from the interview tasks comes from careful, professional observations of how students solve the problems: the strategies they use, the explanations that they give, the gestures they make, etc. For this reason, having the teacher who works most consistently with the student administer the assessment is preferred.

The interviews in these revisions have been significantly shortened for each of the grade levels in order to make the administration more manageable.

Written Tasks

The written components of the Midyear USNS are principally tasks that ask students to explain their reasoning, draw pictures, write equations or otherwise communicate their thinking in ways where paper and pencil is most efficient, valid, reliable, and informative. The written components of these revisions ask fewer questions that the previous version and focus on tasks that require a more extended response from the students.

Fluency Tasks (Formerly known as D Tasks) (Written Tasks Continued)

The Fluency Tasks focus primarily on computational fluency. Computational fluency represents an important facet of number sense. Computational fluency enables students to apply reasoning to solve more complex problems without being caught up in the mechanics of the arithmetic.

Note to Forefront Users: When entering the data for the Fluency Tasks in Forefront, please enter the points scored. Forefront will automatically convert these to the performance levels. For example, if a problem set has 6 questions, and the student gets all 6 questions correct, enter 6 in Forefront.

For those not yet using Forefront, use the performance levels to calculate the overall proficiency for the assessments.

Administer the Fluency Tasks of the USNS using paper and pencil. This can be done in the same sitting with the written tasks, or separately.

Administration Window and Notes

The Midyear Screeners are intended to be administered sometime between mid-early November and the beginning of February.

The Data

As with Fall Screeners, Forefront® by Forefront Education is configured to provide an ideal data collection tool. Forefront provides an interview tool and a platform for the digital components that are optimized for the Screeners. Forefront enables schools and districts to view growth and performance for individual students, side by side with aggregated results for classes, schools, districts, and a global cohort.

The consistency of content and methodology across the assessments provides a measure of growth from one assessment to the next. This can be helpful for understanding the impact of instruction and interventions. The tasks of the USNS increase in difficulty from one assessment to the next, meaning that adequate growth relative to the content appears as a horizontal line. Students whose growth is a line that inclines, therefore, are accelerating relative to the content of the assessment. USNS users who choose to use Forefront® will find that flexible growth and achievement reports are available for individuals and groups of students: individual classrooms, small groups, school and district cohorts, demographic groups, and the Forefront Global Cohort, both within and across years. Forefront also provides the tools for schools to see correlations to other assessment systems, including classroom broad scale assessments.

Forefront provides the technological infrastructure for the development of aggregated norm to which users can compare the performance of their students. Aggregated and anonymized local and global norms are immediately available to Forefront users. Researchers interested in utilizing the data are encouraged to contact screeners@forefront.education.

The Content

The USNS are not intended to be comprehensive assessments of mathematics; rather they focus explicitly on critical areas of mathematical development recognized to be indicators of number sense: number word sequences, cardinality, strategic counting, numeral identification and writing, problem solving, measurement, number lines and comparisons, place value, computational fluency, operational sense, unitizing and units coordination.

The Midyear USNS can be utilized as criterion referenced assessments. The tasks of computational fluency, number magnitude, operations, and problem solving align with the expectations defined in the Common Core and other state standards. Using Forefront to gather and visualize the data also enables the assessments to be used as norm (both local and national) referenced assessments.

Performance Levels

Performance levels are discretely defined task by task in these documents. A difference that users will find between the Midyear USNS and the Fall is that some tasks have been designed to assess performance that is “well below basic” (performance level zero). This is done with the intention of drawing additional attention to critical unfinished learning that needs to be addressed in order for students to access the new learning of the second half of the year. Overall performance levels (benchmarks or cut off scores) are provided as an addendum at the end of this document.

Uses of the USNS: Formative or Summative?

The USNS are, first and foremost, written to be screening assessments. That is, they are designed to help identify areas where additional support for students is necessary. In this way they can also serve as readiness assessments. The USNS are also intended to help teachers identify when additional information is needed from diagnostic assessments in order to provide targeted support for students and groups of students. We recommend the assessments provided by the US Math Recovery Council as

diagnostic assessments. The detailed information of the USNS also provides valuable information for formative assessment. Teachers are encouraged to use the results in their daily and long-term planning. It is important to remember that formative assessment is a practice, not a product. These assessments, in and of themselves are not "formative assessments"; only when teachers use the information for feedback and to inform planning and instruction do they become formative assessments.

Because the USNS assess general skills and concepts and are not directly aligned with the lessons and units of any particular curriculum, using them as summative assessments, in general, is not an intended use of these assessments. However, some teachers may choose to use sections of the assessment in that way. For example, if a teacher has been focusing on counting in kindergarten and is interested in determining whether students have made the anticipated progress in their counting by the middle of the year, the midyear USNS are designed to help teachers in determining the impact of the instruction. Therefore, although it is unlikely that the Midyear USNS will serve as summative assessments in their entirety, certain elements of the assessment could be used in that way.

Progress Monitoring: Response to Intervention

The USNS can be helpful as measures of progress monitoring for individuals and groups of students to be added to a body of evidence. Progress monitoring for individual students, as it relates to the work or Response to Intervention, is best done through the collection of evidence over time. The USNS in and of themselves do not provide sufficient evidence of progress for the purpose of programmatic decision making, however, it is appropriate to include USNS results as part of a larger body of evidence.

Tier 1 Progress Monitoring

Tier 1 progress monitoring is the systematic measurement of progress across groups of students over time. It answers questions like: Are our schools making progress in better supporting students over time? Are we seeing improvements in performance across demographic groups? Is our professional learning and other initiatives having impacts in the performance of students? Is the adopted curriculum resulting in growth in the number sense indicators assessed on the USNS? The USNS assessments serve as Tier 1 progress monitor tools, especially when taken into consideration alongside state and other assessment results. Forefront® supports districts in maximizing the usefulness of the information from the USNS (and other assessments) for these purposes.

An Ongoing Improvement Process

The revisions of the Midyear USNS released here represent a commitment to ongoing improvement and refinement of these number sense assessments. While there is an interest in consistency, there is also an interest in responding to information from practitioners in the field, and from research (including validation studies). We leave the door open to continued refinement of these assessments over time.

Feedback from educators and researchers is welcome and encouraged. Please correspond with screeners@forefront.education.

Credits and Thanks

David Woodward – author and project lead

Special thanks:
Anna Grace, Mary Ann Davis, the wonderful teachers of Boulder Valley School District, math educators who have provided and continue to provide feedback, and Forefront users everywhere.

Midyear Universal Screeners for Number Sense

Overall Performance Levels 2023-2024

Performance levels should be calculated using the performance levels for each task or task set. Forefront will do this automatically. For written and fluency tasks, enter point values as described in the scoring guides.

Kindergarten

Well Below Basic	Below Basic	Basic	Proficient
11-13	14-17	18-29	30-36

First Grade

Well Below Basic	Below Basic	Basic	Proficient
6-11	12-17	18-29	30-36

2nd Grade

Well Below Basic	Below Basic	Basic	Proficient
10-16	17-23	24-39	40-48

3rd Grade

Well Below Basic	Below Basic	Basic	Proficient
9-15	16-22	23-36	37-45

4th Grade

Well Below Basic	Below Basic	Basic	Proficient
9-17	18-26	27-44	45-54

5th Grade

Well Below Basic	Below Basic	Basic	Proficient
8-15	16-22	23-36	37-45

6th Grade

Well Below Basic	Below Basic	Basic	Proficient
8-10	11-13	14-22	23-27

Kindergarten: Midyear

Universal Screener for Number Sense

Instructions

Interview

The interview tasks will take anywhere from 5 – 10 minutes per student. So, time yourself accordingly and allow for enough time to get it done. Teachers are encouraged to administer the interveiws themselves, as the direct experience with the child provides much more information than a simple score ever can. Do not provide paper and pencil, and only provide materials as described.

Some ideas to take into consideration:
Do the counting tasks all at once, moving from student to student (rather than having them come to you), so you can complete them efficiently while the students are working independently on other things, standing in line, etc. The numeral ID task can be done easily in a similar way. Then, later, set up your materials for the covered addition and subtraction tasks to have students come one at a time to complete those tasks.

Written Portion

The written tasks are generally best administered in small groups, although some have administered the number writing tasks whole group successfully.

Provide each student with a copy of the written assessment and a pencil and read each question aloud.
For Question 1, read the following instructions:
"**Write the number seven." "Write the number five." "Write the number ten." "Write the number fifteen." "Write the number twelve."**

"Escribe el número siete." "Escribe el número cinco." "Escribe el número diez." "Escribe el número quince." Escribe el número doce."

If necessary, prompt individual students to write other numbers to determine their level of proficiency.

Materials: For the written portions of the assessment, scratch paper and manipulatives familiar to the students can be made available for the students to use if they choose to do so.

Kindergarten: Midyear

Universal Screener for Number Sense

Detailed Script and Rubrics, *print 1 copy/test administrator*

Verbal Counting CCSS - K.CC.A.1 Number Sense: Forward Number Word Sequences

1. **"Let me hear you start counting from 17."** Allow student to count to at least 30.
   If student is unsuccessful say, **"Start counting from 8 and I'll tell you when to stop."** Allow student to count to at least 30.
   If student is not successful starting from 8, have the student start from 1.

3	2	1	0
Able to count fluently to 30 starting from 17.	Student counts to 30 starting from 17, but might have longer pauses, or self-corrections. Or Student counts to 30 but needs to start from 8. (Student is not able to consistently start count from any number in the sequence.)	Student counts to 20 starting from 8 or from 1 but is unable to count to 30.	Student is unable to count to 20 starting from 1. Errors might include confusion of teen numbers with –ty numbers (e.g. 13 versus 30), or skipping numbers.
Commentary: Students should be able to count to 30 by the end of the first trimester starting from any number in the sequence, and can count by tens to at least 50. This ability to start the count from any number is foundational for learning to use a count on method.			

Numeral Reading CCSS - K.CC.A.3 Number Sense: Numeral Identification

2. Numeral Identification Cards: Place cards in front of child one at a time (not in numerical order). Say, **"Read this card to me."** (check if correct; record incorrect answers)

7 18 12 6 20 15 10

3	2	1
Fluently and correctly reads all numbers.	Correctly identifies all numbers 10 and under, but is unable to identify the teen numbers and/or 20 or does so with self-corrections, delays, or counting up to recall.	Misidentifies one or more of the numbers 10 or less.
Commentary: By midyear, most instructional materials will assume that students can read numerals to 20. What this means is that if students are still struggling with reading numerals they are at risk of not being able to adequately access the instructional materials and so therefore are prone to falling further behind. Students who cannot read the numerals 1 – 10 by this point often have already come to the attention of the teacher for their progress in reading as well. Some schools will recognize this connection and will utilize other language support teachers, literacy and English Language Acquisition specialists to support students in developing fluency with numeral recognition. Do students count up to the number in order to remember its name? This is a common strategy that some students will develop spontaneously. For this assessment students who successfully use that strategy score at a level two.		

Kindergarten: Midyear

Counting, Cardinality: K.CC.B.4 Number Sense: One to One Correspondence

3. Put 12 counters in front of the student without them overlapping. **"How many counters are here?"** Allow the student to count. When finished, ask **"How many are there?"**

*If the student is unsuccessful say, **"Count them again carefully, and touch each one as you count."** Once the count is complete, ask again, **"How many are there?"**

3	2	1
Student demonstrates 1-to-1 correspondence to 12 and cardinality. (i.e. Student does not recount when asked, "How many?" after initial count.)	Student is inconsistent in their demonstration of 1-to-1 correspondence. AND/OR Cardinality Check: When, after the initial count, the student is again asked, "How many?" the student recounts to respond.	Student is unable to demonstrate 1-to-1 correspondence to 12.
Commentary: Most students will have demonstrated proficiency with 1-to-1 correspondence to 12 by mid-kindergarten. For students who do not score a 3 on this task, notice to which number they are successful. It is an issue with coordinating actions, (counting and touching) or perhaps it is an issue with the number word sequence. Notice carefully, so that the issue(s) can be targeted specifically with direct, corrective instruction.		

Addition and Subtraction: K.OA.A.2 Number Sense: Covered Tasks – Addition

4. Prepare 6 counters and a cover. Say, **"I am taking 6 counters now. Count with me. '1, 2, 3, 4, 5, 6."** Put the counters neatly in a line as you count them. Cover them with something. **"How many counters are under here?"** The student should confirm that there are 6. If not, recount them with the student and ask again.

After they are covered, get two more counters, show them to the student and say, **"Now I am putting 2 more counters under here with the other 6. How many are under here now?"** Put the 2 new counters with the other 6.

- If the student is not successful, attempt the same problem again starting with only 4 counters and adding 2.

3	2	1
Student is able to solve the problem 6 + 2	Student is unable to solve 6 + 2, but is successful with 4 + 2.	Student is unsuccessful with both problems.
Commentary: Students may solve this problem in a variety of ways. Some students will repeat the count of the 6 objects, starting from 1. Others will count on from the 6. This task, with the prompt that the teacher provides of the original 6 is intended to provide a strong scaffold to support counting on. Notice the strategies that the student uses. Starting from 6 makes this problem a little tricker, since students who are developing ways to use fingers will need to represent the first number with both hands. Lowering the first addend to 4 in the second tasks makes it possible for the student to represent each number on a separate hand, which is significantly easier for many students. This task is a sequel to the "turn the plate and add a few more" task from the fall and is designed to determine which students have begun to be able to operate off a given number without needing to recount the set. The count up to six provides a significant scaffold. If you have students for whom you feel that this count up is not required in order for them to be successful the teacher may choose to skip the count up six and simply say, **"I have six"** and cover them without the count. If they are unsuccessful at that point provide the count up to six.		

Kindergarten: Midyear

Addition and Subtraction: K.OA.A.2 Number Sense: Covered Tasks - Subtraction

5. **"I am going to get 6 counters. Count with me."** Have the student count with you as you take 6 and then place them under a cover. **"Now I have 6 counters."** Remove 2 from under the cover and leave them visible on the table. **"I am taking 2 out from under the cover. How many do I still have under here?"**

- If the student is unsuccessful, reestablish that you have six. **"I have 6 again. Count them with me. 1, 2, 3, 4, 5, 6."** Cover them. Remove 1 counter. **"I am taking 1 out."** Leave the one counter on the table in front of the student. **"Now how many are still under the cover?"**

3	2	1
Student answers 6 – 2 correctly.	Student solves second problem (6 – 1) but not the initial problem.	Student is unable to answer correctly.
Commentary: Students should develop the ability to take away 1 or 2 from any number under 9 by about this time in the year. For this reason, the ability to count back from 10 is very important, as this is the way that most students will approach this problem. Observe closely for finger usage. For students who create the 6 on their fingers and then drop one and recount from 1 we are going to score that here as a level 3, however, recognize that this strategy is one that will only support students with subtraction problems that are in finger range. Activities that encourage students to develop a count back strategy for subtraction are strongly encouraged, including songs like "5 Little Ducks" and "Monkeys on the Bed" and "Monkeys Swinging in the Tree."		

Addition and Subtraction K.OA.4

Number Sense: Use Objects to Model Addition and Subtraction Under 20

6. Show the 2 + 3 card to the student. Say, **"Read this card."** (Ensure that the student reads accurately and correct them if they do not.) **"Show me how you could solve the problem using these counters."** Provide the student with more than enough counters.

3	2	1
Student uses the counters to show a group of 2 and a group of 3 and solves the problem accurately.	With additional questioning, the student is able to represent and solve the problem with the counters.	Student is unable to create a situation that matches the problem.
Commentary: Students will display a wide variety of behaviors as they engage with this problem. While the previous problems start with the materials to assess students' ability to solve problems in the context of materials, this problem is designed to assess whether students are making sense of problems that are presented symbolically. Observe the students carefully and question as necessary to determine if the students see that the sum of the addends results from grouping the objects together. Questions like, "Where is the 5?" Can help in determining this. Some students will quickly respond 5 when the card is presented. This is good, but it is not sufficient for scoring a 3 on this task. This task is designed to determine if the student can make the connection to the materials and quantities involved.		

Kindergarten: Midyear

Universal Screener for Number Sense

Quick Script, *print 1 copy/test administrator*

Forward Number Word Sequences

1. "Let me hear you start counting from 17." Allow student to count to at least 30.
If student is unsuccessful say, **"Start counting from 8 and I'll tell you when to stop**." Allow student to count to at least 30.
If student is not successful starting from 8, have the student start from 1.

Numeral Reading

2. Numeral Identification Cards: Place cards in front of child one at a time (not in numerical order). Say, **"Read this card to me."**
cards: 7 18 12 6 20 15 10

Counting Cardinality

3. Put 12 counters in front of the student without them overlapping. **"How many counters are here?"** Allow the student to count. When finished, ask **"How many are there?"**

If the student is unsuccessful say, **"Count them again carefully, and touch each one as you count."** Once the count is complete, ask again, **"How many are there?"**

Addition and Subtraction

4. Prepare 6 counters and a cover.
Say, **"I am taking 6 counters now. Count with me. '1, 2, 3, 4, 5, 6."** Put the counters neatly in a line as you count them. Cover them. **"How many counters are under here?"** The student should confirm that there are 6. If not, recount them with the student and ask again.
After they are covered, get two more counters, show them to the student and say, **"Now I am putting 2 more counters under here with the other 6. How many are under here now?"** Put the 2 new counters with the other 6.
If the student is not successful, attempt the same problem again starting with only 4 counters and adding 2.

5. "I am going to get 6 counters. Count with me." Have the student count with you as you take 6 and then place them under a cover. **"Now I have 6 counters."** Remove 2 from under the cover and leave them visible on the table. **"I am taking 2 out of my hand. How many do I still have under here?"**
If the student is unsuccessful reestablish that you have six. **"I have 6 again. Count them with me. 1, 2, 3, 4, 5, 6."** Cover them. Remove 1 counter. **"I am taking 1 out."** Leave the one counter on the table in front of the student. **"Now how many are still under the cover?"**

6. Show the 2 + 3 card to the student. Say, **"Read this card."** (Ensure that the student reads accurately and correct them if they do not.) **"Show me how you could solve the problem using these counters."** Provide the student with more than enough counters.

For numeral dictation, written problem #1, read the following instructions:
"**Write the number seven." "Write the number five." "Write the number ten." "Write the number fifteen."**
"**Write the number twelve."**

Kindergarten: Midyear

Universal Screener for Number Sense

Spanish Quick Script, *print 1 copy/test administrator*

Forward Number Word Sequences

1. "Déjame escucharte contar desde 17." Allow student to count to at least 30.
If student is unsuccessful say, **"Comienza a contar del 8 y yo te aviso cuando parar**." Allow student to count to at least 30.
If student is not successful starting from 8, have the student start from 1.

Numeral Reading

2. Numeral Identification Cards: Place cards in front of child one at a time (not in numerical order). Say, **"Léeme la tarjeta a mí.".**
cards: 7 18 12 6 20 15 10

Counting Cardinality

3. Put 12 counters in front of the student without them overlapping. **"¿Cuántos contadores tengo aquí?"** Allow the student to count. When finished, ask **"¿Cuántos hay?"**

If the student is unsuccessful say, **"Cuéntalos de nuevo cuidadosamente, y toca cada uno mientras los cuentas."** Once the count is complete, ask again, **"¿Cuántos hay?"**

Addition and Subtraction

4. Prepare 6 counters and a cover.
Say, **"Yo estoy sacando ahora 6 contadores. Cuenta conmigo. '1, 2, 3, 4, 5, 6."** Put the counters neatly in a line as you count them. Cover them. **"¿Cuántos contadores están debajo?"** The student should confirm that there are 6. If not, recount them with the student and ask again.
After they are covered, get two more counters, show them to the student and say, **"Ahora estoy poniendo 2 contadores más debajo aquí con los otros 6. ¿Cuántos tengo aquí debajo ahora?"** Put the 2 new counters with the other 6.
If the student is not successful, attempt the same problem again starting with only 4 counters and adding 2.

5. "Yo voy a conseguir 6 contadores. Cuenta conmigo." Have the student count with you as you take 6 and then place them under a cover. **"Ahora tengo 6 contadores."** Remove 2 from under the cover and leave them visible on the table. **"Esto sacando 2 fuera de mi mano. ¿Cuántos todavía me quedan aquí debajo?"** If the student is unsuccessful reestablish that you have six. **"De nuevo tengo 6. Cuéntalos conmigo. 1, 2, 3, 4, 5, 6."** Cover them. Remove 1 counter. **"Yo estoy sacando 1 afuera."** Leave the one counter on the table in front of the student. **"¿Ahora cuantos están todavía bajo cubierta?"**

6. Show the 2 + 3 card to the student. Say, **"Lee esta tarjeta."** (Ensure that the student reads accurately and correct them if they do not.) **"Enséñame como tu resolverías el problema usando estos contadores."** Provide the student with more than enough counters.

For numeral dictation, written #1, read the following instructions: ***"Escribe el número siete." "Escribe el número cinco." "Escribe el número diez." "Escribe el número quince." Escribe el número doce."***

Kindergarten: Midyear

Universal Screener for Number Sense

Standards Alignment and Scoring Guides for Written Tasks, *print 1 copy/test administrator*

W1. Writing Numbers: K.CC.A.3 Number Sense: Forward Number Word Sequences

For the first question, say: "**Write the number seven." "Write the number five." "Write the number ten." "Write the number fifteen."** "**Write the number twelve."** Prompt for other numbers as necessary to determine level of proficiency.

3	2	1
Student writes all numbers under 10 and usually to 20. Might include occasional transpositions or reversals.	Student can write numbers under 10 but not all numbers to 20. Might include some reversals and transpositions	Student is unable to write the numbers under 10.
Commentary: Many kindergarten students are well on their way to writing all numbers under 20 by midyear. Students who are struggling with transpositions (e.g. 31 is written when asked to write 13) or reversals (backward numbers) should be encouraged to correct those. Students should be accurately writing numbers to 20 by the end of the school year. NOTE: It is important to pay attention to the ways that students write numbers to ensure that they use the correct stroke sequence (i.e. the number 0 should be started at the top of the number).		

W2. Counting objects and writing numerals– K.CC.A.3, K.CC.B.5 Number Sense: Cardinality

3	2	1
Both answers correct	Student correctly writes one of the numbers, but not both. Or student is able to correct work when asked to check an answer.	Student is unable to accurately write numbers to match the images.
Commentary: Students should be able to correctly write numbers to represent groups of at least 10 things presented in an organized fashion.		

W3. Draw a set of 7– K.CC.B.4 Number Sense: Cardinality

3	2	1
Student answers correctly on first attempt.	When administering the assessment, if the student does not draw 7 balls, ask the student to check their answer. If they are able to correct their drawing score a 2.	Student does not draw 7 balls.
Commentary: Students should be able to correctly create drawings or sets of objects to match a quantity presented numerically.		

W4. Addition tasks - CCSS: K.OA.A.5 Number Sense: Structures, Flexibility and Fluency

3	2	1
4 correct	2 - 3 correct	0 - 1 correct.

Kindergarten: Midyear

W5. Subtraction tasks- K.OA.A.5 Number Sense: Structures, Flexibility and Fluency

3	2	1
4 correct	2 - 3 correct	0 - 1 correct.
Commentary: Students solve addition and subtraction problems within 5. Students might use a variety of strategies to do so, including using fingers, making drawings, using objects, or other. By the end of the year students should be able to solve these problems fluently without the need for counting, drawings, or objects.		

W6. Number Line: K.MD Number Sense: Number Lines

3	2	1
Both correct	One correct	None correct
Commentary: Students should begin to develop an understanding of number lines and the way that they are used to represent whole numbers under 20. In particular, they should begin to understand that consecutive numbers are separated by even spaces, and that the tick marks represent where a number lies on the number line. Some students will not recognize that the 6 has been skipped on this number line.		

Kindergarten: Midyear

Universal Screener for Number Sense

Interview Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language: □ English □ Spanish □ Other: _____

Verbal Counting	*score*
1. Counting to 30. (from 17, or 8 or 1 if necessary) *Notes:* □ *student counts fluently to 30 starting from 17: 3 pts* □ *student counts to 30, but not fluently or from any number: 2 pts* □ *student is able to count to 20, not 30: 1 pt* □ *student cannot count to 20: 0 pts*	
Numeral Reading	*score*
2. "Read these numbers." (7, 18, 12, 6, 20, 15, 10) *Notes:* ☐ *all correct:3 pts* ☐ *all under 10 correct: 2pts* ☐ *misidentifies number under 10: 1 pt*	
Counting and Cardinality	*score*
3. Count set of 12. *Notes:* ☐ *correct: 3 pts* ☐ *inconsistent: 2 pts* ☐ *does not demonstrate 1:1 correspondence: 1 pt*	
Addition and Subtraction	*score*
4. 6 + 2 *Notes:* ☐ *solves 6 + 2: 3 pts* ☐ *cannot solve 6 + 2, solves 4 + 2: 2 pts* ☐ *does not solve either: 1 pt*	
5. 6 - 2 *Notes:* ☐ *solves 6 - 2: 3 pts* ☐ *cannot solve 6 -2, solves 6 -1: 2 pts* ☐ *does not solve either: 1 pt*	
6. Solve 2 + 3 with materials *Notes:* ☐ *uses counters and solves accurately: 3 pts* ☐ *needs support: 2 pts* ☐ *does not demonstrate: 1 pt*	

Kindergarten: Midyear

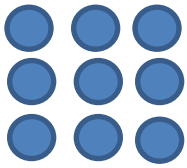
Universal Screener for Number Sense

Written Portion, *print 1 copy/student*

Name _____ Date _____

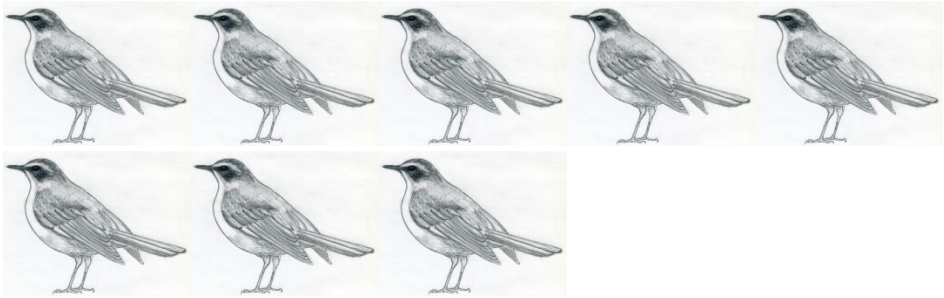
1. Write the numbers in the boxes as your teacher says them.

2. How many circles?



_____

How many birds? _____



3. Draw 7 balls.

Kindergarten: Midyear

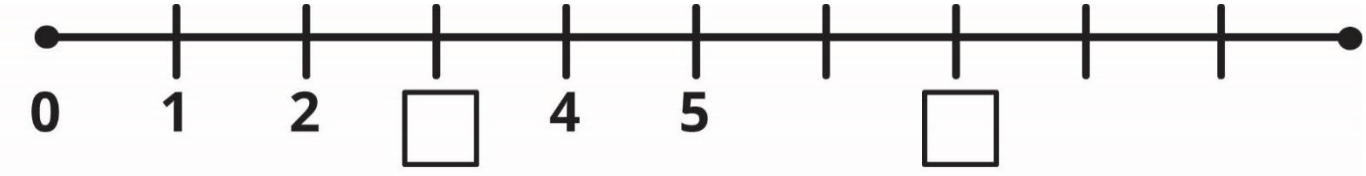
4. Solve these problems. Add.

4 + 1 = ☐ 2 + 0= ☐ 1 + 3 = ☐ 2 + 3 = ☐

5. Solve these problems. Subtract.

3 – 1 = ☐ 4 – 4 = ☐ 5 – 2 = ☐ 2 – 1 = ☐

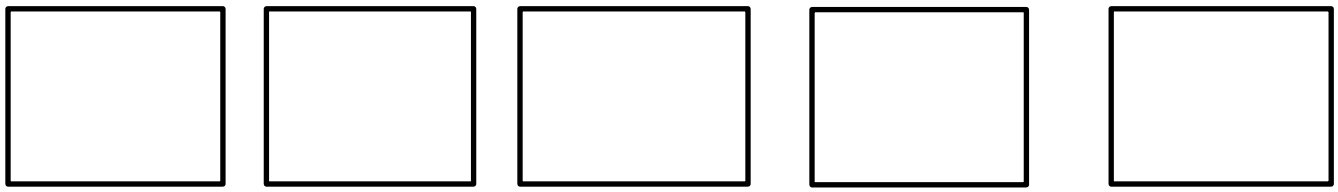
6. Number lines. What numbers go in the boxes?



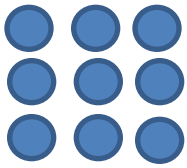
Kindergarten: Midyear

Nombre _____ Fecha _____

1. Escribe lo números en las cajas como el Maestro los dictara.

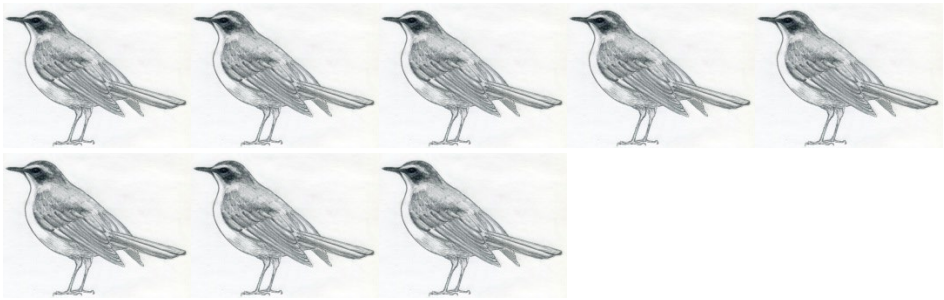


2. ¿Cuántos círculos?



_____

¿Cuántos pájaros? _____



3. Dibuja 7 pelotas.

Kindergarten: Midyear

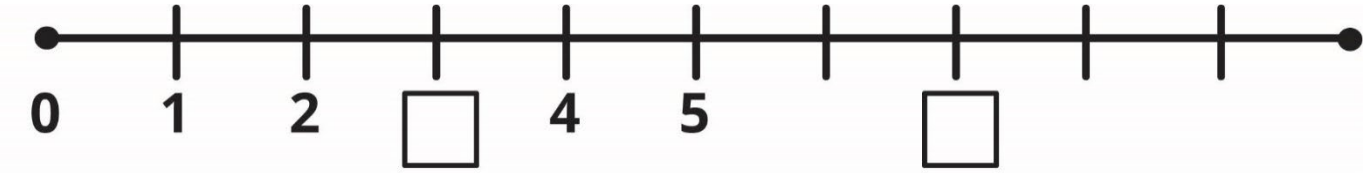
4. Resuelve estos problemas. Suma.

4 + 1 = ☐ 2 + 0= ☐ 1 + 3 = ☐ 2 + 3 = ☐

5. Resuelve estos problemas. Resta.

3 – 1 = ☐ 4 – 4 = ☐ 5 – 2 = ☐ 2 – 1 = ☐

6. Líneas numéricas. ¿Qué números corresponden en las cajas?



7	18	12	6
20	15	10	2 + 3

Kindergarten: Midyear Screener Cards

Grade 1: Midyear

Universal Screener for Number Sense

Instructions

Interview

Interviews should be conducted one-on-one with students. Do not provide paper and pencil or any materials other than those specified in the tasks.

Interviews can be done by sitting with a single student and working through all of the questions, or can be done one or two questions at a time. For example, teachers might find that they can quickly and easily assess counting by moving around the room to listen to students count and then, later, in a separate session, set up a table with the necessary materials and pull students one at a time to complete those tasks that use materials.

We encourage that the interviews be done by the primary teacher if possible since so much of the important information that comes from these tasks cannot be captured in a score.

Written Portion

The written portion of this assessment is best given in small groups or centers. Care should be taken to ensure that students are not given opportunities to collaborate on the assessment.

Pass the assessment out to all students and begin with the number writing tasks. This could be done as a whole group or with a small group at the teacher's discretion and doesn't have to be done at the same time as the remainder of the written tasks. Consider what will be best and most efficient for you.

Unlike the interview section, it is less important who manages the administration of the written portion. That is, it is appropriate that the written portion be administered by a paraeducator or volunteer.

Numeral Writing Have the students write the following numbers.

"Eight, three, ten, six, eleven, seventeen"

"Ocho, tres, diez, seis, once, diecisiete"

Fluency Tasks (formerly known as D tasks)

Please administer the fluency tasks via paper & pencil.

Note to Forefront users - enter point values as directed on scoring guide for fluency tasks. (not performance levels.) For example, if student correctly answers 4 questions correctly, enter "4." Forefront will convert this to performance level 3.

Materials: For the written portions of the assessment (not the interview), scratch paper and manipulatives familiar to the students can be made available for the students to use if they choose to do so.

Do not provide paper or pencil, or any manipulatives for the interview tasks except as explicitly mentioned.

Grade 1: Midyear

Universal Screener for Number Sense

Detailed Script and Rubrics, *print 1 copy/test administrator*

Number Word Sequences: 1.NBT.A.1 Number Sense: Forward Number Word Sequence

1. **"Start counting at 96 and I will tell you when to stop."** (Stop at 103) If student counts fluently for this task score as a 3 and proceed to the next task.
   - If student is not fluent with the first task, say, **"Start counting at 66 and I will tell you when to stop."** (stop at 72). If student counts fluently, continue to the next task.
   - If the student does not count fluently from 66 – 72, say, **"Start counting from 12."** Allow the student to count through 31.

3	2	1	0
Student is able to count from 96 – 103 on the first attempt without long pauses or significant self-corrections	Student is less than fully fluent with a count from 96 – 103. Student counts fluently from 66 – 72.	Student is less than fluent with the counts from 96 – 103 and 66 – 72. Student counts fluently from 12 – 32.	Student is less than fluent with each of the tasks.
Commentary: Proficient students are able to fluently count forward crossing 100 (but not necessarily to 120) starting from any number. Fluency that was developed in kindergarten needs to be practiced and further developed in first grade. Reciting the number word sequence is a skill that underlies conceptual development, and like any skill without regular usage it will be lost. Even students who at one time might have demonstrated fluency with these sequences can lose them without regular opportunities to practice.			

Number Word Sequences: 1.NBT.A.1 Number Sense: Backward Number Word Sequence

2. **"Now we are going to count backward, like 3, 2, 1. Start counting back from 18 and I will tell you when to stop."** If student is unsuccessful, say, **"Count back from 12."**

3	2	1
Student is able to fluently count down from 18.	Student can count back from 12, but makes mistakes or lacks fluency when counting back from 18 (pauses, or makes self-corrections).	Student is unable to count back from 12.
Commentary: The ability to count back is not only one that helps develop fluency and flexibility with the number sequence but is a basic skill that is necessary for developing fluency with subtraction. Students should be provided with ample opportunities to develop this skill which will support their developing fluency with subtraction under 20.		

Grade 1: Midyear

Numeral Identification: 1.NBT.A.1 Number Sense: Numeral Identification

3. "**Read these numbers.**" Show cards one at a time in the order shown here. (13, 100, 31, 70, 30, 12)

3	2	1
Student reads all of the number cards with fluency and certainty.	Student reads all numbers correctly, but without fluency or with uncertainty. Might include self-corrections or pauses or seeking support.	Student makes mistakes with one or more numbers when reading. Includes issues with reversals (reads 31 for 13) and trouble with "teen" versus "ty" (e.g. confuses pronunciation of 13 and 30)
Commentary : Proficient students read numbers to 100. Content of the second half of 1st grade begins to work extensively with larger numbers, so this skill becomes important for accessing the instruction and instructional materials. Working with students to learn to read numbers is best done in short one-on-one or small group sessions. This is a great place to ask for parent support. **Language considerations:** For students who speak more than one language, whenever possible assess the student in both their home language as well as the language of instruction. Many students who come to English as a second language, or who have speech and/or hearing issues have troubles not only pronouncing the difference between 13 and 30 (and other similar numerals), but sometimes cannot *hear* the difference either. This is best remedied with targeted instruction.		

Problem Solving: Addition and Subtraction 1.OA.A.1 Number Sense: Covered Tasks - Addition

4. Take 8 counters of one color. **"I have 8 counters here."** (Allow student to see counters, but do not allow the student to count the counters.) **"I am going to cover these up."** Cover them so that they are not visible, but still in front of the student. Take 4 more counters. **"Now I am going to put 4 more counters under here."** Allow student to see the 4 counters, but not count them. Put the 4 counters under the cover with the 8. **"How many counters are there altogether?"**
   - If the student answers incorrectly, present the task again. **"Let's take another look. I have 8 here. How many are there?"** (Student should confirm that there are 8 counters under the cover.) **"Now I am putting 4 more. How many are there altogether?"**

3	2	1
Student is able to solve the problem on a first attempt.	Student is able to solve the problem on a second attempt. Or makes a self-correction when prompted to explain their thinking. If the student solves incorrectly, but then, without any prompting from the teacher, attempts the problem again and arrives at the correct answer, score as a level 3.	Student is unable to solve the problem.
Commentary: Proficient students solve result unknown addition problems crossing 10 using a counting or other strategy when presented in the context of materials. Teachers will want to pay close attention to the strategies the students use and especially the use of fingers. Does the student solve the problem (or attempt to solve the problem) by counting from one? Does the student count on (e.g. starting from 8, "8, 9, 10, 11, 12") Does the student use a make-a-ten strategy? It is especially important to notice the strategies of students who are unsuccessful. Do they say the just "know it?" Do they have strategies for using their fingers? Do they arrive at a wrong answer due to an error in counting? Etc.		

Grade 1: Midyear

Foundations of Place Value: 1.NBT.B.2 Number Sense: Place Value – Tens and Ones

5. Place about 100 sticks, some bundled together in set of 10s, about 20 of loose ones. Show the student a bundle of 10 sticks grouped together with a rubber band. **"Each of these bundles has 10 sticks."** Put the bundle back onto the table. "**Please give me 30 of the sticks**."
   - If student is unable to create a set of 30 sticks, score at level 0 and end this part of the assessment.
   - If the student solves the task by using a combination of 10s and individual sticks to get to 30 take note and demonstrate that the problem can be solved with 3 tens (either by bundling or replacing the loose sticks) and continue with the next part of this task.

   Leave the 3 bundles of ten sticks in front of the student. From the remaining sticks, place another bundle of ten and 4 loose sticks in front of the student. Leave all the sticks visible in front of the student. **"I am putting 10 here."** (slide a bundle of ten next to the 30) **Now I am putting 4 more.** (slide 4 loose sticks next to the others) **"How many sticks are there now?"** Leave the sticks on the table (all uncovered) in front of the student.

3	2	1	0
Student adds 10 and 4 ones to the 30 without needing to recount the 30. (e.g. "30, 40, 41, 42, 43, 44") or other more efficient strategy.	Student recounts original 30 and counts tens and ones to solve the task (e.g. 10, 20, 30, 40, 41, 42, 43, 44).	Student makes the set of 30 but is unable to arrive at 44.	Student is unable to make a set of 30.
Mid-Year Expectation: Proficient students recognize that materials grouped in tens can be counted by ten to arrive at any multiple of 10 under 100. This task is designed to reveal a number of things: Does the student know that they can count sets of ten sticks by counting by ten? Once the set of 30 is established, is the student able to operate on the set of 30 without the need for recounting? Can the student switch from a count of 10s to a count of ones? Listen for students who, after counting the 40, continue counting by tens even though they are now counting individual sticks. This ability to flexibly switch back and forth between tens and ones is an important cognitive milestone expected in 1st grade that prepares students for the work of 2nd grade.			

Grade 1: Midyear

Universal Screener for Number Sense

Standards Alignment and Scoring Guides for Written Tasks, *print 1 copy/test administrator*

W1. Number Writing: 1.NBT.1 Number Sense: Numeral Writing

(Eight, three, ten, six, eleven, seventeen)

3	2	1
Student writes numbers to 20. (occasional reversals allowed). Reversals are things like this three: Ɛ When digits are out of place (e.g, student writes 71 instead of 17) score as incorrect.	Student writes numbers under 10 accurately. (occasional reversals allowed)	Unable to accurately write all numbers under 10. Student might, for instance substitute a 2 for a 5 or, make completely unrecognizable marks
Commentary: Students should be able to write numbers to 20 fluently by this point in the year. Those who are still confusing this will have trouble communicating their thinking, responding to tasks, and accessing instruction. For students who are still struggling in this area attention and appropriate supports should be put in place to accelerate the learning in this area. NOTE: It is also good to pay attention to the ways that students write numbers to ensure that they use the correct stroke sequence (i.e. the number 0 should be started at the top of the number).		

W2. Make Drawing to show 12-4: 1.OA.A.2 Number Sense: Cardinality

3	2	1
Student makes a drawing that shows a subtractive situation. This could be that they have drawn 12 of something and crossed out 4 or otherwise shown that they have been taken away. Number lines with jumps back, or other representations that clearly show a subtractive idea should all be accepted.	Student gives a correct solution, but the drawing does not show subtraction (e.g. student draws eight dots, puts a subtraction sign, then draws 4 dots) Or the drawing approximates the situation and clearly shows a subtractive situation but the answer given is incorrect (but within the range of 6-10).	Student's representation does not show a subtractive situation and the answer given is incorrect.
Commentary: This task is a complement to the interview subtraction task. It is critical that first grade students are conceptualizing subtraction when it is presented symbolically. Drawings can help students demonstrate how they conceptualize a topic, but drawings also support students in communicating their understanding with others. This is a skill that can and should be taught and practiced.		

W3. Make a drawing to show 7 + 4: 1.OA.A.2 Number Sense: Cardinality

3	2	1
Student makes a drawing that represents the addition of 7 things and 4 things and gives the correct response.	Student gives a correct response, but does not create a drawing that matches the situation. OR student makes a correct drawing, but miscounts that leads to an answer that is off by one.	Student does not create a drawing that matches the situation and does not provide a correct solution.
Commentary: Students need to connect symbolic representations to quantitative representations of situations. This is an important foundation for understanding operations, but also for communicating reasoning.		

Grade 1: Midyear

Universal Screener for Number Sense

Fluency Tasks Scoring Guide, *print 1 copy/test administrator*

F1. Addition Problems: 1.OA.C.6 Number Sense: Structures, Flexibility and Fluency

3	2	1	0
4 correct	2 – 3 correct	1 correct	0 correct
Commentary: Students will use a variety of strategies to solve these problems. Observe strategies carefully to determine next steps for instruction.			

F2. Subtraction Problems: 1.OA.C.6 Number Sense: Structures, Flexibility and Fluency

3	2	1	0
4 correct	2 – 3 correct	1 correct	0 correct
Commentary: Students will use a variety of strategies to solve these problems. Observe strategies carefully to determine next steps for instruction.			

F3. Addition – unknowns in different positions 1.OA.D.8

Number Sense: Structures, Flexibility and Fluency

3	2	1	0
4 correct	2 – 3 correct	1 correct	0 correct
Commentary: Students will use a variety of strategies to solve these problems. Observe strategies carefully to determine next steps for instruction.			

F4. Number Lines 1.MD.A Number Sense: Number Lines

3	2	1	0
4 correct	2 – 3 correct	1 correct	0 correct
Commentary: Although number lines are not specifically called out in the Common Core standards, they are important for first graders to understand and be able to use. The standard which is referenced here mentions the iteration of length units, which is exactly what these number lines seek to assess. Students should understand that numbers on a number line are each separated by equivalent lengths between them. Number lines, although somewhat intuitive, are not spontaneously understood by all students. Students need to be taught to use them. This work lays important foundations for the work of 2nd grade where number lines are explicitly mentioned in the standards.			

Grade 1: Midyear

Universal Screener for Number Sense

Quick Script, *print 1 copy/test administrator*

Number Word Sequences

1. "Start counting at 96 and I will tell you when to stop." (Stop at 103) If student counts fluently for this task score as a 3 and proceed to the next task.

- If student is not fluent with the first task, say, **"Start counting at 66 and I will tell you when to stop."** (stop at 72). If student counts fluently, continue to the next task.
- If the student does not count fluently from 66 – 72, say, **"Start counting from 12."** Allow the student to count through 31.

2. "Now we are going to count backward, like 3, 2, 1. Start counting back from 18 and I will tell you when to stop." If student is unsuccessful, say, **"Count back from 12."**

Numeral Identification

3. "**Read these numbers."** Show number cards one at a time. (13, 100, 31, 70, 30, 12)

Problem Solving: Addition and Subtraction

4. Take 8 counters of one color. **"I have 8 counters here."** (Allow student to see counters, but do not allow the student to count the counters.) **"I am going to cover these up."** Cover them so that they are not visible, but still in front of the student. Take 4 more counters. **"Now I am going to put 4 more counters under here."** Allow student to see the 4 counters, but not count them. Put the 4 counters under the cover with the 8. **"How many counters are there altogether?"**

- If the student answers incorrectly, present the task again. **"Let's take another look. I have 8 here. How many are there?"** (Student should confirm that there are 8 counters under the cover.) **"Now I am putting 4 more. How many are there altogether?"**

Foundations of Place Value

5. Place about 100 sticks, some bundled in 10s, about 20 of loose ones. Show the student a bundle of 10 sticks. **"Each of these bundles has 10 sticks."** Put the bundle back onto the table. "**Please give me 30 of the sticks**."

- If student is unable to create a set of 30 sticks, score at level 0 and end this part of the assessment.
- If the student solves the task by using a combination of 10s and individual sticks to get to 30 take note and demonstrate that the problem can be solved with 3 tens (either by bundling or replacing the loose sticks) and continue with the next part of this task.

Leave the 3 bundles of ten sticks in front of the student. From the remaining sticks, place another bundle of ten and 4 loose sticks in front of the student. Leave all the sticks visible in front of the student. **"I am putting 10 here."** (slide a bundle of ten next to the 30) **Now I am putting 4 more.** (slide 4 loose sticks next to the others) **"How many sticks are there now?"** Leave the sticks on the table (all uncovered) in front of the student.

For numeral dictation, written task #1 - Numeral Writing

"Eight, three, ten, six, eleven, seventeen"

Grade 1: Midyear

Universal Screener for Number Sense

Quick Script, *print 1 cop*

Number Word Sequences

1. "Comienza a contar del 96 y yo te avisare cuando parar." (Stop at 103) If student counts fluently for this task score as a 3 and proceed to the next task.

- If student is not fluent with the first task, say, **"Comienza a contar del 66 y yo te avisare cuando parar."** (stop at 72). If student counts fluently, continue to the next task.
- If the student does not count fluently from 66 – 72, say, **"Comienza a contar del 12."** Allow the student to count through 31.

2. "Ahora contaremos para atrás, como 3, 2, 1. Comienza a contar para atrás desde el 18 y yo te avisare cuando parar." If student is unsuccessful, say, **"Cuenta para atrás desde el 12."**

Numeral Identification

3. "**Lee estos números."** Show number cards one at a time. (13, 100, 31, 70, 30, 12)

Problem Solving: Addition and Subtraction

4. Take 8 counters of one color. **"Yo tengo 8 contadores aquí."** (Allow student to see counters, but do not allow the student to count the counters.) **"Yo voy a cubrir estos."** Cover them so that they are not visible, but still in front of the student. Take 4 more counters. **"Ahora voy a poner 4 contadores más debajo."** Allow student to see the 4 counters, but not count them. Put the 4 counters under the cover with the 8. **"¿Cuántos contadores hay en total?"**

- If the student answers incorrectly, present the task again. **"Vamos a repasar esto nuevamente. Yo tengo 8 aquí. ¿Cuántos hay?"** (Student should confirm that there are 8 counters under the cover.) **"Ahora estoy poniendo 4 más. ¿Cuántos hay todos juntos?"**

Foundations of Place Value

5. Place about 100 sticks, some bundled in 10s, about 20 of loose ones. Show the student a bundle of 10 sticks. **"Cada uno de estos manojos tiene 10 palos."** Put the bundle back onto the table. "**Por favor dame 30 de esos palos**."

- If student is unable to create a set of 30 sticks, score at level 0 and end this part of the assessment.
- If the student solves the task by using a combination of 10s and individual sticks to get to 30 take note and demonstrate that the problem can be solved with 3 tens (either by bundling or replacing the loose sticks) and continue with the next part of this task.

Leave the 3 bundles of ten sticks in front of the student. From the remaining sticks, place another bundle of ten and 4 loose sticks in front of the student. Leave all the sticks visible in front of the student. **"Yo estoy poniendo 10 aquí."** (slide a bundle of ten next to the 30) "**Ahora estoy poniendo 4 más."** (slide 4 loose sticks next to the others) **"¿Cuántos palos hay ahora?"** Leave the sticks on the table (all uncovered) in front of the student.

For numeral dictation, written task #1 - Numeral Writing

"Ocho, tres, diez, seis, once, diecisiete"

Grade 1: Midyear

Universal Screener for Number Sense

Interview Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language: □ English □ Spanish □ Other: _____

Number Word Sequences	*score*
1. "Start counting at 96 and I will tell you when to stop." (Stop at 103) if necessary: **"Start counting at 66 and I will tell you when to stop."** (stop at 72). if necessary: **"Start counting from 12."** Allow the student to count through 31. *Notes:* □ *student counts fluently from 96 to 103: 3 pts* □ *student less than fully fluent with a count from 96 – 103 but counts fluently from 66 – 72: 2 pts* □ *student is less than fluent with the counts from 96 – 103 and 66 – 7 but counts fluently from 12 – 32: 1 pt* □ *less than fluent with all tasks: 0 pts*	
2. "Now we are going to count backward, like 3, 2, 1. Start counting back from 18 and I will tell you when to stop." If student is unsuccessful, say, **"Count back from 12."** *Notes:* □ *student fluently counts down from 18: 3 pts* □ *student counts back from 12, but makes mistakes or lacks fluency counting back from 18: 2 pts* □ *student cannot count back from 12: 1 pt*	
Numeral Identification	*score*
3. "Read these numbers." *13___ 100___ 31__ 70___ 30___ 12___* *Notes:* ☐ *identifies fluently: 3 pts* ☐ *identifies without fluency: 2 pts* ☐ *one or more mistakes: 1 pt*	
Problem Solving: Addition and Subtraction	*score*
4. 8 + 4 *Notes:* ☐ *correct (independent): 3 pts* ☐ *correct on 2nd attempt (with prompt)* ☐ *Incorrect: 1 pt*	
Foundations of Place Value	*score*
5. 30 + 10 + 4 *Notes:* ☐ *student adds fluently: 3 pts* ☐ *student recounts 30 and adds 10s and 1s: 2 pts* ☐ *student makes set of 30, cannot get to 44: 1 pt* ☐ *student cannot make 30: 0 pts*	

Grade 1: Midyear

Universal Screener for Number Sense

Written Component, *print 1 copy/student*

Name _____ Date _____

1. Your teacher will tell you to write some numbers. Write them on the lines.

a. _____ b. _____ c. _____

d. _____ e. _____ f. _____

2. Make a drawing to show how you can solve 12 – 4 = ☐

3. Make a drawing to show how you can solve 7 + 4 = ☐

Grade 1: Midyear

Universal Screener for Number Sense

Fluency Tasks, *print 1 copy/student*

F1. Addition problems:

3 + 4 =_____ 5 + 3 =_____

7 + 2 =_____ 8 + 4 =_____

F2. Subtraction problems:

8 - 1 =_____ 7 – 3 =_____

12 – 4=_____ 9 – 7 =_____

F3. Algebraic thinking:

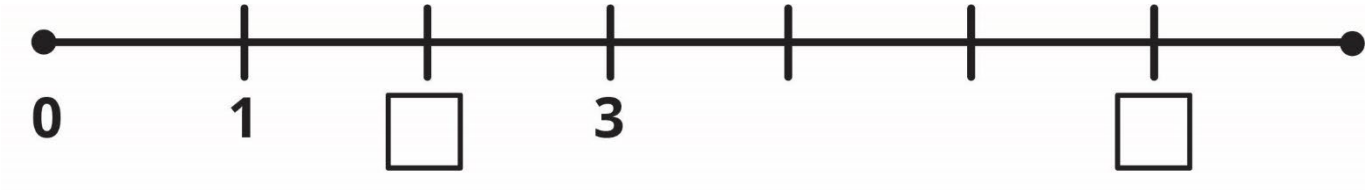
3 + ___ = 5 ____ + 3 = 4

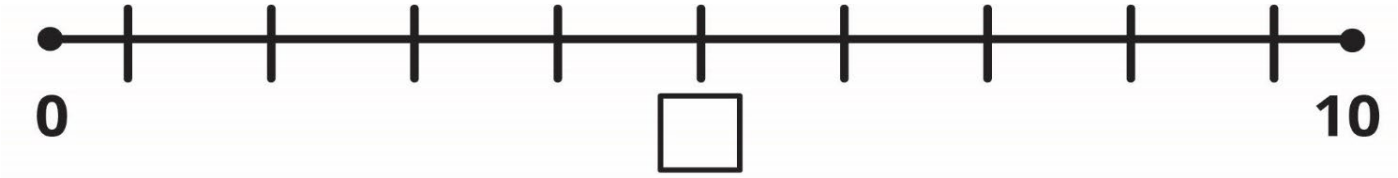
5 - _____ = 1 ____ = 4 + 1

Grade 1: Midyear

F4. Number lines

What numbers go in the boxes?





Grade 1: Midyear

Nombre _____ Fecha _____

1. Tu maestro te pedirá que escribes unos números. Escríbelos en las líneas.

b. _____ b. _____ c. _____

e. _____ e. _____ f. _____

2. Haz un dibujo para demostrar como resuelves 12 – 4 = ☐

3. Haz un dibujo para demostrar como resuelves 7 + 4 = ☐

Grade 1: Midyear

Universal Screener for Number Sense

Fluency Tasks, *print 1 copy/student*

F1. Problemas de adición:

3 + 4 =_____ 5 + 3 =_____

7 + 2 =_____ 8 + 4 =_____

F2. Problemas de sustracción:

8 - 1 =_____ 7 – 3 =_____

12 – 4=_____ 9 – 7 =_____

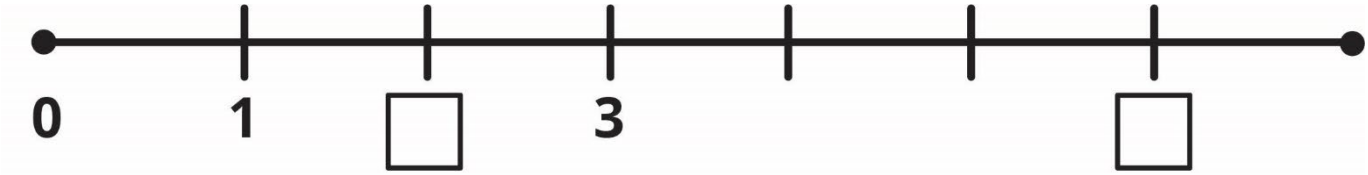
F3. Pensamiento Algebraico:

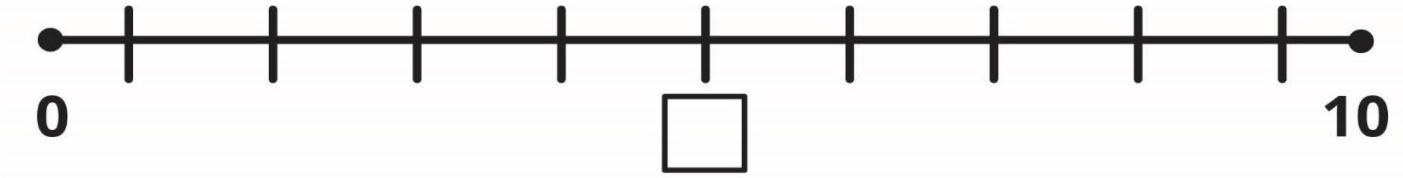
3 + ___ = 5 ____ + 3 = 4

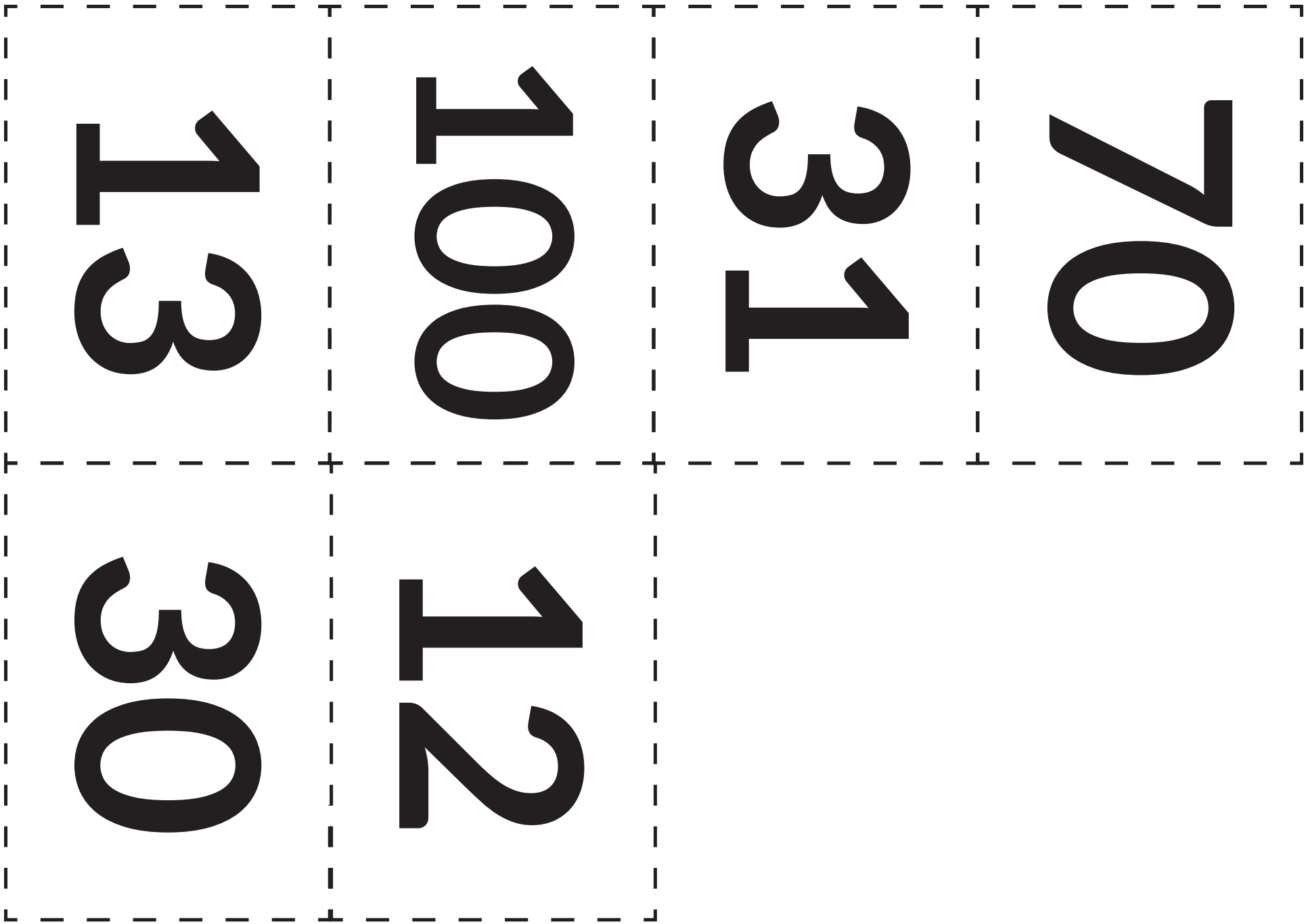
5 - _____ = 1 ____ = 4 + 1

Grade 1: Midyear

F4. Líneas numéricas:







Grade 2: Midyear

Universal Screener for Number Sense

Instructions

Interview

Interviews should be conducted one-on-one with students. Do not provide paper and pencil, and only provide materials as directed.

Interviews can be done by sitting with a single student and working through all of the questions or can be done one or two questions at a time. For example, teachers might find that they can quickly and easily assess counting by moving around the room to listen to students count and then, later, in a separate session, set up a table with the necessary materials and pull students one at a time to complete those tasks that use materials.

We encourage that the interviews be done by the primary teacher if possible since so much of the important information that comes from these tasks cannot be captured in a score.

Written Portion

The written portion of this assessment can be administered either in whole or small group.

- Student should be directed to work independently on the assessment
- Manipulatives and tools that are familiar to the students may be made available
- The written portion of this assessment is intended to take about 30 minutes to completed. Do not give more than 60 minutes.

Numeral Writing: Dictate the following numbers and have the students write them as the first part of the written test. This task can be administered whole class if the teacher chooses. There are no observation protocols to accompany this part of the assessment.
"thirty-three, seventy, one hundred ten, one hundred fifty, five hundred, eight hundred eighty"
"treinta y tres, setenta, ciento diez, ciento cincuenta, quinientos, ocho cientos ochenta"

Fluency Tasks (formerly known as D Tasks)

The fluency tasks should be administered via paper & pencil. They can be done in the same day with the Written Tasks, or separately. The Fluency Tasks are estimated to take about 20 minutes.

Note to Forefront users - Enter point values as directed on scoring guide for fluency tasks. (not performance levels.) For example, if student correctly answers 4 questions correctly, enter "4." Forefront will convert this to performance level 3.

Materials for Written and Fluency Tasks : For the written portions of the assessment, scratch paper and manipulatives familiar to the students can be made available for the students to use if they choose to do so.

Grade 2: Midyear

Universal Screener for Number Sense

Detailed Script and Rubrics, *print 1 copy/test administrator*

Number Word Sequences: 2.NBT.A.2 Number Sense: Forward Number Word Sequences

1. **"Count forward starting at 198 and I will tell you when to stop."** (Stop at 202)
   - If student is less than fully fluent with count to 202, say, **"Thanks. This time start counting at 97 and I will tell you when to stop."** (stop at 112)

3	2	1	0
Student is able to count from 198 – 202 with a reasonable degree of fluency and confidence.	Student is able to count from 198 – 202, but has pauses or self-corrections, and student is able to count fluently from 97 – 112.	Student does not count correctly from 198 – 202, but is able to correctly count from 97 – 112 (can be less than fluent and have self-corrections)	Student does not accurately complete either count.
Commentary: Proficient students count forward by ones from any number under 1000. Counting is foundational for developing understanding of the place value system and for addition and subtraction. When students score zero on this task, the assessor should do more diagnostic assessment to ascertain what the student can do. In particular, checking to ensure that a student can fluently count through the teen numbers and up to thirty is absolutely critical. For students who are still struggling with their number word sequences under 100, interventions should be put into place.			

Numeral Identification: 2.NBT.A.3 Number Sense: Numeral Identification

2. **"Read these numbers."** Present cards to student one at a time.

550 **111** **212**

If the student says something like, "five-fifty" ask the student if they have another way to say this. Correct answers are: five hundred fifty, one hundred eleven (accept "a-hundred eleven") and two hundred twelve."

3	2	1
Student read the numbers accurately on first attempt.	Student reads the numbers, but makes self-corrections or reads them correctly on a second attempt.	Student reads at least one number incorrectly.
Commentary: This task samples this skill using only three numbers. For students who score at a level 1 on this task further assessments should be done to determine which numbers (or range of numbers) still need to be learned and/or practiced. **Note:** Many students will insert an "and" after the hundreds (e.g. five hundred *and* twelve). Although some math educators will insist that the word "and " should be reserved for reading decimal numbers, colloquially many people insert an "and" in this way. For this assessment, do not count the response as incorrect if a student inserts an "and" after the hundred. **Language Considerations:** It is important that students are able to read numbers in the language of instruction. However, when students have the ability to read numbers in another language this is a significant asset that should be recognized. Learning to read numbers in a second language should be approached differently, by helping the student to make connections to the other language. For this reason, for students who are bilingual, it is helpful to assess in both languages. For students who are bilingual it is also important not to assume that they are able to read these numbers in their first language.		

Grade 2: Midyear

Mental Subtraction - Subtracting Ones: 2.NBT.B.5 Number Sense: Place Value-Mental Math

3. **Present the card 81 - 2. Read this card. (**Make sure that the student has read it accurately. Correct the student if they do not.) **"Solve this problem."** If it is not obvious, ask, **"How did you work it out?"** (Teacher may prompt student to make a second attempt)

3	2	1
Student solves the problem accurately on first attempt.	Student solves problem, but makes self-corrections in the process. (Teacher might ask student to solve again if there is a minor counting error.)	Student is unable to solve problem.
Commentary: This problem is constructed to prompt a count back. If a student attempts to use an algorithm (often drawn with a finger on the table), it should be noted, and if the student is able to use that method and arrive at a correct answer, score the response as a three, but ask if they have another way to solve this problem. A count back or "jump back" method is the preferable method for solving this problem, and students who are truly making sense of this problem will normally choose, apply that strategy rather than to do the tedious regrouping necessary for applying a traditional algorithm.		

Contextualized Addition: CCSS: 2.NBT.5 Number Sense: Place Value – Tens and Ones

4. Place a strip of 10 on the table. **"How many dots do you think are here?"** If student does not answer 10, tell them that there are 10. Allow the student to count the 10 dots. Place a set of 4 dots next to the 10. **"How many are there now?"** (student should automatically answer 14 without needing to count.)
   - If the student starts to count the ten interrupt them and remind them that there are 10 in each strip. If the student persists in counting the 10 to solve the 10 + 4 problem, see rubric for a score of 1 and proceed to problem 5.

   Cover the 14 dots. Put 5 strips of 10 next to the cover. **"I have 50 dots here. I am going to put these with the 14."** Slide the 5 ten strips under the cover. **"How many dots are there under here now?"**
   - If student is unsuccessful, remove the 50 from under the cover and leave them on the table (with the 14 still under the cover) and prompt the student to solve the problem again.

3	2	1
Student is able to solve the problem with all the materials covered.	Student is able to solve the problem with the 5 strips of 10 visible using a count by 10 method, but unable to solve while they are covered.	Student is unable to respond correctly or the student attempts to count all dots by ones. If the student counts all to determine the original 14 dots the response should be scored as 1 and attention needs to be given to help the student understand 10 as a unit.
Commentary: Proficient students mentally solve problems which involve adding any number of 10s to a non-ten number under 100. This ability to use 10s and ones mentally to solve problems is both an indicator of preparedness for the more complex work with larger numbers that comes in the second half of the school year.		

Grade 2: Midyear

Comparison: 2.MD.B.5 Number Sense: Problem Solve - Comparisons

5. **"The top rectangle here is 7 units long. The rectangle on the bottom is 11 units. How much longer is the bottom rectangle than the top rectangle?"**

   Possible alternative phrasings:
   Ask they student, **"Which rectangle is longer?"** after they answer that the bottom one is longer say, **"That's right. How much longer?"**
   "What is the difference in the length of the top rectangle and the bottom one?"

3	2	1
Student recognizes the problem as a comparison problem and solves using the numbers. Score as a 3 even if there is a slight calculation error (off by not more than 1.)	A variety of behaviors will be scored as a 2. - Student needs a rephrasing of the problem in order to conceptualize that this is a comparison problem and solve. - Student sees this as a comparison problem, but does not "numerize" the situation and attempts to count the difference without paying attention to the numbers. These students will often be seen using a finger to attempt to count the space between the two rectangles. Please note that even if the student happens to accurately answer 4, but has not shown that they are attending to the numbers given, a score of 2 should be given. - Student subtracts (or attempts to add up), but miscalculates. (e.g. "11 – 7; that is 5.")	Student is unable to conceptualize the idea of the comparison. They might answer something like, "This one goes to 11."
Commentary: Understanding comparison problems represents an important developmental marker in a student's understanding of subtraction. This problem appears to be both linguistic and conceptual. Sometimes clearly language is the issue in understanding this problem. The primary purpose of this problem is to see if the student can conceptualize the idea of difference and comparison, so feel free to reword this one if you think that the wording is the issue. These difficulties with the language of difference problems is also important information. Refrain from any gesturing beyond simply pointing to the rectangles.		

Grade 2: Midyear

Universal Screener for Number Sense

Standards Alignment and Scoring Guides for Written Tasks, *print 1 copy/test administrator*

W1. Number writing: 2.NBT.A.3 Number Sense: Numeral Writing

Have the students write the following numbers: 33, 70, 110, 150, 500, 880

3	2	1
All correct (without any numbers written backward)	Student makes one mistake (or more than one number has reversals but the number is in essence correctly constructed.)	Fewer than 5 numbers correct
Commentary: Most students who might have been prone to writing numbers backwards in the past will have corrected this by now. However, for those students for whom this issue persists, it is time to make sure that they are aware and to hold them accountable for writing numbers correctly. It is also good to pay attention to the ways that students write numbers to ensure that they use the correct stroke sequence (i.e. the number 0 should be started at the top of the number).		

W2. Combinations of 13: 2.OA.B.2 Number Sense: Structures, Flexibility and Fluency

For scoring this problem count specific combinations only once, that is, 3 + 10 and 10 + 3 counts as one combination. Therefore, 0 + 13 does not count for a point since it is given in the example. This leaves 6 possible combinations.

3	2	1
Student is able to generate 6 combinations. Ideally the student uses a systematic method for doing so. (e.g. 1 + 12, 2 + 11, etc.)	Student generates more than 2 combinations and fewer than 6.	Student generates 2 or fewer accurate combinations.
Commentary: Given paper and pencil and materials if necessary. Students should be able to create all the combinations that add to 13 and other numbers under 20. This is an attribute of fluency that is worth practicing. Students who are unable to name these combinations should be assessed more diagnostically (e.g. AVMR Structuring Numbers).		

Grade 2: Midyear

W3. Subtraction with drawing 22 -4: 2.NBT.B.5 Number Sense: Draw and Solve Subtraction

	2	1
Student accurately answers 18 and makes a drawing that matches and explains the answer. Drawings should accurately represent the 22 and show clearly the subtraction of 4. This could be a simple take away of 22 discrete dots, tens and ones drawings, number lines, etc. If the student draws 22 dots and then 4 dots then there must be some indication of the relationship between the two sets. Is it representing a difference model, a count back? If not, and the drawing could also represent 22 + 4, then it is not a 3.	Student gives a response that shows procedural understanding, but the language and drawing do not reveal an understanding of why the procedure works as it relates to tens and ones. It is possible that a student who scores a 2 could give a solution that is slightly incorrect. If the student says, for example, "I know that 22 is the same as 10 + 12 and 12 – 4 is 7, so the answer is 17." This demonstrates an understanding of place value that is at the heart of this question. **If the student answers 22, it should be scored as a 1.**	Student does not provide an accurate solution, and explanation does not reveal conceptual understanding.
Commentary: Students by the Midyear of 2nd grade should have the ability to solve addition and subtraction problems that involve tens and ones with decomposing tens. They should also be able to explain how this works using words and visual models. These might include place value materials (base-ten blocks, bundled sticks, etc.) If the student is able to solve and explain their thinking using materials, but cannot yet make a drawn representation to explain their thinking this should be scored as a two.		

W4. Subtraction with drawing 34 -18: 2.NBT.B.5 Number Sense: Draw and Solve Subtraction

3	2	1
Drawings should accurately represent the 34 and show clearly the subtraction of 18. The drawing has a representation of tens and ones. If the student has drawn 34 things that are not grouped into 10s this should be scored as a 2. If the student draws 34 and also 18, there needs to be some indication of the subtractive relationship (e.g. difference model). If the same drawing could also be seen as 34 + 18, but the answer is correct, score as a 2.	Student gives a response that shows procedural understanding, but the language and drawing do not reveal an understanding of why the procedure works as it relates to tens and ones. It is possible that a student who scores a 2 could give a solution that is slightly incorrect. If for example the student says, for example, "I know that 34 is the same as 20 + 14 and 14 – 8 is 8, so the answer is 18." This demonstrates an understanding of place value that is at the heart of this question, but a mistake with the basic fact. If the student answers 24, that should be scored as a 1.	Student does not provide an accurate solution, and explanation does not reveal conceptual understanding. Students in this case might give the answer 24.
Commentary: Students by the Midyear of 2nd grade should have the ability to solve addition and subtraction problems that involve grouping and "ungrouping" tens. They should also be able to explain how this works using words and visual models. These might include place value materials (base-ten blocks, bundled sticks, etc.) If the student is able to solve and explain their thinking using materials, but cannot yet make a drawn representation to explain their thinking this should be scored as a two.		

Grade 2: Midyear

Universal Screener for Number Sense

Fluency Component Scoring Guide, *print 1 copy/test administrator*

Forefront Users: Enter the points earned (e.g. for F1 if students answer all 8 correctly, enter an 8)

Commentary on Fluency Tasks: As students engage with these fluency tasks, observe your students. Notice which students use fingers and how they use them. Which students choose to use paper and pencil? These tasks are not intended to be a comprehensive assessment of fluency. Students should apply their number sense in order to solve these problems, be that counting, using fingers, using strategies like make-a-ten, or quickly deriving the solution.

F1: Addition Fluency: 2.OA. B.2 Number Sense: Structures, Flexibility and Fluency

3	2	1	0
7 – 8 correct	5-6 correct	2-4 correct	0-1 correct

F2: Subtraction Fluency: 2.OA.B.2 Number Sense: Structures, Flexibility and Fluency

3	2	1	0
7-8 correct	5-6 correct	2-4 correct	0-1 correct

Commentary on Applied Place Value Tasks:

The ability of students to solve these addition and subtraction tasks demonstrates some understanding of place value. If a student is solving these problems mentally, that is a good indicator that they are on track in their development of applied place value.

F3: Applied place value; Subtraction: 2.NBT.B.5 Number Sense: Computation - Addition

3	2	1	0
3 correct	2 correct	1 correct	0 correct

F4: Applied place value; addition: 2.NBT. B.5 Number Sense: Computation - Subtraction

3	2	1	0
3 correct	2 correct	1 correct	0 correct

Commentary on number comparisons:

Number comparisons have repeatedly shown to be good indicators of overall understanding of the magnitude of numbers. Observe the students closely, if you see a student getting these incorrect, stop to talk to the student to see if it is an issue of confusion with the symbols. It is ok to review with students which symbol is which. What we want to assess here is whether they know which number bigger, not which symbol is which.

F5: Number comparisons: 2.NBT.A. 4 Number Sense: Magnitude and Comparison

3	2	1	0
3 correct	2 correct	1 correct	0 correct

F6: Number Lines: 2. NBT.B Number Sense: Number Lines

The number line tasks are designed to assess number sequences, place value, and number sense.

3	2	1
2 correct	1 correct	0 correct

F7: Number Lines: 2.NBT.A.2 Number Sense: Number Lines

3	2	1
3 correct	1-2 correct	0 correct

Grade 2: Midyear

Universal Screener for Number Sense

Quick Script, *print 1 copy/test administrator*

Number Word Sequences

1. "Start counting at 198 forward by ones and I will tell you when to stop." (Stop at 202)

If student is less than fully fluent with count to 202, say, **"Thanks. This time start counting at 97 and I will tell you when to stop."** (stop at 112)

Numeral Identification

2. "Read these numbers." Present cards to student one at a time. **(550, 111, 212)**

If the student says something like,"five-fifty" ask the student if they have another way to say this.

Mental Subtraction – Subtracting Ones

3. Present the card 81 - 2. **Read this card. (**Make sure that the student has read it accurately. Correct the student if they do not.) **"Solve this problem." "How did you work it out?"** Teacher may prompt student to make a second attempt, if they feel student might be able to correct answer.

Contextualized Addition

4. Place a strip of 10 on the table. Allow the student to count the 10 dots. Place a set of 4 dots next to the 10. **"How many are there now?"** (student should automatically answer 14 without needing to count.

If the student starts to count the ten interrupt them and remind them that there are 10 in each strip. If the student persists in counting the 10 to solve the 10+4 problem, see rubric for a score of 1 and proceed to problem 5).

Cover the 14 dots. Put 5 strips of 10 next to the cover. **"I have 50 dots here. I am going to put these with the 14."** Slide the 50 under the cover. **"How many dots are there under here now?"**

If student is unsuccessful, remove the 50 from under the cover and leave them on the table (with the 14 still under the cover) and prompt the student to solve attempt the problem again.

Comparison

5. "The top rectangle here is 7 units long. The rectangle on the bottom is 11 units. How much longer is the bottom rectangle than the top rectangle?"

Possible alternative phrasing: **"What is the difference in the length of the top rectangle and the bottom one?"**

Numeral Writing:

W1. Written Question #1 Read these numbers:

"thirty-three, seventy, one hundred ten, one hundred fifty, five hundred, eight hundred eighty"

Grade 2: Midyear

Universal Screener for Number Sense

Spanish Quick Script, *print 1 copy/test administrator*

Number Word Sequences

1. "Comienza a contar desde 198 hacia Adelante con incrementos de uno y yo te avisare cuando parar." (Stop at 202)

If student is less than fully fluent with count to 202, say, **"Gracias. Y esta vez comienza contando del 97 y yo ye avisare cuando parar."** (stop at 112)

Numeral Identification

2. "Lee estos números." Present cards to student one at a time. **(550, 111, 212)**

If the student says something like,"five-fifty" ask the student if they have another way to say this.

Mental Subtraction – Subtracting Ones

3. Present the card 81 - 2. **Read this card. (**Make sure that the student has read it accurately. Correct the student if they do not.) **"Soluciona este problema." "Como lo solucionaste?"** Teacher may prompt student to make a second attempt, if they feel student might be able to correct answer.

Contextualized Addition

4. Place a strip of 10 on the table. Allow the student to count the 10 dots. Place a set of 4 dots next to the 10. **"Cuántos hay ahora?"** (student should automatically answer 14 without needing to count.

If the student starts to count the ten interrupt them and remind them that there are 10 in each strip. If the student persists in counting the 10 to solve the 10+4 problem, see rubric for a score of 1 and proceed to problem 5).

Cover the 14 dots. Put 5 strips of 10 next to the cover. **"Yo tengo 50 puntos aquí. Los voy a poner con los 14."** Slide the 50 under the cover. **"Cuántos puntos están debajo de aquí ahora?"**

If student is unsuccessful, remove the 50 from under the cover and leave them on the table (with the 14 still under the cover) and prompt the student to solve attempt the problem again.

Comparison

5. "El rectángulo de aquí arriba es 7 unidades de largo. El rectángulo de abajo es de 7 unidades. ¿Qué más largo es el rectángulo de abajo que el rectángulo de arriba?"

Possible alternative phrasing: **"Cual es la diferencia en longitud del rectángulo de arriba y el de abajo?"**

Numeral Writing:

W1. Written Question #1 Read these numbers:

"treinta y tres, setenta, ciento diez, ciento cincuenta, quinientos, ocho cientos ochenta"

Grade 2: Midyear

Universal Screener for Number Sense

Interview Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language: □ English □ Spanish □ Other: _____

Number Word Sequences	*score*
1. "Count forward starting at 198 and I will tell you when to stop." (Stop at 202) if necessary: **"This time start counting at 97 and I will tell you when to stop."** (stop at 112) *Notes:* □ *student counts fluently from 198 to 202: 3 pts* □ *student less than fully fluent with a count from 198-20 but counts fluently from 97-112: 2 pts* □ *student is less than fluent with the counts from 198-202 and 97-112: 1 pt* □ *less than fluent with all tasks: 0 pts*	
Numeral Identification	*score*
2. "Read these numbers." (550, 111, 212) *Notes:* ☐ *identifies fluently: 3 pts* ☐ *identifies without fluency: 2 pts* ☐ *one or more mistakes: 1 pt*	
Mental Subtraction	*score*
3. 81 - 2 *Notes:* ☐ *:correct 3 pts* ☐ *correct on second attempt: 2 pts* ☐ *student unable to solve: 1 pt*	
Contextualized Addition	*score*
4. 10 + 4 + 50 *Notes:* ☐ *:correct with covered 3 pts* ☐ *:correct, uncovered 2 pts* ☐ *student cannot solve: 1 pt*	
Comparison	*score*
5. Difference between 11 and 7. *Notes:* ☐ *correct 3 pts* ☐ *see detailed rubric: - 2 pts* ☐ *see detailed rubric: 1 pt*	

Grade 2: Midyear

Universal Screener for Number Sense

Written Component, *print 1 copy/student*

Name _____ Date _____

1. Your teacher will read some numbers to you. Write them here.

a. _____ **b.** _____ **c.** _____

d. _____ **e.** _____ **f.** _____

2. What <u>two</u> numbers add to 13? Show all of the combinations.
The first one is done for you.

   13 + 0 = 13

3. Solve. 22 – 4 =
   Make a drawing to explain your answer.

Grade 2: Midyear

Universal Screener for Number Sense

Written Component, page 2, *print 1 copy/student*

4. Solve
   34 – 18 = _____

Make a drawing to explain your answer.

Grade 2: Midyear

Universal Screener for Number Sense

Fluency Tasks, *print 1 copy/student*

F1. Add.

6 + 3 = _____ 8 + 4 = _____ 4 + ____ = 10

____ + 2 = 8 _____ = 14 + 2 10 + 8 = _____

9 + 6 = _____ 11 + 4 =_____

F2. Subtract.

11 – 9 = _____ 8 – 2 = _____ 13 - _____ = 10

17 – 7 _____ 5 – 4 = _____ 10 – 8 = _____

7 – 3 = _____ 11 – 4 = _____

F3. Subtract.

33 – 4 =____ 63 – 20 = ____ 40 – 8 =____

F4. Add.

38 6=____ 52 + 38 =____ 63 + 44 = ____

Grade 2: Midyear

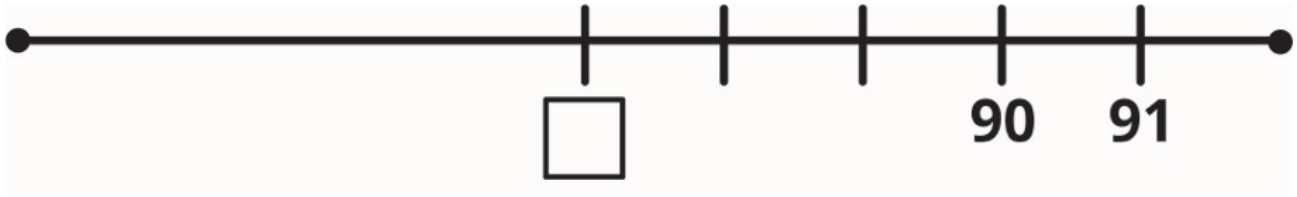
Universal Screener for Number Sense

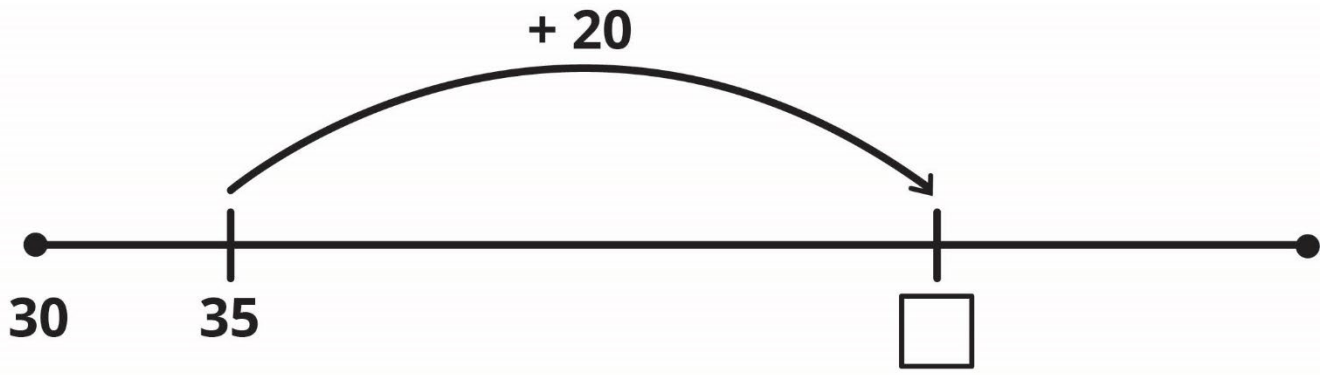
Fluency Tasks continued, *print 1 copy/student*

F5. Compare these numbers using > , <, or =

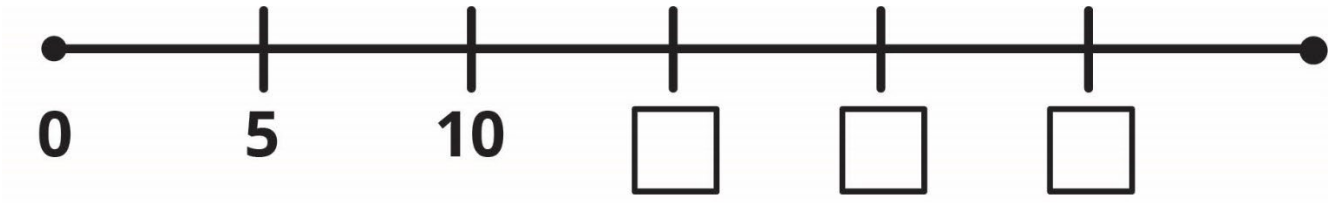
13 ◯ 31 100 ◯ 99 96 ◯ 69

F6. Number Lines. What numbers go in the boxes?





F7. Number Line: What numbers go in the boxes?



Grade 2: Midyear

Universal Screener for Number Sense

Written Component (Spanish) *print 1 copy/student*

Nombre _____ Fecha _____

1. Tu maestro te leerá unos números. Escríbelos aquí.

a. _____ **b.** _____ **c.** _____

d. _____ **e.** _____ **f.** _____

2. ¿Qué dos números suman 13? Demuestra todas las combinaciones.
La primera es hecha para ti.
   13 + 0 = 13

3. Soluciona. 22 – 4 =
   Haz un dibujo para explicar tu respuesta.

Grade 2: Midyear

Universal Screener for Number Sense

Written Component, page 2, *print 1 copy/student*

4. Soluciona
   34 – 18 = _____

Haz un dibujo para explicar tu respuesta.

Grade 2: Midyear

Universal Screener for Number Sense

Fluency Tasks, *print 1 copy/student*

F1. Suma.

6 + 3 = _____ 8 + 4 = _____

4 + ____ = 10 ____ + 2 = 8

_____ = 14 + 2 10 + 8 = _____

8 + 6 = _____ 11 + 4 =_____

F2. Resta.

11 – 9 = _____ 8 – 2 = _____

13 - _____ = 10 17 – 7 _____

5 – 4 = _____ 10 – 8 = _____

7 – 3 = _____ 11 – 4 = _____

F3. Resta.

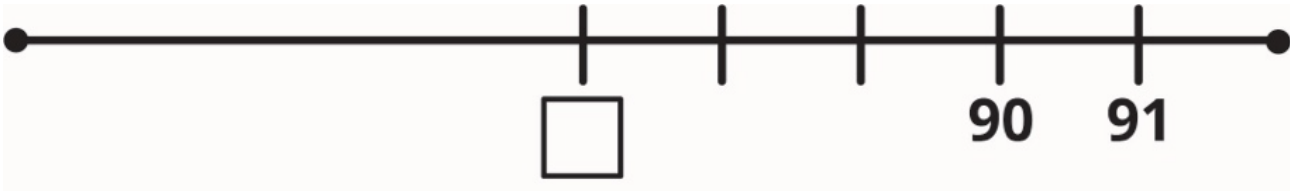
39 – 4 =____ 63 – 20 = ____ 40 – 8 =____

F4. Suma.

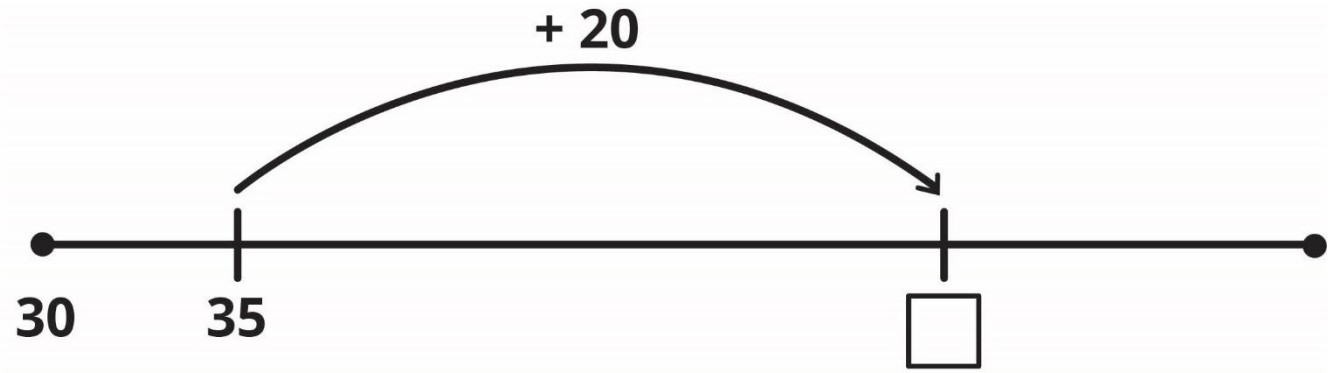
38 + 6=____ 52 + 38 =____ 63 + 44 = ____

F5. Compara estos números usando >, <, o =

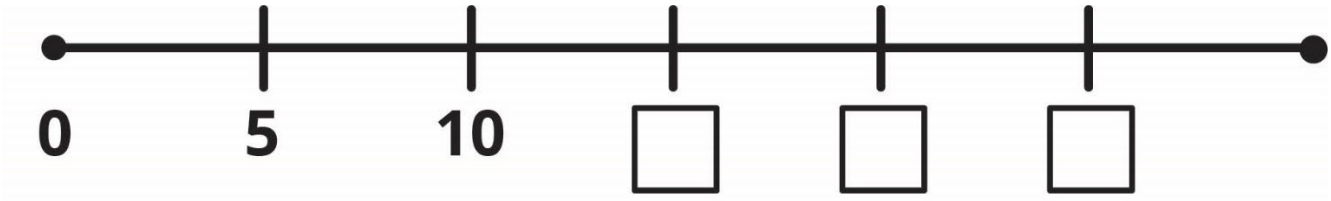
14 ◯ 31 100 ◯ 99 96 ◯ 69



F6. Líneas numéricas. ¿Qué números van en las cajas?



F7. Línea numérica: ¿Qué números van en las cajas?

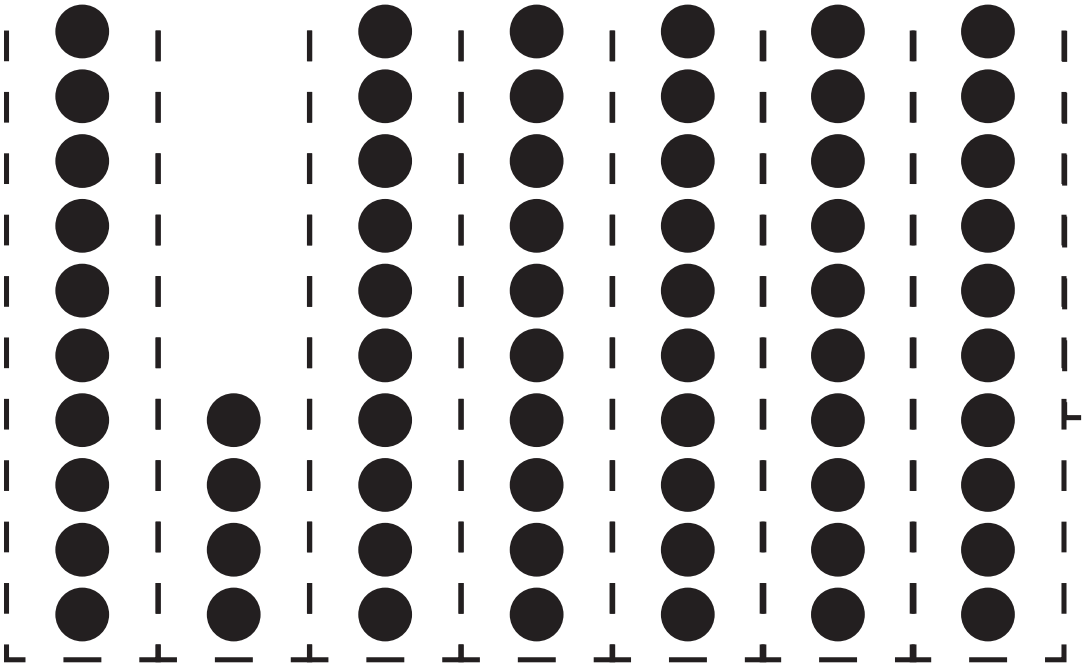


550

111

212

81-2



7 units

11 units

Grade 3: Midyear

Universal Screener for Number Sense

Instructions

Interview

Interviews should be conducted one-on-one with students. Do not provide paper and pencil, and provide materials only as directed

Interviews can be done by sitting with a single student and working through all of the questions or can be done one or two questions at a time. For example, teachers might find that they can quickly and easily assess counting by moving around the room to listen to students count and then, later, in a separate session, set up a table with the necessary materials and pull students one at a time to complete those tasks that use materials.

We encourage that the interviews be done by the primary teacher if possible, since so much of the important information that comes from these tasks cannot be captured in a score.

Written Portion

The written portion of this assessment is designed to be administered to the whole group.

- The assessment is designed to be completed in about 30 minutes. Do not provide more than 60 minutes.
- Do not provide calculators.
- Direct students to work independently.
- Manipulatives should only be provided as an accommodation. They should not be provided except in exceptional situations.
- There is space provided on the assessment to show all work. No extra scratch paper should be necessary.

Fluency Tasks (Formerly known as D Tasks)

Please administer the Fluency Tasks via paper & pencil. They may be administered with the written tasks or at a separate time. The fluency tasks should approximately 20 minutes or less.

Note to Forefront users - Enter point values as directed on scoring guide for fluency tasks. (not performance levels.) For example, if student correctly answers 6 questions correctly, enter "6." Forefront will convert this to the correct performance level.

Materials for the written tasks: For the written portions (including the fluency tasks) of the assessment (not the interview), scratch paper and manipulatives familiar to the students can be made available for the students to use if they choose to do so.

Grade 3: Midyear

Universal Screener for Number Sense

Interview - Detailed Script and Rubrics, *print 1 copy/test*

Number Word Sequence/Place Value 3.NBT.A.2 Number Sense: Backward Number Word Sequences

1. "**Let's do some counting. Start at the number three hundred two and count backward. I will tell you when to stop."** Stop at 298. If the student makes a minor mistake that you think might be corrected on a second attempt ask the student. **"Let me hear that one more time."**
   - If still incorrect, **"Count forward starting at 98"** (stop at 112)

3	2	1	0
Student counts accurately on first attempt. (minor self-corrections allowed)	Student counts accurately but with uncertainties; correct on second attempt, or on first attempt with significant pauses or self-corrections	Counts from 98 -112. Student does not accurately count from 302-298.	Does not accurately count from 98 - 112
Commentary: Backward counts across decade numbers is a skill that is not a "memorization" of the number sequence but reveals an understanding of the number system. It is for that reason that this task aligns with Number in Base Ten.			

Represent Multiplication: 3.OA.A.1 Number Sense: Model Multiplication with Materials

2. Have counters available for the student (more than 12). Present the expression 3 x 4. **"Read this."** Correct the student if they misread. **"How could you use these to show 3 times 4?"** Probe the student briefly to ensure that they understand that they have created groups.

3	2	1
Student creates a 3 by 4 array or 3 groups of 4, or 4 groups of 3 and explains clearly.	Student does show three groups of four or four groups of three but only after additional prompting. **Or** student rotely creates an array or some other accurate configuration, but cannot explain repetitions of equal groupings.	Student does not show *either* 3 groups of 4 or 4 groups of three.
Commentary: The ability to create a model that matches multiplication (and division) problems is an excellent indicator of a conceptual understanding. This learning is essential to the work of third grade. Any students who are unsuccessful should be given ample opportunities to learn and practice this idea. Note that the rote skill of building groups and/or arrays is a stepping stone in the correct direction. Continued work with visual models, along with opportunities to discuss these visual models, supports the conceptual development. A common thing is for students to create a group of three and a group of 4, then to attempt to somehow put an x. Usually, the explanation falls apart at this point, yet it isn't unusual that the student has memorized the answer of 12. Score as level 1 if the student is unable to create a multiplicative model. This problem is not assessing whether the student knows the answer 12. It is about whether the student creates a concrete representation of *why* 3 x 4 is 12. For that reason, if a student says the answer is 12, yet has not created a configuration that reflects 12, it is OK to probe. **"I see three here, and four here. You say the answer is 12. I don't see 12 anywhere. Can you show me how this makes 12?"** (See score of 2.)		

Grade 3: Midyear

Subtraction with Addition Scaffold: 3.NBT.A.2 Number Sense: Subtraction - Mental Math

3. Present the card 200 – 198 and say, **"Read this."** Check to ensure that the student has read the problem accurately. **"How much is 200 minus 198?"**
    - If the student begins to attempt the use of a traditional algorithm (usually evident when the student starts to draw the problem with their finger on the table.) Say, **"It looks like you are trying to solve the problem the paper and pencil way. Do you have another way you might use to solve this problem?"**
    - If the student is unable to solve 200 – 198, present the expression, 198 + 2. **"Could you use this to help you?"**

3	2	1
Student solves without need for additional prompt.	Student can solve 200 – 198 after presented with 198 + 2	Student cannot solve even when supported with 198 + 2
Commentary: The continued conceptualization of differences and place value are the targets of this task. Students who understand this problem well will choose to count up from 198 to 200 to find the difference, or count back 199, 198 or will simply know that the 8 + 2 is 10 and so therefore the answer is two.		

Addition with Scaffold: 3.NBT.A.2 Number Sense: Addition – Mental Math

4. Present the expression 299 + 102. **"Read this card."** Check to ensure that the student has read the problem accurately. Correct students who do not read it correctly. **"How much is 299 plus 102?"**
    - If the student begins to attempt the use of a traditional algorithm (usually evident when the student starts to draw the problem with their finger on the table.) Say, **"It looks like you are trying to solve the problem the paper and pencil way. Do you have another way you might use to solve this problem?"**
    - If student is unable to solve, present the card 299 + 2 with the first card. **"Could you use this to help you?"**

3	2	1
Student answers 401 without need for additional prompt.	Student can solve after presented with 299 + 2.	Student cannot solve even when supported with 299 + 2.
Commentary: The ability of students to coordinate hundreds, tens, and ones represents an important developmental milestone for students. Providing anchor problems for students to develop mental anchors can support students who are developing this ability.		

Grade 3: Midyear

Universal Screener for Number Sense

Written Tasks: Standards Alignment and Scoring Guides, *print 1 copy/test administrator*

W1. Write a Multiplication Story: 3.OA.A.1 Number Sense: Problem Posing - Multiplication

3	2	1
The story written directly matches the multiplication situation, showing either 8 groups of 4 or 4 groups of 8 and includes a question that matches the situation	The story written is a multiplicative situation but includes slight errors in the syntax or in the formation of the question.	The situation is not multiplicative (e.g. the story is additive).
Commentary: The ability of students to imagine and articulate meaningful contexts for multiplication is an important indicator of the ability to make sense of the operation. This task can also reveal areas where more learning is needed. Students will sometimes demonstrate confusions with addition or other more subtle issues. Teachers should also notice if all students in the class are using the same or very similar contexts. This indicates that more connections need to be made across different metaphors (length (jumps), time, weight, money, sets, etc.)		

W2. Write a Division Story: 3.OA.A.2 Number Sense: Problem Posing - Division

3	2	1
The story written directly matches the division situation, showing either a partitive situation (e.g. 56 things in 8 groups, how many in each group?) or quotative (e.g. 56 things with 8 in each group, how many groups?) Story includes a question that matches the story.	The story written represents a division situation but includes slight errors in the syntax or in the formation of the question.	The situation is not division (e.g. the story is subtractive).
Commentary: The ability of students to imagine and articulate meaningful contexts for division is an important indicator of the ability to make sense of the operation. This task can also reveal areas where more learning is needed. Students will sometimes demonstrate confusions with subtraction or other more subtle issues. Teachers should also notice if all students in the class are using the same or very similar contexts. This indicates that more connections need to be made across different metaphors (length (cutting), time, weight, money, sets, etc.)		

W3. Three Equal Parts of a Circle: 3.NF.A.1 Number Sense: Fractions – Partitioning

3	2	1
The student divides the circle approximately accurately into 3 equal parts.	The student has used a method which will result in equal parts, but the parts are significantly disproportionate (i.e. one piece is too big)	The method used will not result in thirds. (e.g. the student use a vertical line to divide the circle)
Commentary: The ability to partition shapes into fair shares is an expectation of 2nd grade and one that students often master earlier. In that way, this task is an indicator of readiness for fractions instruction in 3rd grade.		

Grade 3: Midyear

W4. Fourths of a Rectangle: 3.NF.A.1 Number Sense: Fractions – Partitioning

3	2	1
The student divides the rectangle into 4 approximately equal parts.	The student has used a method which will result in equal parts, but the parts are significantly disproportionate (i.e. one piece is too big)	The student has not made 4 equal parts, or the sizes of the parts are significantly disproportionate.
Commentary: The ability to partition shapes to find halves, thirds and fourths is an expectation of 2nd grade and one that students often master earlier. In that way, this task is an indicator of readiness for fractions instruction in 3rd grade.		

W5. Add: 3.NBT.A.2 Number Sense: Computation -Addition

3	**2**	**1**
Student solves both problems accurately, and shows work that clearly justifies the answer	Student solves both of the problems correctly, but work is not shown, to justify answers. Or – student has one correct answer with work to justify.	Both answers incorrect. **Or** One answer correct, but there is no work to justify the answer.
Commentary: These problems are included in the written section of this assessment to ensure that the justification of the answers is included as part of the question. The prompt also includes that students should check their answers. Although this is not scored in the rubric, this is an important skill. Students should use addition to check their subtraction. Addition is commonly checked by using a second strategy, or by solving again.		

W6. Subtract: 3.NBT.A.2 Number Sense: Computation -Subtraction

3	**2**	**1**
Student solves both problems accurately, and shows work that clearly justifies the answer.	Student solves both of the problems correctly, but work is not shown, to justify answers. Or – student has one correct answer with work to justify.	Both answers incorrect. **Or** One answer correct, but there is no work to justify the answer.
Commentary: These problems are included in the written section of this assessment to ensure that the justification of the answers is included as part of the question. The prompt also includes that students should check their answers. Although this is not scored in the rubric, this is an important skill. Although some students may solve the problem again to check their answer, subtraction is usually checked with addition.		

Grade 3: Midyear

Universal Screener for Number Sense

D Tasks: Scoring Guide

D1. Add: 3.NBT.A.2 Number Sense: Computation -Addition

3	2	1	0
3 correct	2 correct	1 correct	0 correct

D2. Subtract: 3.NBT.A.2 Number Sense: Computation -Subtraction

3	2	1	0
3 correct	2 correct	1 correct	0 correct

D3. Number Sequences: 3.NBT.A.2 Number Sense: Skip Counting – Place Value

3	2	1	0
6 correct	4-5 correct	1-3 correct	0 correct

D4. Number Lines – Place Value: 3.NBT.A.2 Number Sense: Number Lines

3	2	1	0
3 correct	2 correct	1 correct	0 correct

D5. Number Lines – Skip Counting: 3.OA.A.3 Number Sense: Number Lines

3	2	1	0
6 correct	4-5 correct	1-3 correct	0 correct

Grade 3: Midyear

Universal Screener for Number Sense

Quick Script, *print 1 copy/test administrator*

Number Word Sequence/Place Value

1. "**Let's do some counting. Start at the number 302 and count backward. I will tell you when to stop."** Stop at 298.

- If the student makes a minor mistake on their first attempt second attempt, say, **"Let me hear that one more time. Start at the number 302 and count backward."**
- **If the student is still unsuccessful say, "This time let's count forward. Start at the number 98 and count up. I will tell you when to stop."** (Stop at 112)

Represent Multiplication

2. Have counters available for the student (more than 12). Present the expression 3 x 4. **"Read this."** Correct the student if they misread.
"How could you use these to show 3 times 4?" Probe the student briefly to ensure that they understand that they have created groups.

Subtraction with Addition Scaffold

3. "Read this," present 200 – 198. Check to ensure that the student has read the problem accurately. **"How much is 200 minus 198?"**

If the student begins to attempt the use of a traditional algorithm (usually evident when the student starts to draw the problem with their finger on the table.) Say, **"It looks like you are trying to solve the problem the paper and pencil way. Do you have another way you might use to solve this problem?"**
If the student is unable to solve 200 – 198, present the expression, 198 + 2. **"Could you use this to help you?"**

Addition with Scaffold

4. Present the expression 299 + 102. **"Read this card."** Check to ensure that the student has read the problem accurately. **"How much is 299 plus 102?"**

If the student begins to attempt the use of a traditional algorithm (usually evident when the student starts to draw the problem with their finger on the table.) Say, **"It looks like you are trying to solve the problem the paper and pencil way. Do you have another way you might use to solve this problem?"**
If student is unable to solve, present the card 299 + 2 with the first card. **"Could you use this to help you?"**

Grade 3: Midyear

Universal Screener for Number Sense

Spanish Quick Script, *print 1 copy/test administrator*

Number Word Sequence/Place Value

1. "**Vamos a contar. Comienza del número 302 y cuenta hacia atrás. Yo te avisare cuando parar."** Stop at 298.
If the student makes a minor mistake that you think might be corrected on a second attempt, ask the student. **"déjame escuchar eso una vez mas."**

Represent Multiplication

2. Have counters available for the student (more than 12). Present the expression 3 x 4. **"Lee esto."** Correct the student if they misread.
"¿Como podrías usar esto para demostrar 3 veces 4?" Probe the student briefly to ensure that they understand that they have created groups.

Subtraction with Addition Scaffold

3. "Lee esto," present 200 – 198. Check to ensure that the student has read the problem accurately. **"¿Cuánto es 200 menos 198?"**

If the student begins to attempt the use of a traditional algorithm (usually evident when the student starts to draw the problem with their finger on the table.) Say, **"Parece que estas tratando de resolver el problema en la manera de papel y lápiz. ¿Tienes otra manera que podrías usar para resolver este problema?"**
If the student is unable to solve 200 – 198, present the expression, 198 + 2. **"¿Podrías usar esto para ayudarte?"**

Addition with Scaffold

4. Present the expression 299 + 102. **"Lee esta tarjeta."** Check to ensure that the student has read the problem accurately. **"¿Cuánto es 299 más 102?"**

If the student begins to attempt the use of a traditional algorithm (usually evident when the student starts to draw the problem with their finger on the table.) Say, **"Parece que estas tratando de resolver el problema en la manera de papel y lápiz. ¿Tienes otra manera que podrías usar para resolver este problema?"**
If student is unable to solve, present the card 299 + 2 with the first card. **"¿Podrías usar esto para ayudarte?"**

Grade 3: Midyear

Universal Screener for Number Sense

Interview Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language: □ English □ Spanish □ Other: _____

Number Word Sequenes (Place Value)	*score*
1. Count back from 302 (stop at 298) If unsuccessful, count up 98 - 112 ☐ *correct: 3 pts* ☐ *correct 2nd attempt or uncertain: 2 pts* ☐ *counts 98 - 112 1pt* ☐ *incorrect count 98 - 112 0 pts.*	
Operations and Algebraic Thinking	*score*
2. Show 3 x 4 □ *correct 3 pts* □ *Correct after prompting or rote array construction: 2pts* □ *incorrect: 1 pt*	
Numbers and Operations in Base Ten	*score*
3. 200 – 198 (give 198 + 2 if necessary) ☐ *solves: 3 pts* ☐ *solves with additional prompt: 2 pts* ☐ *cannot solve: 1 pt*	
4. 299 + 102 (give 299+ 2 if necessary) ☐ *solves: 3 pts* ☐ *solves with additional prompt: 2 pts* ☐ *cannot solve: 1 pt*	

Grade 3: Midyear

Universal Screener for Number Sense

Written Portion, *print 1 copy/student*

Name _____ Date _____

1. Write a story problem for 8 x 4 = 32.

_____

_____

_____

_____

_____

_____

_____

2. Write a story problem for 56 ÷ 8 = 7.

_____

_____

_____

_____

_____

_____

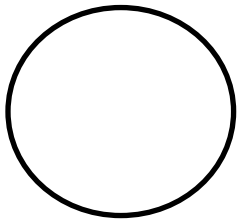
_____

_____

_____

Grade 3: Midyear

3. Three children want to share a cookie. Draw lines to show how to cut the cookie so that each child gets the same amount.



4. Color in one fourth of this rectangle.

5. Add. Show your work. Check your answers.

74 + 48= _____ 456 + 67= _____

6. Subtract. Show your work. Check your answers.

124 -56= _____ 327 – 158 = _____

Grade 3: Midyear

Universal Screener for Number Sense

D-tasks Print 1 copy per student.

1. Add.

98+4 _____ 37 + 58 = _____ 384 + 146 =_____

2. Subtract.

61 – 5= _____ 104 -16 = _____ 410 – 130 = _____

3. Complete the number patterns.

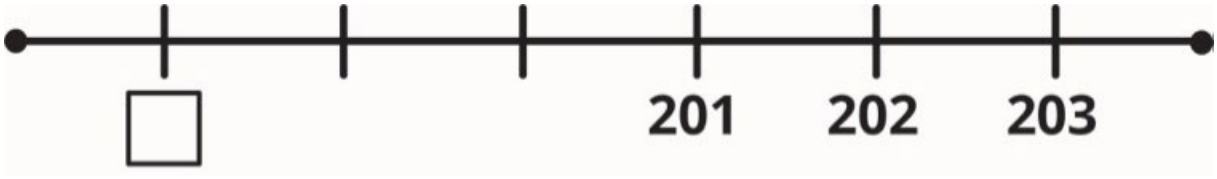
a. 8, _____, 28, 38, _____, _____

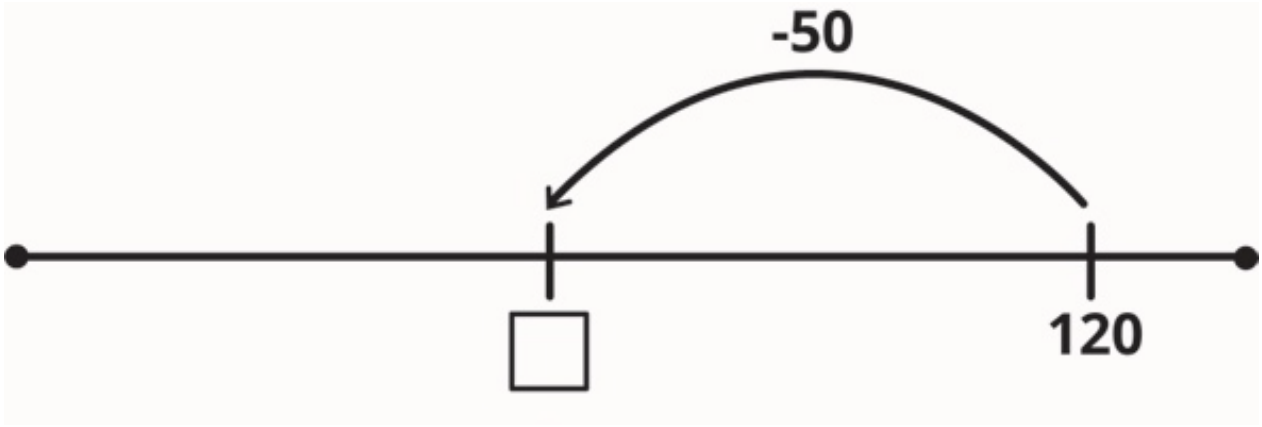
b. 403, 303, _____, _____, _____

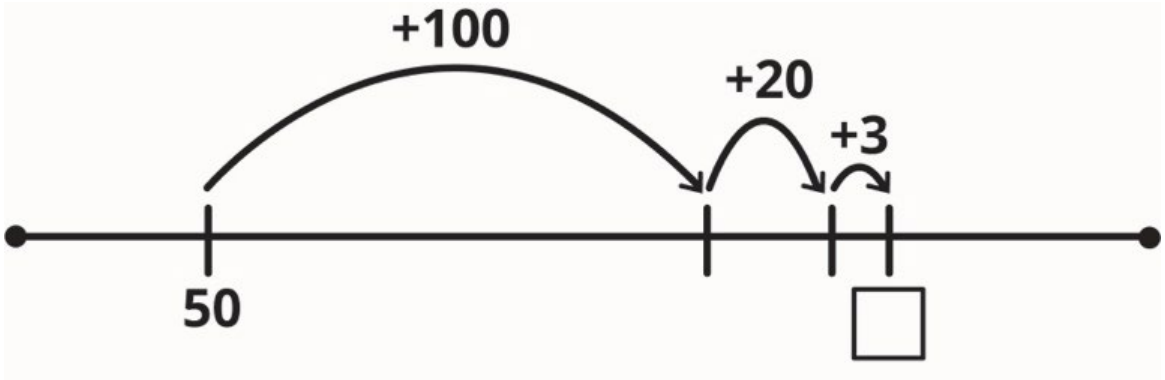
Grade 3: Midyear

4. Number lines

What numbers go in the boxes

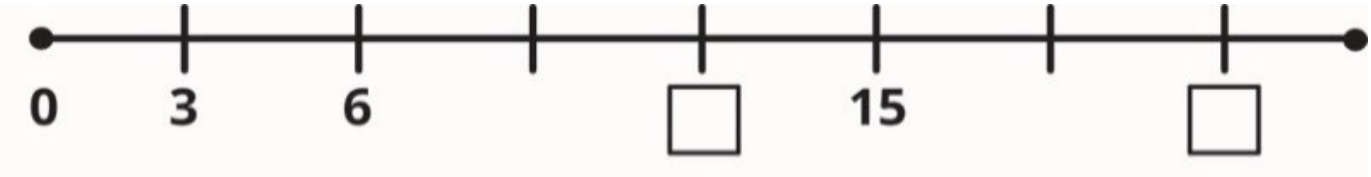


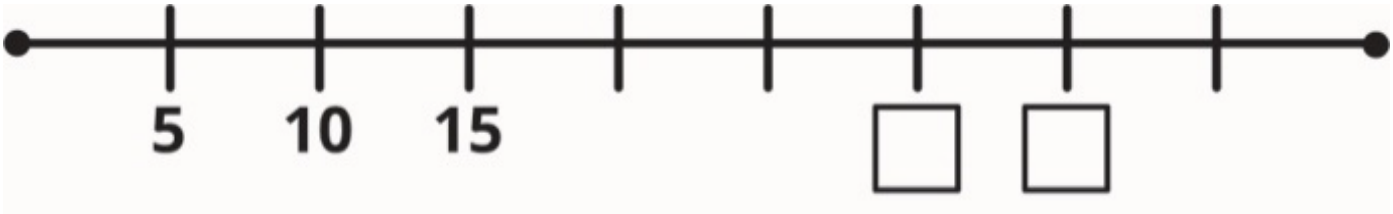




Grade 3: Midyear

5. Number lines





Grade 3: Midyear

Universal Screener for Number Sense

Written Portion (Spanish) , *print 1 copy/student*

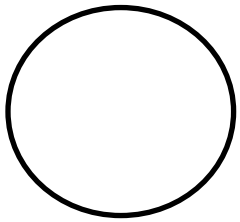
Nombre_____ Fecha_____

1. Escribe una historia para el problema de 8 x 4 = 32.

2. Escribe una historia para el problema de 56 ÷ 8 = 7.

Grade 3: Midyear

3. Tres niños quieren compartir una galleta. Dibuja unas líneas para demostrar como cortar la galleta para que cada niño reciba la misma cantidad.



4. Colorea un cuarto de este rectángulo.

5. Suma. Demuestra tu trabajo. Chequea tus respuestas.

74 + 48= _____ 456 + 67= _____

6. Resta. Demuestra tu trabajo. Chequea tus respuestas.

124 -56= _____ 327 – 158 = _____

Grade 3: Midyear

Universal Screener for Number Sense

D Tasks (Spanish) Print 1 copy per student

1. Suma.

98+4 _____ 37 + 58 = _____ 384 + 146 =__

2. Resta.

62 – 5= _____ 104 -16 = _____ 410 – 130 = _____

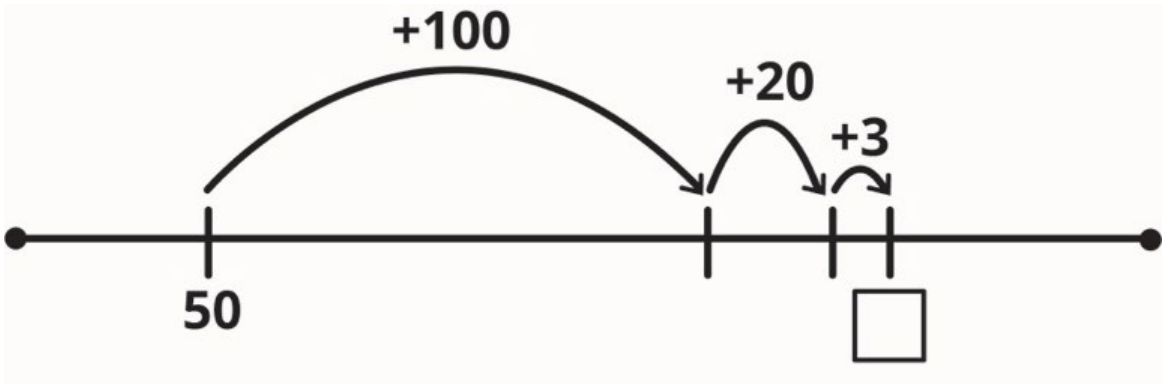
3. Completa los siguientes patrones.

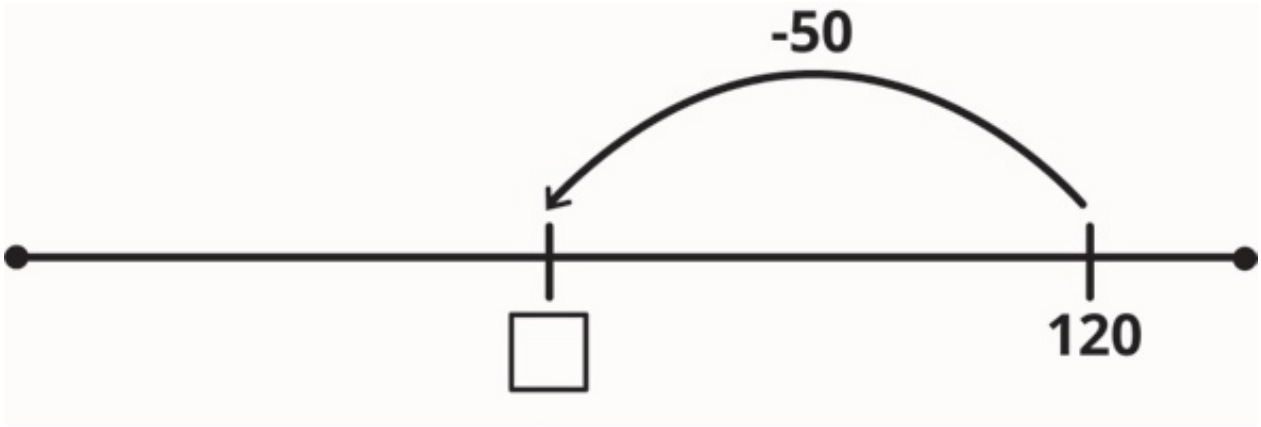
8, _____, 28, 38, _____, _____

403, 303, _____, _____, _____

Grade 3: Midyear

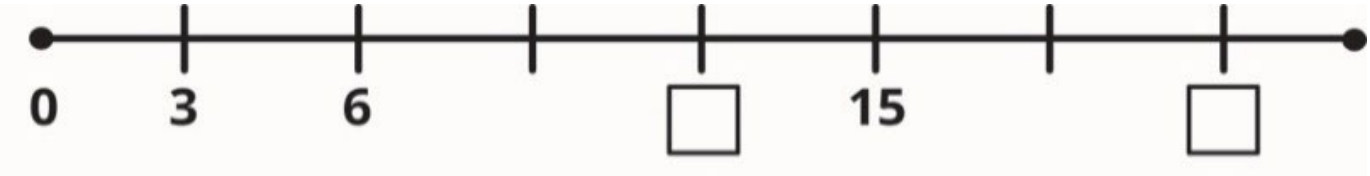
4. Líneas numéricas

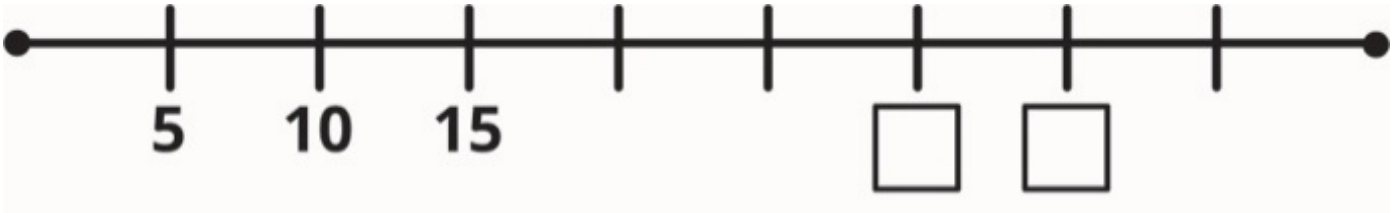




Grade 3: Midyear

5. Líneas numéricas





3 x 4	200-198	198 + 2	296+102
296 + 2			

Grade 4: Midyear

Universal Screener for Number Sense

Instructions

Interview (approximately 5 minutes per student)

Interviews should be conducted one-on-one with students. Do not provide paper and pencil and only provide materials as described in the tasks.

The interviews should be done by the primary teacher if possible since so much of the important information that comes from these tasks cannot be captured in a score.

The interview portion of the assessment is designed for students to solve problems mentally. Do not provide paper and pencil for solving these tasks.

Written Portion (approximately 30 minutes – do not allow for more than 60 minutes)

The written portion of the assessment should be conducted as you would any regular classroom test. Direct the students to work independently on the assessment.

1. Once the test has been distributed, read the numbers of question #1 aloud to whole group. "**Write these numbers in standard form: twenty-three thousand eighty-two…., six and one third……., one hundred eleven thousand"**
   "Escribe estos numeros – vientitres mil ochenta y dos, seis y un tercio, ciento once mil."

- Proctor actively to ensure the integrity of the assessment.
- Except for problem 1, which should be read to all of the students, read words only for students who need them read.
- Ample space is provided on the assessment for students to show work. No scratch paper should be necessary.
- Do not allow for the use of calculators or multiplication tables.

Fluency Tasks (formerly known as D Tasks) (approximately 20 minutes)

Please administer the Fluency Tasks via paper & pencil. These can be administered at the same time as the Written Portion or separately at the teacher's discretion.

Note to Forefront users - Enter point values as directed on scoring guide for fluency tasks. (not performance levels.) For example, if student correctly answers 6 questions correctly, enter "6." Forefront will convert this to the correct performance level.

Materials: For the written and fluency portions of the assessment (not the interview), scratch paper and manipulatives familiar to the students can be made available for the students to use if they choose to do so. Do not allow students to use calculators or multiplication tables.

Do not provide paper or pencil, or any manipulatives for the interview tasks except as explicitly mentioned.

Grade 4: Midyear

Universal Screener for Number Sense

Interview - Detailed Script and Rubrics, *print 1 copy/test*

Multiplication - 4.OA.A.1 Number Sense: Multiplication – Mental Math

1. Show the student the card 20 x 4 = 80. **"Read this card."** Ensure that the student has read the card correctly. **"If you know that 20 x 4 = 80, how can you use that to solve 19 x 4?"**

3	2	1
Student uses 80 – 4 to solve the problem.	Student solves 19 x 4 independently without using 20 x 4.	Incorrect (e.g. 80 – 1 = 79)
Commentary: Students who do not see the connection between the two problems, and who resolve 19 x 4 from scratch need opportunities to continue developing their understanding of multiplication.		

Place Value/Subtraction – 4.NBT.A.1 Number Sense: Subtraction – Mental Math

2. Show the card 2,000 – 10. **"Read this card. "** (Ensure that the student reads correctly; correct them if necessary.) **"How much is 2,000 – 10?"** If student is successful score as a 3. If not, remove the card and present 2,000 – 1, and have the student read and solve that problem.

3	2	1
Solves 2,000 – 10 correctly	Solves 2,000 – 1, but not 2,000 – 10	Unable to solve either problem.
Commentary: Students should have a working understanding of the place value system as it relates to larger numbers that can be applied to mentally solve reasonable addition and subtraction problems into and beyond the thousands.		

Division/Place Value – 4.NBT.A.1 & 4.NBT.B.6

Number Sense: Multiplication Mental Math & Decimal Place Value

3. Place the large array of 320 squares in front of the student. **"Here is an array with 320 squares. It has 10 rows. How many squares are in each row?"** If it helps the student to understand the task, restate the problem as, **"How many columns does it have?"**. Watch the student's eyes. If the student begins to attempt to count the squares, ask, **"How can you solve this problem without counting the squares? You know there are 320 altogether, and there are exactly 10 rows."** If the student solves inaccurately ask them to explain their thinking to see if they correct their answer.

3	2	1
Student is able to solve the problem on the first attempt.	Student solves the problem on 2nd attempt	Inaccurate or unable.
Commentary: This problem, which is essentially a division/place value problem, helps shine light in a variety of ways. Arrays are a powerful tool for understanding both multiplication and division, and students who develop a functional understanding of arrays will have a solid foundation for multiplying and dividing multi-digit numbers. Students who cannot solve this problem conceptually (i.e. without counting) probably do not have a working knowledge of arrays such that they will be able to use arrays as a tool to build further understanding.		

Grade 4: Midyear

Universal Screener for Number Sense

Standards Alignment and Scoring Guides for Written Tasks, *print 1 copy/test administrator*

W1. Numeral Writing: 4.NBT.A.2 Number Sense: Numeral Writing

3	2	1
All three numerals are written correctly	Two correct	One or none correct
Commentary: The ability to write numbers correctly demonstrates a connection between the linguistic and symbolic aspects of mathematics. Although one could say that true number sense is evident when students demonstrate an understanding of the quantities that these numbers represent, this language to symbol connection is critical and is best assessed in isolation.		

W2. Multiplication story: 4.OA.A Number Sense: Problem Posing - Multiplication

3	2	1
Student writes a story that clearly represents a multiplicative situation.	Student writes a story that represents a multiplicative situation, but there is some confusion as to what the result would be, or student needed some prompting to clarify the situation, or there is an issue with the units involved.	Story is not multiplicative.
Commentary: The ability to create a context for a multiplication problem demonstrates an understanding of the operation. Students should be pushed to think about multiplication across a wide variety of contexts. Area problems and equal sized sets are common contexts that students tend to see repeatedly in classrooms and text books, however as their understanding of multiplication deepens, students should begin to use multiplication for comparison problems, conversion of units, magnification, etc. The score of a 2 on this problem can take on a variety of forms. When there is some degree of understanding related to multiplication in the story, but there are syntactical errors and/or confusions that indicate the student is still developing their understanding of multiplicative situations, this should be scored as a 2. Level 3 responses are clear in the establishment of a story that matches the equation.		

W3. Area problem: 4.MD.A.3 Number Sense: Multiplication – Represent & Computation

3	2	1
Student draws an accurate rectangle with the dimensions correctly labeled and solves the problem correctly (1541 square feet)	Area model is drawn correctly but there are minor computation errors, or student solves the calculation correctly, but the area model is incorrect	Incorrect answer and drawing.
Commentary: The ability to create a rectangle and label it to set up and area problem is an important skill. Likewise, the ability to see this as a multiplication problem is equally important. These two skills which underlie this problem indicate the level two response. What separates the 2 from the 3 is the ability to accurately calculate the solution.		

Grade 4: Midyear

W4. Write a division story: 4.OA.A Number Sense: Problem Pose - Division

3	2	1
Student writes a story that clearly represents a division situation.	Student writes a story that represents a division situation, but there is some confusion as to what the result would be, or student needed some prompting to clarify the situation, or there is an issue with the units involved.	Story is not a division situation.
Commentary: The ability to put a context to a division problem demonstrates an understanding of the operation. Students should be pushed to think about division across a wide variety of contexts. Area problems and equal sized sets are common contexts that students tend to see repeatedly in classrooms and text books, however as their understanding of division deepens, students should begin see division across a wider variety of contexts. The score of a 2 on this problem can take on a variety of forms. When there is some degree of understanding related to division revealed in the story, but there are syntactical errors and/or confusions that indicate that the student is still developing their understanding of division situations, this should be scored as a 2. Level 3 responses are clear in the establishment of a story that matches the equation.		

W5. Subtraction/missing addend problem: 4.OA.A.3, 4.NBT.B.4

Number Sense: Problem Solving - Addition and Subtraction

3	2	1
Student solves the problem accurately (190 miles) using any strategy, and writes an equation that matches the situation (missing addend or subtraction)	Student sets up the problem in a way that could be a viable strategy leading to the solution, but makes a computational error and/or the equation is not accurate	Strategy is not viable and equation is inaccurate.
Commentary: This problem provides a difference context for understanding subtraction. Difference problems are typically difficult for some students to conceptualize, and so this can help to identify students who are still developing in their understanding of difference. The equation should be a true equation, that is, it should have an equal sign and equivalent values on both sides. If a student writes an expression it is OK to prompt the student to ensure that they write a full equation. This formality is important for most standardized state assessments and as such is worth emphasizing with students. In the case of this assessment we are looking for whether the student understands the relationships of the values in the problem.		

Grade 4: Midyear

W6. Multiplication Reasoning 4.NBT.B.5

Number Sense: Multiplication Computation Procedures

3	2	1
The student recognizes that Michael has neglected to multiply 7 x 30 and 10 x 2. Answers will vary, but students should recognize these omissions. Student provides correct answer of 544.	Student provides correct answer, but does not describe Michael's mistake. Or Student accurately describes Michael's mistake, but does not provide the correct answer.	Student does not accurately describe Michael's mistake and also does not provide an accurate solution.
Commentary: The ability to understand the reasoning of others and communicate their own reasoning is a critical skill for success not only in math class, but in mathematics in all of life. In this way it is considered an aspect of number sense, in that the student is making sense not only of their own thinking but of the thinking of others.		

W7. Fraction Comparisons: 4.NF.A.2 Number Sense: Fraction Comparisons

3	2	1	0
3 correct	2 correct	1 correct	0 correct
Commentary: These fraction comparison problems, all of which fall within the range of what students are taught in 3rd grade can serve as a good indicator of whether a student has the foundational understandings of fractions that will support the extension of this work in 4th grade. Students who demonstrate that they have misunderstandings of these fractions should be supported as they engage with fractions in 4th grade to ensure that the unfinished learning is addressed.			

W8. Fraction Number Lines 4.NF Number Sense: Fractions on Number Lines

3	2	1	0
3 correct responses Correct responses, from top to bottom are: 5/5 or 1, 5/8, and 3 ¾ or 15/4 (or some other equivalent).	2 correct	1 correct	None correct
Commentary: The ability to accurately place fractions onto number lines demonstrates understanding of the spatial relationships of these numbers, as well as the use of this important representation of numbers. The quantities of these problems are within the range of 3rd grade mathematics, and yet we know that many students will demonstrate unfinished learning in this area. Supporting students who do not perform well on this series of tasks will be important as the critical work related to fractions begins in 4th grade.			

Grade 4: Midyear

Universal Screener for Number Sense

Fluency Tasks Scoring Guide, *print 1 copy/test administrator*

F1. Number Comparisons 4.NBT.A.2 Number Sense: Place Value - Comparisons

3	2	1	0
3 correct	2 correct	1 correct	0 correct
Commentary: Number comparisons demonstrate an understanding of the magnitude of numbers and a practical understanding of place value. If a student appears to have a misunderstanding of the >, and < symbols, it is OK to clarify this with them. What we hope to assess here is whether they understand which of the numbers is greater, not whether they know the signs.			

F2. Multiplication Computational Fluency: 4.NBT.B.5

Number Sense: Multiplication Computation Fluency

3	2	1	0
4 correct	2 or 3 correct	1 correct	0 correct
Commentary: Computational fluency is an important aspect of success in mathematics. However, just drilling with computation problems often does not fix the issue for students. For this reason, it is important to identify students who struggle with this series of tasks and then use careful error analysis to reveal their misconceptions so you can provide targeted supports to help them improve quickly.			

F3. Division Computational Fluency: 4.NBT.B.6

Number Sense: Division Computation Fluency

3	2	1	0
4 correct	2 or 3 correct	1 correct	0 correct
Commentary: Computational fluency is an important aspect of success in mathematics. However, just drilling with computation problems often does not fix the issue for students. For this reason, it is important to identify students who struggle with this series of tasks and then use careful error analysis to reveal their misconceptions so you can provide targeted supports to help them improve quickly.			

F4. Addition Computational Fluency: 4.NBT.B.4

Number Sense: Place Value Computation Fluency

3	2	1	0
4 correct	2 or 3 correct	1 correct	0 correct
Commentary: Computational fluency is an important aspect of success in mathematics. However, just drilling with computation problems often does not fix the issue for students. For this reason, it is important to identify students who struggle with this series of tasks and then use careful error analysis to reveal their misconceptions so you can provide targeted supports to help them improve quickly.			

Grade 4: Midyear

Universal Screener for Number Sense

Fluency Tasks Scoring Guide (continued), *print 1 copy/test administrator*

F5. Subtraction Computational Fluency: 4.NBT.B.4

Number Sense: Place Value Computation Fluency

3	2	1	0
4 correct	2 or 3 correct	1 correct	0 correct
Commentary: Computational fluency is an important aspect of success in mathematics. However, just drilling with computation problems often does not fix the issue for students. For this reason, for students who demonstrate struggles with this series of tasks it is important to do error analysis to understand the misconceptions the student might have and target the supports in ways that help the student to improve quickly.			

F6. Place Value: 4.NBT.A.2 Number Sense: Place Value Ones, Tens & Hundreds

3	2	1	0
5 correct	3-4 correct	1-2 correct	0 correct
Commentary: This series of problems is designed to reveal a student's understanding of place value beyond expanded notation.			

F7. Place Value Number Lines: 4.MD.A.2 Number Sense: Number Lines

3	2	1	0
3 correct	2 correct	1 correct	0 correct
Commentary: These number line problems are designed to reveal students' understandings of the base-ten number system. Students who struggle on these tasks likely will have also demonstrated struggles with computational fluency and some of the other tasks of the assessment. If the student demonstrates difficulty with these tasks, and not the other tasks, it is likely that number lines can be taught discretely, and that the student's issues were only with the context itself. If, however, the number lines are part of a bigger picture of struggles, this is a good place to start with a focus for instruction, since number lines can be utilized as a tool to build conceptual understanding.			

Grade 4: Midyear

Universal Screener for Number Sense

Quick Script, *print 1 copy/test administrator*

Multiplication

1. Show the student the card 20 x 4 = 80. **"Read this card."** Ensure that the student has read the card correctly.
"If you know that 20 x 4 = 80, how can you use that to solve 19 x 4?"

Place Value/Subtraction

2. Show the card 2,000 – 10. **"Read this card. "** (Ensure that the student reads correctly; correct them if necessary.)
"How much is 2,000 – 10?" If student is successful score as a 3.

If not, remove the card and present 2,000 – 1, and have the student read and solve that problem.

Division/Place Value

3. Place the large array of 320 squares in front of the student. **"Here is an array with 320 squares. It has 10 rows. How many squares are in each row?"** Restate the problem as, **"How many columns does it have?"**
If it helps the student to understand the task. Watch the student's eyes. If the student begins to attempt to count the squares, ask, **"How can you solve this problem without counting the squares? You know there are 320 altogether, and there are exactly 10 rows."**

If the student solves inaccurately ask them to explain their thinking to see if they correct their answer.

Grade 4: Midyear

Universal Screener for Number Sense

Spanish Quick Script, *print 1 copy/test administrator*

Multiplication

1. Show the student the card 20 x 4 = 80. **"Lee esta tarjeta."** Ensure that the student has read the card correctly.
" Si tú sabes que 20 x 4 = 80, ¿Como puedes usar eso para resolver 19 x 4?"

Place Value/Subtraction

2. Show the card 2,000 – 10. **"Lee esta tarjeta. "**(Ensure that the student reads correctly; correct them if necessary.)
"¿Cuanto es 2,000 - 10?" If student is successful score as a 3.

If not, remove the card and present 2,000 – 1, and have the student read and solve that problem.

Division/Place Value

3. Place the large array of 320 squares in front of the student. **"Aquí hay una formación con 320 cuadrados. Tiene 10 filas. ¿Cuántos cuadrados hay en cada fila?**" Restate the problem as, **"¿Cuantas columnas tiene?"**
If it helps the student to understand the task. Watch the student's eyes. If the student begins to attempt to count the squares, ask, **"¿Como puedes resolver este problema sin contar los cuadrados? Tú sabes que hay 320 con todos juntos y hay exactamente 10 filas."**

If the student solves inaccurately ask them to explain their thinking to see if they correct their answer.

Grade 4: Midyear

Universal Screener for Number Sense

Interview Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language: □ English □ Spanish □ Other: _____

Multiplication	*score*
1. 19 x4 from 20 x 4. *Notes:* □ *student solves by using 80 - 4: 3 pts* □ *student solves 19 x 4 independently: 2 pts* □ *student is incorrect: 1 pt*	
Place Value Subtraction	*score*
2. 2,000 - 10 (if necessary: 2,000 - 1) *Notes:* ☐ *solves 2,000-10: 3 pts* ☐ *cannot solve 2,000 – 10, solves 2,000 - 1: 2 pts* ☐ *cannot solve either: 1 pt*	
Division/Place Value	*score*
3. "Here is an array with 320 squares. It has 10 rows. How many squares are in each row?" *Notes:* ☐ *student solves on first attempt: 3 pts* ☐ *student solves on second attempt: 2 pts* ☐ *student unable to solve: 1 pt*	

Grade 4: Midyear

Universal Screener for Number Sense

Written Component, *print 1 copy/student*

Name _____ Date _____

1. Write these numbers in standard form:

   twenty-three thousand eighty-two. _____

   six and one third_____

   one hundred eleven thousand _____

2. Write a story problem to match

   36 x 4= 144

Grade 4: Midyear

3. Martha has a rectangular yard that is 23 feet wide and 67 feet long. She wants to cover it with grass and needs to know the area. Draw a picture of Martha's yard and label the dimensions. What is the area of Martha's yard in square feet?

Area = _____

4. Write a story that matches this equation. 64 ÷ 4 = n

_____

_____

_____

_____

_____

_____

_____

_____

_____

Grade 4: Midyear

5. A plane flies from Denver to Saint Louis and then from Saint Louis to Chicago. The total trip is 1,040 miles. The flight from Denver to Saint Louis is 850 miles. How many miles is the flight from Saint Louis to Chicago?

Write an equation that you can use to solve this problem.

_____

What is the solution?

6. Michael solves this multiplication problem 32 x 17 using this strategy.

   30 x 10 = 300
   2 x 7 = 14
   300 + 14 = 314

   So, I think 32 x 17 = **314**

Michael's answer is wrong.

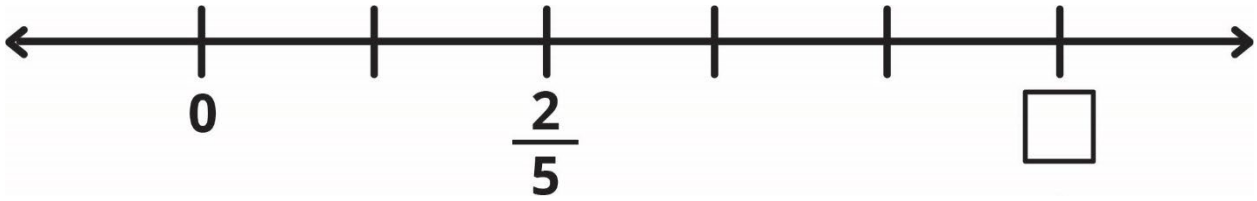
Explain the mistake that Michael made. Solve the problem correctly. Show your work.

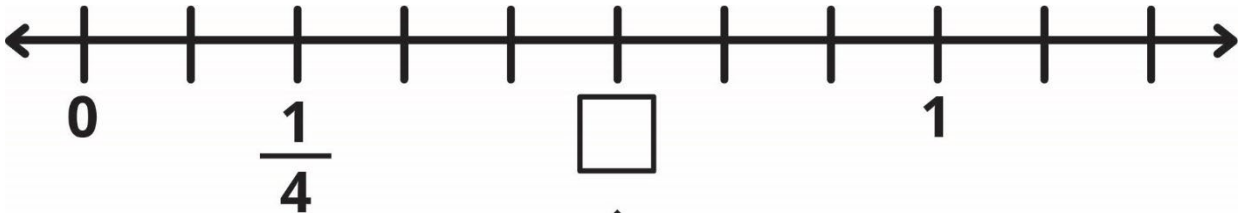
Grade 4: Midyear

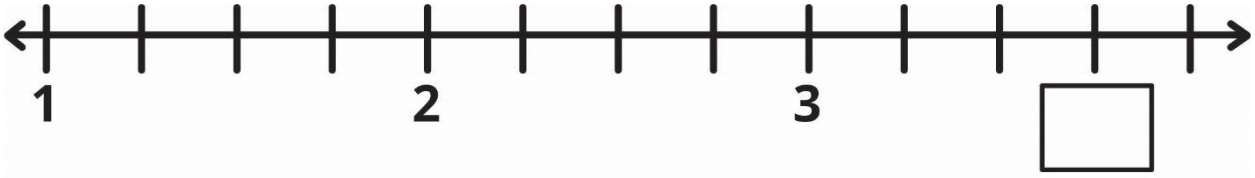
7. Compare these fractions using >, =, <

$\frac{1}{2}$ ____ $\frac{1}{3}$ $\frac{1}{4}$ ____ $\frac{2}{8}$ $\frac{5}{6}$ ____ $\frac{3}{6}$

8. Number Lines. Write the numbers that belong in each box.







Grade 4: Midyear

Universal Screener for Number Sense

Fluency Tasks, *print 1 copy/student*

Number comparisons: Use >, = or < to compare these numbers.

1. 98,876 _____ 102,001 85,731 _____ 805,137 200,003 _____ 23,000

2. Multiplication
   6 x 7 = _____ 13 x 4= _____ 27 x 5 = _____ 20 x 8= _____

3. Division problems

   21 ÷ 3 = _____ 28 ÷ 2 = _____ 51 ÷ 3 = _____ 92 ÷ 4 = _____

4. Addition problems
   31 + 9 = _____ 78 + 44 = _____

   27 + 18 = _____ 309 + 17 = _____

Grade 4: Midyear

5. Subtraction problems

82 – 7=_____

73 – 34 = _____

106 – 17 =_____

235 – 78 = _____

6. Find the missing numbers

a. 37 = _____ + 7

b. 7,000 + 400 + 30 + 1 = _____

c. 56,002 = _____ + 2

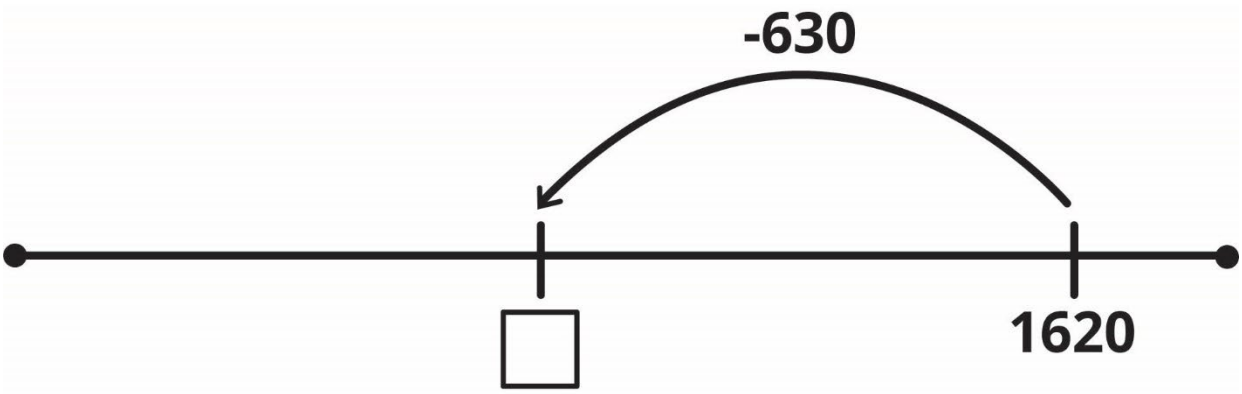
d. 342 = 200 + _____ + 12

e. 7,306 = 5000 + 200 + _____

Grade 4: Midyear

7. Place Value Number Lines

What numbers go in the boxes?



Grade 4: Midyear

Name _____ Date _____

1. Escribe estos números en forma estándar:

   veinte-tres mil ochenta y dos. _____

   Seis y un tercio_____

   ciento once mil _____

2. Escribe una historia de problema que iguala

   36 x 4= 144

Grade 4: Midyear

3. Martha tiene un jardín de 23 pies de ancho y 67 pies de longitud. Ella quiere cubrirlo con césped y necesita saber el área. Dibuja una figura del jardín de Martha y anota las dimensiones. ¿Cuál es el área del jardín de Martha en pies cuadrados?

Area = _____

4. Escribe una historia que iguala esta ecuación. 64 ÷ 4 = n

_____

_____

_____

_____

_____

_____

_____

_____

_____

Grade 4: Midyear

5. Un avión vuela de Denver a Saint Louis y de Saint Louis à Chicago. El viaje total son 1,040 millas. El vuelo de Denver a Saint Louis son 850 millas. ¿Cuántas millas es el vuelo de Saint Louis a Chicago?

Escribe una ecuación que puedes usar para resolver este problema.

_____

¿Cuál es la solución?

6. Michael resuelve este problema de multiplicación 32 x 17 usando esta estrategia.
   30 x 10 = 300
   2 x 7 = 14
   300 + 14 = 314

   Entonces, pienso que 32 x 17 = **314**

La respuesta de Michael está equivocada.

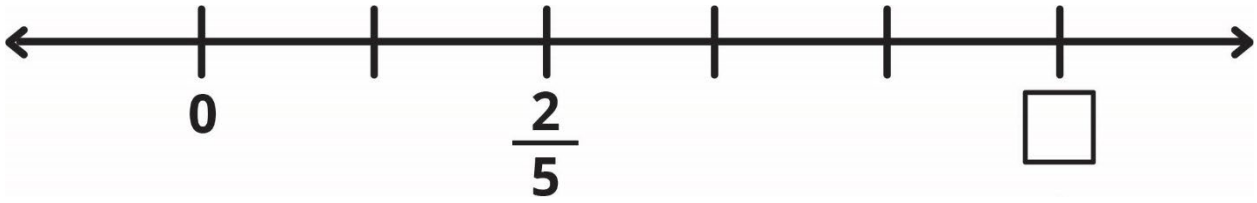
Explica el error que Michael cometió. Resuelve el problema correctamente. Demuestra tu trabajo.

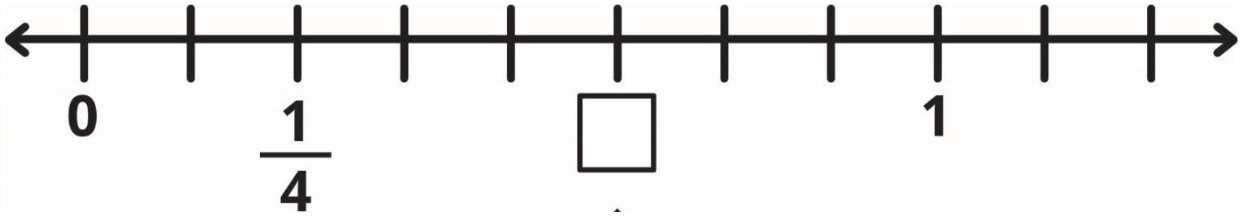
Grade 4: Midyear

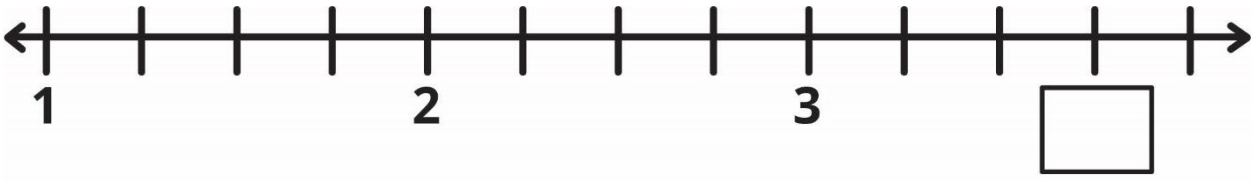
7. Compara estas fracciones usando >, =, <

$\frac{1}{2}$ ____ $\frac{1}{3}$ $\frac{1}{4}$ ____ $\frac{2}{8}$ $\frac{5}{6}$ ____ $\frac{3}{6}$

8. Líneas numéricas. Escribe los números que pertenecen en cada caja.







Grade 4: Midyear

Universal Screener for Number Sense

Fluency Tasks, *print 1 copy/student*

1. Comparación numérica: Usa >, = o < para comparar los números.

98,876 _____ 102,001

85,731 _____ 805,137

200,003 _____ 23,000

2. Multiplicación

6 x 7 = _____

13 x 4= _____

27 x 5 = _____

20 x 8= _____

3. Problemas de división

22 ÷ 3 = _____

28 ÷ 2 = _____

51 ÷ 3 = _____

92 ÷ 4 = _____

Grade 4: Midyear

4. Problemas de adición

32 + 9 = _____ 78 + 44 = _____

28 + 18 = _____ 309 + 17 = _____

5. Problemas de sustracción

82 – 7=_____ 73 – 34 = _____

106 – 17 =_____ 235 – 78 = _____

6. Encuentra los números que faltan

a. 37 = _____ + 7

b. 7,000 + 400 + 30 + 1 = _____

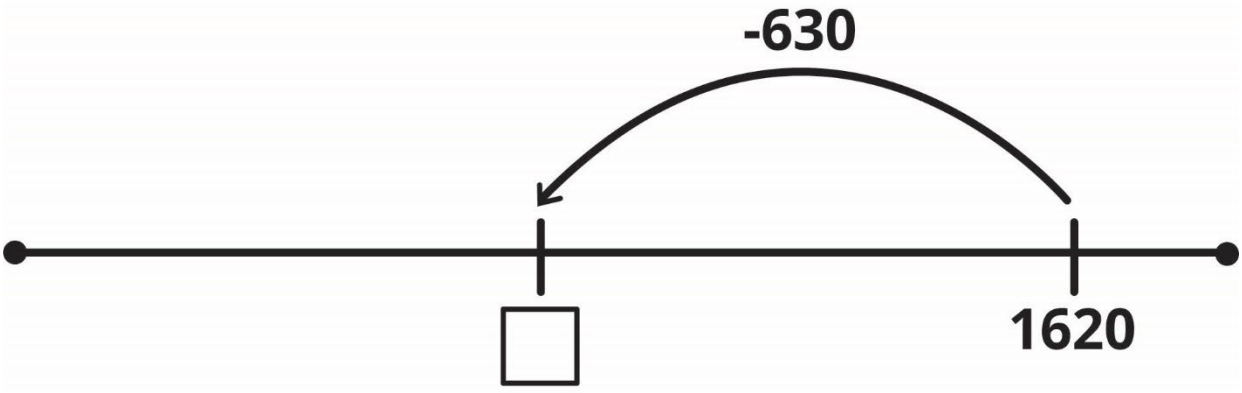
c. 56,002 = _____ + 2

d. 342 = 200 + _____ + 12

e. 7,306 = 5000 + 200 + _____

Grade 4: Midyear

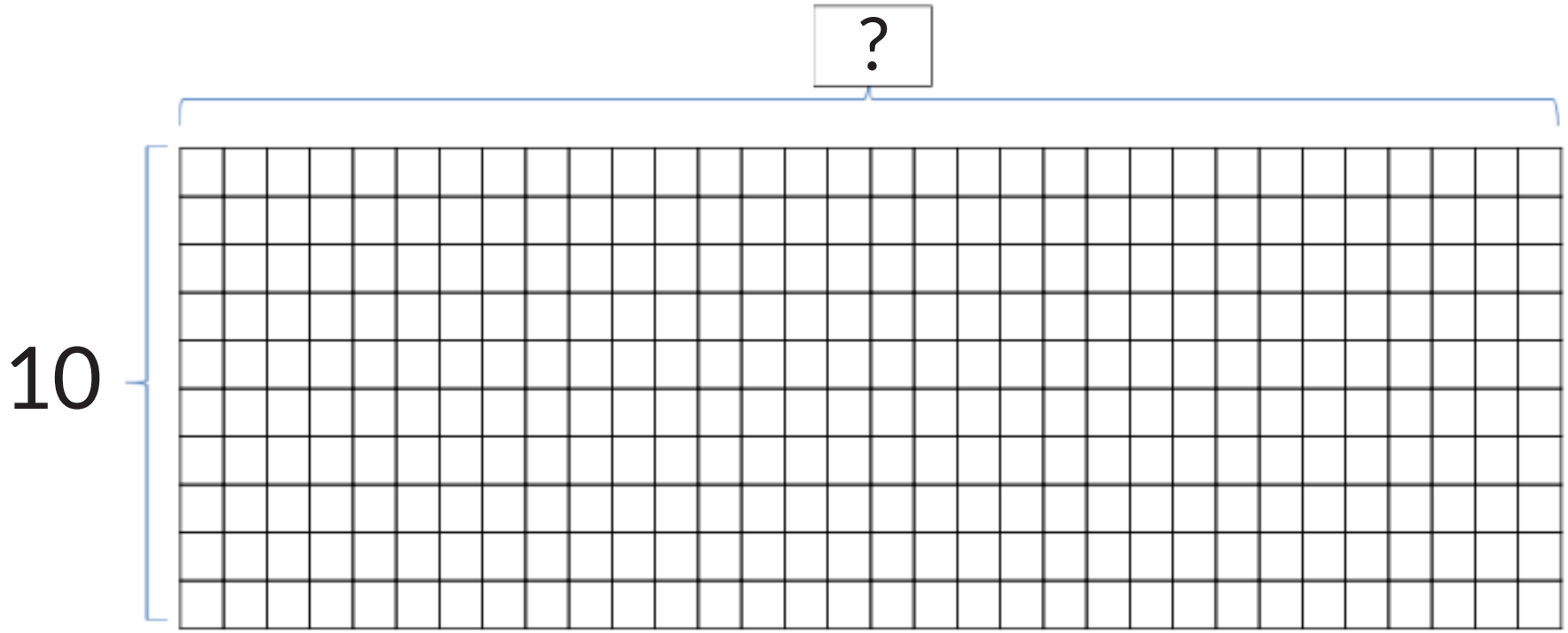
7. Coloca el valor en las líneas numéricas.



2,000 - 1

2,000 - 10

20 x 4 = 80



Grade 5: Midyear

Universal Screener for Number Sense

Instructions

Interview (about 5 minutes per student)

Interviews should be conducted one-on-one with students. Do not provide paper and pencil or any other materials except as indicated in the materials.

Inteviews can be done by sitting with a single student and working through all of the questions, or can be done one or two questions at a time. For example, teachers might find that they can quickly and easily assess numeral identification by moving around the room to have students read the numbers, and then in a later session, set up a table with the necessary materials and pull students one at a time to complete the tasks that use materials.

Written Portion (~30 minutes – Do not allow more than 60 minutes)

The written portion of the assessment should be conducted as you would any regular classroom test. Direct the students to work independently on the assessment.

- Proctor actively, moving around the room to ensure the integrity of the assessment.
- Ample space is provided on the assessment for students to show work. No scratch paper should be necessary.
- Do not allow for the use of calculators or multiplication tables.

If you are uncertain of a student's answer on a question, feel free to probe and interact with the student. For example, the first question related to 0.1 of a candy bar might be unfamiliar to a student. If you see a student response that you are having trouble making sense of, ask the student what they have done in order to understand. Notice the gestures that students make as they engage with this task. However, as you work with students in this way, attempt not to provide unnecessary supports like reading the numbers to them.

Fluency Tasks (formerly known as D Tasks) (~30 minutes)

Please administer the Fluency Tasks via paper & pencil. These can either be administered at the same time as the Written Portion or separately, at the teacher's discretion.

Materials: For the written portions of the assessment (not the interview), scratch paper and manipulatives familiar to the students can be made available for the students to use if they choose to do so.

Note to Forefront users - Enter point values as directed on scoring guide for fluency tasks. (not performance levels.) For example, if student correctly answers 6 questions correctly, enter "6." Forefront will convert this to the correct performance level.

Do not provide calculators or multiplication tables.

Do not provide paper or pencil, or any manipulatives for the interview tasks except as explicitly mentioned.

Grade 5: Midyear

Universal Screener for Number Sense

Detailed Script and Rubrics, *print 1 copy/test administrator*

Numeral ID: 5.NBT.A.3 Number Sense: Numeral Identification

1. "Read these numbers." Present numeral cards one at a time.

$3\frac{3}{5}$ 206,012 100.01 0.213

Answers should be: "three and three fifths" "two hundred six thousand, twelve" "one hundred and one hundredth" and "two hundred thirteen thousandths" or "zero and two hundred thirteen thousandths."

- If a student reads 100.01 as "one hundred point zero one" ask them if they have another way to read it. Sometimes students will think of this as "the school way." The same is true of 0.213. Attempt to push the student to see if they can use formal mathematical language to read the numbers.

3	2	1
Student reads all numbers using the correct terminology (Score as a three if this is on a second attempt, if you need to push for the student to read the decimal numbers using place value terminology.)	Student reads the fraction and whole number accurately, but is unable to use place value language to read the decimal numbers.	Student is unable to read both the mixed number and the whole number accurately.

Commentary: Few topics are as controversial as reading large numbers and decimal numbers. For example, when you read 2,106.3 do you say, "two thousand, one hundred six and three tenths?" If you do, then I know you are a math teacher. Teachers are expected to teach students to read numbers this way for very good reasons, and assuming you have been teaching students to read numbers in this way, encourage them to use that language in this assessment for scoring a three. If the student reads 2,196.3 as "two thousand, a-hundred ninety six, point three," you don't want to think of this as *wrong* necessarily. (This is exactly the way we hear numbers like this read on the radio and elsewhere.) However, for this assessment, we do encourage that students use the formal, math classroom way of reading large numbers and decimal numbers.

As you listen to a student's responses here, recognize that this is an assessment of their ability to read these numbers in a functional way that reflects the student's *understanding* of the numbers. That is, if a student reads 206,012 as "two oh six and zero twelve" it would appear that the student has little understanding of the place value represented in this numeral. This is what you are listening for.

When listening to how students read mixed numbers, it is important that the "and" is heard. Students should say, "three **and** three fifths." "Three three fifths" is incorrect, both in the math classroom and in colloquial usage.

Grade 5: Midyear

Fractions: 5.NF.A.1 Number Sense: Fractions Computation Add/Subtract

2. Present the card 2 – ¼. **"Read this card."** Ensure that the student has read the card accurately, and if not correct them. **"How much is 2 – ¼?"**

If it is not obvious, or if the student is incorrect, ask, **"How did you solve that?"**

3	2	1
Student solves accurately on first attempt.	Student corrects answer when explaining their thinking.	Incorrect
Commentary: Students should be able to solve basic operations problems with fractions without the need for resorting to an algorithm.		

Subtraction/Place Value – 5.NBT.B.7 Number Sense: Place Value – Decimals & Mental Math

3. Place the card 10 – 0.4 in front of the student. **"Read this card."** Ensure that the student has read the card accurately. (For the purpose of this assessment it doesn't matter whether the student reads 0.4 as "zero point four" or "four tenths"). If the student reads the problem incorrectly, correct them. **"How much is that."**

- If the student is unsuccessful, ask the student, **"Solve it one more time and tell me, step by step what you did to figure it out."**

3	2	1
Student is able to solve the problem on the first attempt.	Student solves the problem on 2nd attempt	Inaccurate or unable.
Commentary: Students should be able to solve simple problems related to the addition and subtraction of decimal numbers without needing to apply algorithmic procedures.		

Subtraction/Place Value: 4.NBT.B.4 Number Sense: Place Value – Mental Math

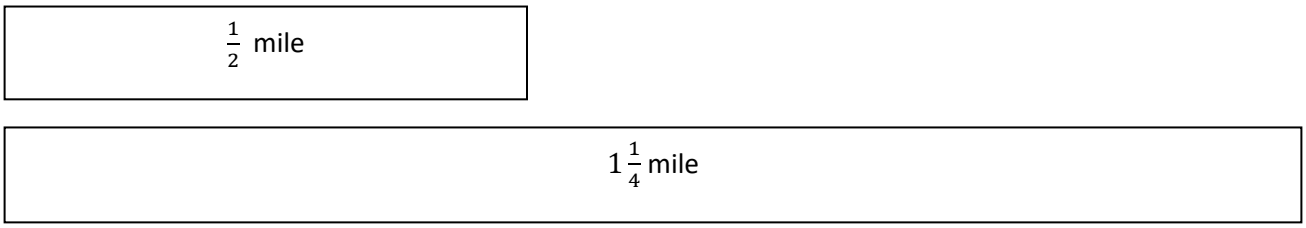
4. Show the student the card that reads 9,000 – 10. **"Read this card for me."** Ensure that the student reads the card accurately and correct them if not. **"Solve the problem."** If the student answers incorrectly, ask, **"How did you solve that? Explain your thinking."**

3	2	1
Student is able to solve the problem on the first attempt.	Student solves the problem when asked to explain their thinking.	Inaccurate or unable.
Commentary: Strictly thinking, this problem aligns with 4th grade mathematics in terms of the numbers involved, however solving this problem mentally increases the demands of the problem while also revealing more about the student's understanding of place value. Students who are unable to solve this problem mentally are most likely still developing their understanding of the base-ten number system and will need opportunities to continue developing this very important, foundational understanding.		

Grade 5: Midyear

Fraction Bar Comparison: 5.NF.A.1 Number Sense: Problem Solving – Comparisons

5. Present the two bars to the student. Say, **"There are two roads represented by the bars below. The top bar shows a road that is $\frac{1}{2}$ mile long. The bottom bar shows a road that is $1\frac{1}{4}$ mile long. How much longer is the bottom road than the top?"**



3	2	1	0
Student is able solve the problem and answers $\frac{3}{4}$.	Student is able to conceptualize the comparison, and might say something like, "one half and another quarter".	Student gestures or demonstrates in some way that they understand that this is a difference problem but is unable to give a fractional answer that is equivalent to $\frac{3}{4}$.	Student shows no indication that they have conceptualized the problem as a comparison problem. Student attempts to add the two values, or simply expresses that they don't get it.
Commentary: This problem is intended to reveal conceptual understanding of fractions, while also extending ideas related to comparison. Some 5th grade students still struggle with conceptualizing comparison problems. As you listen to students solving this problem\ listen for the language of comparison. Watch the gestures that some students make. Some will attempt to measure the difference with their fingers and might even say something like "this much longer," without giving a numeric value. If this happens, push the student with a question like, "How much longer is that?"			

Grade 5: Midyear

Universal Screener for Number Sense

Written Tasks: Standards Alignment and Scoring Guides, *print 1 copy/test administrator*

W1. One tenth of a whole: 5.NBT.A.1

Number Sense: Fractions RnA & Place Value Decimals

3	2	1
Student draws a small square approximately $\frac{1}{10}$ of the rectangle, and indicates that 10 should fit.	Student draws a small square approximately $\frac{1}{10}$ of the rectangle but does not accurately say that 10 should fit in the larger rectangle. Or, the drawing is not close to $\frac{1}{10}$ of the size of the larger, but the student correctly states that 10 should fit.	The shape the student draws is not close to $\frac{1}{10}$ the size of the larger shape and the student does not respond that 10 should fit.
Commentary: A conceptual understanding of decimal number is a critical objective of the end of 4th and beginning of 5th grades. Student should be able to demonstrate their understanding of decimal numbers across a wide variety of contexts (not just money). Spatial representations like the one in this problem, and number lines are two critical contexts, however, also consider contexts like time (Olympic sports provide a wonderful context for these), weight, and other measurements.		

W2. Boxes of Jars of Pickles: 5.NBT.B Number Sense: Problem Solve - Multiplication

3	2	1
Student arrives at the correct answer of 240 pickles.	Student has organized the problem correctly, that is they have a viable strategy, but they have made a calculation error.	Incorrect with a solution strategy that is not viable.
Commentary: This problem requires the student to coordinate units of units. This ability to make larger units from smaller units represents a developmental milestone that relates not just to multiplication but relates to fractional thinking as we saw in the previous problem.		

W3. Boxes of Cans: 5.NBT.B.5

Number Sense: Problem Solve – Multiplication & Model Multiplication with Equations

3	2	1
Correct solution (216 cans) with correct equation	Student uses a viable strategy, and correct equation, but solution is incorrect	Incorrect solution without a viable strategy.
Commentary: This multiplication problem is written to identify students who have unfinished learning that should be addressed before middle school. It should be considered in combination with problem 2 above, and with the multiplication computational fluency questions of the digital section.		

Grade 5: Midyear

W4. 288 boxes packed onto 8 crates: 5.NBT.B.6

Number Sense: Problem Solve – Multiplicaton & Model With Equations

3	2	1
Student solves problem and provides an equation that matches the problem correctly. (e.g. 288 ÷ 8 =36 or ? x 8 = 288).	Student provides a correct equation, but an incorrect answer, or the student has given a correct answer, but does not provide an accurate equation	Incorrect answer with equation that doesn't match.

Commentary: The ability to divide accurately by the end of 5th grade is a known indicator of overall success in middle school mathematics. This concept and the accompanying set of skills necessary for accurately performing the operation is complex, and difficult for many students. Encourage students to show all of their work on this problem so that you can evaluate not only the correctness of the answer, but to understand the strategies the student uses and any mistakes that they might have made when solving the problem.

If the student has solved the problem and the work is there but they are missing an equation, encourage the student to write the appropriate equation on the line provided. This is an important step in the formalization process, and students need this skill in order to be able to communicate their mathematical thinking to others, and later to be able to apply technology to solve such problems. It is also something we often see on state assessments because it is an important skill in pre-algebra and algebra, so it is important to give students formal opportunities to practice writing equations to match mathematical situations

Grade 5: Midyear

Universal Screener for Number Sense

Fluency Tasks Scoring Guide, *print 1 copy/test administrator*

F1. Decimal comparison: 5.NBT.B.7

Number Sense: Place Value –Magnitude and Comparison & Problem Solving - Comparisons

3	2	1
2 correct	1 correct	0 correct
Commentary: Time can be a helpful context for understanding decimal numbers. Of course there is often confusion that arises from the fact that hours minutes and seconds work work off the 60 minute/second clock, while fractions of seconds (as in this problem) are measured in base ten. If some background knowledge regarding these systems needs to be built there are many examples that can be easily found online from the Olympics and other competitions.		

F2. Multiplication Fluency: 5.NBT.B.5

Number Sense: Multiplication and Division - Solve

3	2	1	0
3 correct	2 correct	1 correct	0 correct
Commentary: This series of multiplication problems aligns with 4th grade standards. Students who struggle with these problems will need support as they attempt to work with the numbers of larger magnitude that is the work of 5th grade. It is suggested that teachers pay close attention to any unfinished learning that they might find as they the extendthat learning in 5th grade. The results of this series of questions should be considered in combination with question 2 of the written component.			

F3. Division Fluency: 5.NBT.B.6 Number Sense: Multiplication and Division - Solve

3	2	1	0
3 correct	2 correct	1 correct	0 correct
Commentary: The ability to divide is a known predictor of success in middle school mathematics. These problems which focus on calculation should be taken into consideration along with the contextualized problems that presented in the written section of the assessment.			

Grade 5: Midyear

F4. Decimals and Whole Numbers: 5.NBT.A.2 Number Sense:Place Value - Decimals

3	2	1	0
4 correct	2-3 correct	1correct	0 correct
Commentary: This series of tasks is designed to assess student's understanding of how multiplying by powers of ten relates to decimal place value. Notice that the final question only deals with whole numbers. If students cannot demonstrate this understanding with whole numbers, that unfinished learning should be addressed as students engage with these types of tasks as they relate to decimal numbers.			

F5. Decimal Addition 5.NBT.B.7 Number Sense: Place Value - Decimals

3	2	1	0
3 points	2 points	1 point	0 points
Commentary: Students who struggle with these problems would likely benefit from lessons and practice with problems that are contextualized and can be modeled using real materials, number lines, and simple drawings.			

F6. Decimal Number Lines 5.NBT.A.3 Number Sense: Number Lines

3	2	1	0
4 correct	**3** correct	**1-2** correct	**0** correct
Commentary: These number lines are constructed to assess basic number sense as it relates to the decimal system. Students who struggle with these tasks will need opportunities to develop conceptual understandings of these numbers in order to sustain success through middle school.			

Grade 5: Midyear

Universal Screener for Number Sense

Quick Script, *print 1 copy/test administrator*

Numeral Identification

1. "Read these numbers." Present numeral cards one at a time.

$3\frac{3}{5}$ 206,012 100.01 0.213

(Answers should be: "three and three fifths" "two hundred six thousand, twelve" "one hundred and one hundredth" and "two hundred thirteen thousandths.")
If a student reads 100.01 as "one hundred point zero one" ask them if they have another way to read it. Sometimes students will think of this as "the school way." The same is true of 0.213. Attempt to push the student to see if they can use mathematical language to read the numbers.

Fractions

2. Present the card 2 – ¼. **"Read this card."** Ensure that the student has read the card accurately, if not correct them. **"How much is 2 – ¼?"** If it is not obvious, or if the student is incorrect, ask, **"How did you solve that?"**

Subtraction/Place Value

3. Place the card 10 – 0.4 in front of the student. **"Read this card."** Ensure that the student has read the card accurately. (For the purpose of this assessment it doesn't matter whether the student reads 0.4 as "zero point six" or "six tenths"). If the student reads the problem incorrectly, correct them. **"How much is that."**
If the student is unsuccessful, ask the student, **"Solve it one more time and explain your thinking as you do."**

4. Show the student the card that reads 9000 – 10. **"Read this card for me."** Ensure that the student reads the card accurately and correct them if not. **"Solve the problem."** If the student answers incorrectly, ask, **"How did you solve that? Explain your thinking to me."**

Fraction Bar Comparison

5. Show the student the card with the rectangles. **"The top rectangle below represents ½ of one mile. The bottom rectangle represents $1\frac{1}{4}$ mile. How much longer is the bottom rectangle than the top?"**

Grade 5: Midyear

Universal Screener for Number Sense

Spanish Quick Script, *print 1 copy/test administrator*

Numeral Identification

1. "Lee estos números." Present numeral cards one at a time.

$3\frac{3}{5}$ 206,012 100.01 0.213

(Answers should be: "tres y tres quintos" "dos cientos seis mil doce" "cien y un centésimo," and "dos cientos trece milésimas.")

If a student reads 100.01 as "cien punto zero uno" ask them if they have another way to read it. Sometimes students will think of this as "the school way." The same is true of 0.213. Attempt to push the student to see if they can use mathematical language to read the numbers.

Fractions

2. Present the card 2 – ¼. **"Lee esta tarjeta."** Ensure that the student has read the card accurately, if not correct them. **"¿Cuánto es 2 – ¼?"** If it is not obvious, or if the student is incorrect, ask, **"¿Como resolviste eso?"**

Subtraction/Place Value

3. Place the card 10 – 0.4 in front of the student. **"Lee esta tarjeta."** Ensure that the student has read the card accurately. (For the purpose of this assessment it doesn't matter whether the student reads 0.4 as "zero point six" or "six tenths"). If the student reads the problem incorrectly, correct them. **"¿Cuánto es eso?"**

If the student is unsuccessful, ask the student, **"Resuélvelo una vez más y explica tu lógica mientras lo haces."**

4. Show the student the card that reads 9000 – 10. **"Léeme esta tarjeta."** Ensure that the student reads the card accurately and correct them if not. **"Resuelve el problema."** If the student answers incorrectly, ask, **"¿Como lo resolviste? Explícame tu lógica."**

Fraction Bar Comparison

5. Show the student the card with the rectangles. **"El rectángulo superior de abajo representa ½ de una milla. El rectángulo inferior representa $1\frac{1}{4}$ milla. ¿Qué más largo es el rectángulo de arriba que el de abajo?"**

Grade 5: Midyear

Universal Screener for Number Sense

Interview Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language: □ English □ Spanish □ Other: _____

Numeral Identification	*score*
1. "Read these numbers." ($3\frac{3}{5}$, 206,012, 100.01, 0.213) *Notes:* □ *reads all four correctly: 3 pts* □ *reads fraction and whole number correctly, but not decimals: 2 pts* □ *does not read correctly: 1 pt*	
Fractions	*score*
2. 2 – 1/4 *Notes:* ☐ *solves correctly: 3 pts* ☐ *solves by self-correcting: 2 pts* ☐ *does not solve; 1 pt*	
Subtraction/Place Value	*score*
3. 10 – 0.4 *Notes:* ☐ *solves correctly: 3 pts* ☐ *solves by self-correcting: 2 pts* ☐ *does not solve; 1 pt*	
4. 9,000 - 10 *Notes:* ☐ *solves correctly: 3 pts* ☐ *solves by self-correcting: 2 pts* ☐ *does not solve; 1 pt*	
Comparisons	*score*
5. ½ mile compared to 1 ¼ miles *Notes:* ☐ *solves correctly, says "3/4": 3 pts* ☐ *conceptualizes problem, says "one half and one fourth": 2 pts* ☐ *implies understanding of comparison, cannot solve: 1 pt* ☐ *does not demonstrate an understanding of length comparison: 0 pts*	

Grade 5: Midyear

Universal Screener for Number Sense

Written Component, *print 1 copy/student*

Name _____ **Date** _____

1. The rectangle below represents one whole candy bar.

Draw a rectangle to represent 0.1 of a candy bar.

How many 0.1 candy bars would you need to make a whole candy bar? _____

2. A box holds 8 jars. Each jar holds 6 pickles. There are 5 boxes full of jars. How many pickles are there?
   Solve. Show your work.

Solution: _____ pickles

Grade 5: Midyear

3. Jan works in a warehouse. A shipment of cans has arrived. There are 12 cans in each box. There are 18 boxes. How many cans are there?
   Solve and write an equation that matches this problem.

Solution _____ cans

Equation _____

4. Sometimes things at Jan's warehouse need to be packed for shipping. Jan needs to pack 288 boxes into 8 crates. Each crate needs to have the same number of boxes. How many boxes will go onto each crate?

_____ boxes.
Write an equation to match _____

Grade 5: Midyear

Universal Screener for Number Sense

Fluency Tasks, *print 1 copy/student*

1. Two runners ran a 100-meter race. Pat ran the race in 10.38 seconds. Dan ran the race in 10.6 seconds. Who ran the race faster? How much faster did they run?

   Who ran the race faster? _____

   How much faster? _____ seconds

2. Solve.

   3 x 16 = _____ 16 x 42 = _____ 325 x 9 = _____

3. Solve.

   48 ÷ 4= _____ 216 ÷3= _____ 516 ÷12= _____

Grade 5: Midyear

4. What number goes on the line to make this equation true?

   56.72 x _____ = 567.2

   4.7 x _____ = 47

   3.2 x _____ = 320

   32 x _____ = 3,200

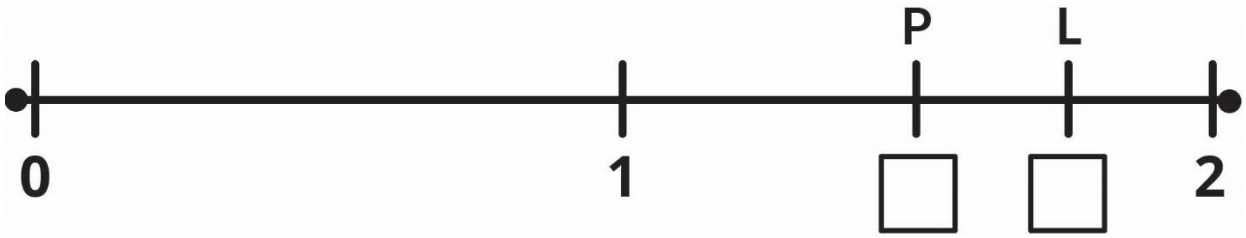
Solve:

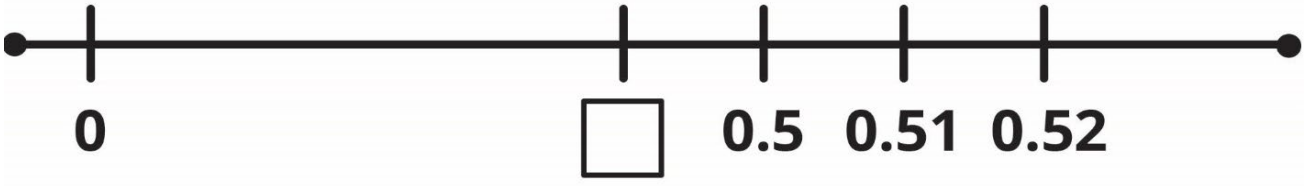
5. 7.8 + 0.4= _____ 0.99 + 0.1=_____ 0.6 + 0.4 = _____

Grade 5: Midyear

6. Number Lines: What number go in the boxes?

   Point P is halfway between 1 and 2.
   Point L is halfway between point P and 2.
   What <u>decimal</u> numbers do points P and L represent?





Grade 5: Midyear

Nombre _____ **Fecha** _____

1. El rectángulo de abajo representa una barra de dulce entera.

Dibuja un rectángulo para representar 0.1 de una barra de dulce.

¿Cuántos 0.1 de una barra de dulce necesitarías para tener una barra entera?

_____

2. Una caja contiene 8 frascos. Un frasco contiene 6 pepinillos. Hay 5 cajas llenas de frascos. ¿Cuántos pepinillos hay entonces?

Resuelve. Demuestra tu trabajo.

Respuesta: _____ pepinillos

Grade 5: Midyear

3. Jan trabaja en un almacén. Un envió de latas han llegado. Hay 12 latas en cada caja. Hay 18 cajas. ¿Cuántas latas hay entonces? Resuelve y escribe la ecuación que describe el problema.

Respuesta _____ latas

Ecuación_____

4. A veces cosas en el almacén de Jan necesitan estar empacadas para envíos. Jan necesita empacar 288 cajas dentro de 8 paletas. ¿Cuántas cajas irán dentro de cada paleta?

_____ cajas.
Escribe la ecuación que iguala

_____

Grade 5: Midyear

Universal Screener for Number Sense

Fluency Tasks, *print 1 copy/student*

1. Dos atletas corren una Carrera de 100-metros. Pat corre la carrera en 10.38 segundos. Dan corre la Carrera en 10.6 segundos. ¿Quién corrió la Carrera más rápido? ¿Qué más rápido la corrieron?

   ¿Quién corrió la Carrera más rápido? _____

   ¿Qué tan rápido? _____ segundos

2. Resuelve:

3 x 16+= _____ 16 x 42=_____ 325 x 9=_____

3. Resuelve:

48 ÷ 4= _____ 216 ÷3= _____ 516 ÷12= _____

Grade 5: Midyear

4. ¿Qué número va en la línea que resultara en esta ecuación ser correcta?

   56.72 ___ = 567.2

   4.7 x _____ = 47

   3.2 x _____ = 320

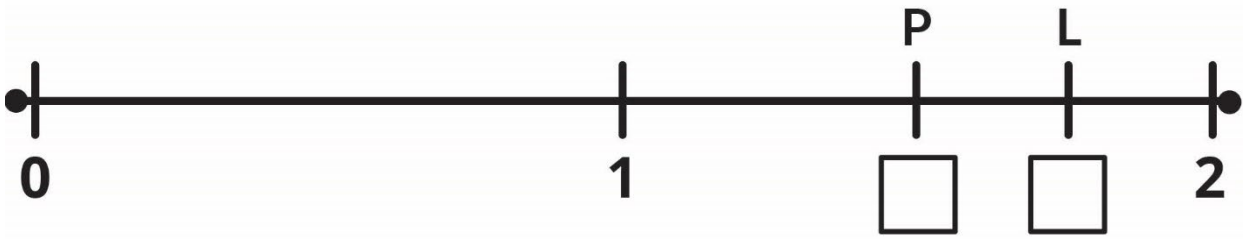
   32 x _____ = 3,200

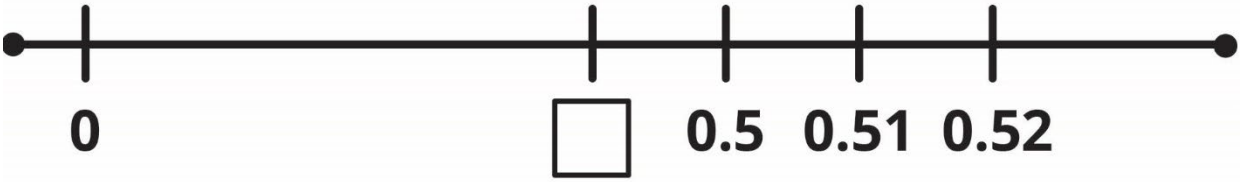
Resuelve:

5. 7.8 + 0.4= _____ 0.99 + 0.1=_____ 0.6 + 0.4 = _____

Grade 5: Midyear

6. Punto P es en el medio entre 1 y 2.
   Punto L es en el medio entre punto P y 2.
   ¿Qué números decimales puntos P y L representan?





0.213

$\frac{1}{2}$ mile

$1\frac{1}{4}$ mile

100.01

9,000-10

206,012

10-0.4

$3\frac{3}{5}$

$2-\frac{1}{4}$

Grade 6: Midyear

Universal Screener for Number Sense

Interview (about 5 minutes per student)

Interviews should be conducted one-on-one with students. This can be done by sitting with a single student and working through all of the questions, or can be done one or two questions at a time. For example, teachers might find that they can quickly and easily assess numeral identification by moving around the room to have students read the numbers, and then in a later session, set up a table with the necessary materials and pull students one at a time to complete the tasks that use materials. The interview portion of the assessment is designed for students to solve problems mentally. Do not provide paper and pencil for solving these tasks.

Task 1 requires the student to make a drawing. It could be that this question will require some think time. If it appears that the student might need time to process and create a drawing to explain their answer, to keep things efficient, allow the student the time that they need to work independently and return to the assessment later (or finish the assessment and have them continue working on the drawing and return to them later.)

Grade 6: Midyear

Universal Screener for Number Sense

Detailed Rubrics for Interview

Fraction Multiplication

CCSS.MATH.CONTENT.5.NF.B.4.B

Building Towards: CCSS.MATH.CONTENT.6.NS.A.1

1. Lay the card on the table with the length and width of the garden. **"What is the area of a rectangular outdoor garden if the length is $\frac{3}{4}$ yard and width is $\frac{1}{2}$ yard?"**
   Allow the student to solve the problem mentally. If the student answers without the unit (square yards) saying something like "three eighths", ask, **"Three eighths of what?"**
   Regardless of the student's answer to part one, provide the student with paper and pencil (leave the card on the table). Say, **"Draw the garden to explain how your solution relates to the area model."** (Allow the student to correct their original answer if they choose.)

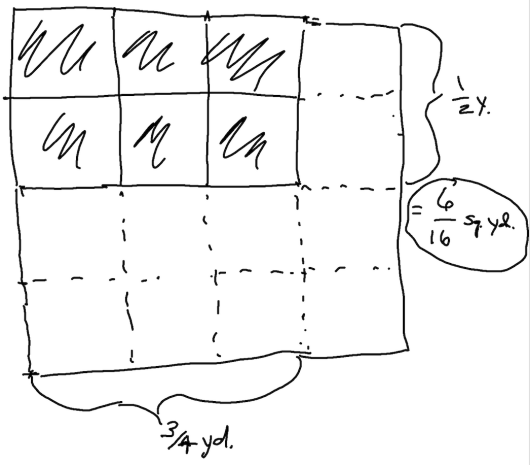
3	2	1
Correct and Fluent: Students are able to solve this problem and explain how the change patterns in the numerator and denominator of their solution relate to the area model and procedure created in their solution (i.e., $\frac{1}{2}$ of $\frac{3}{4}$ yields $\frac{3}{8}$ or an equivalent thereof. This could be explained as the total area of a square yard (partitioned into a 2 by 4 area model, with 1 by 3 shaded portion for the solution). See potential solutions for this score below.	**Correct but Uncertain:** Students are able to draw their solution and/or solve this problem procedurally but cannot explain the connection between the two.	**Unsuccessful:** Student does not accurately find the area of 3/8th sq. yard. If the student answers three eighths but does not seem to realize that they are talking about a fraction of a square yard (the unit) score as a 1.
Commentary: For students to develop fraction multiplication algorithms and use this to develop fraction division algorithms, Van de Walle et al. (2019) explain that students need to first create area models with two lengths a fractional unit. Next, students should focus on "how the denominators relate to the grid (or line) is partitioned and how the numerator affects the solution to the problem" (p. 393). By focusing on these patterns, students are able to anticipate solutions before drawing an area model and develop algorithms grounded in their own fraction conceptions and actions. If the student scores at a level one, this may be the result of their ability to draw a rectangular area model but not able to partition or disembed partitioned amounts out of the total area. This may also result in the students attributing an inaccurate procedure to this solution.		

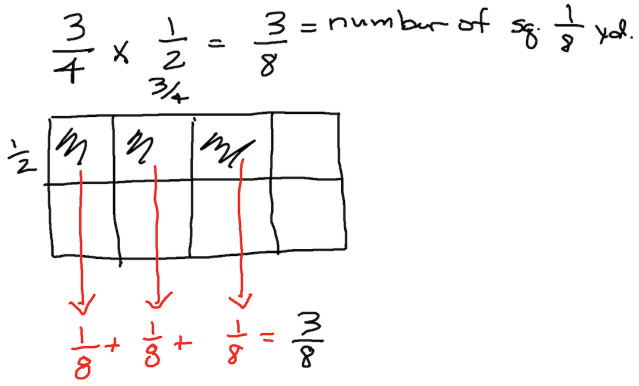
Grade 6: Midyear

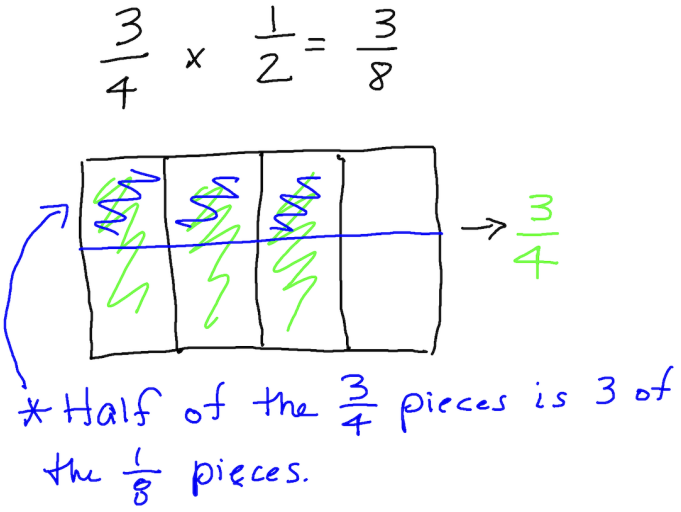
Universal Screener for Number Sense

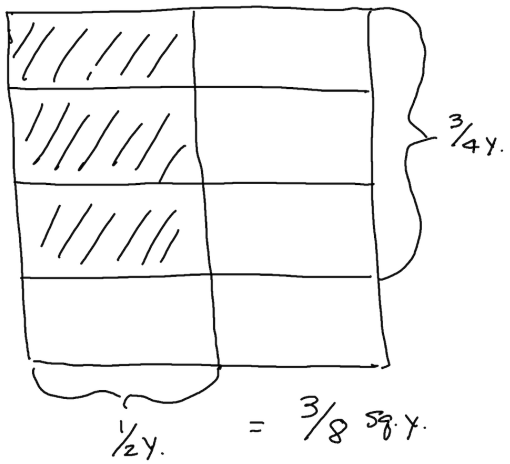
Detailed Rubrics for Interview

The key to a level 3 response is the ability to create a visual model to explain the solution of 38 square yards. Here are some examples of drawings students might make it a level 3 response for question 1:









Grade 6: Midyear

Universal Screener for Number Sense

Detailed Rubrics for Interview

Units and Fractions: CCSS.MATH.CONTENT.6.NS.A.1

2. Put the card with the rectangle representing the candy bar onto the table. Say, **"The rectangle below represents $\frac{3}{4}$ of a whole candy bar. "**

Question 2: Part 1:

"Draw a rectangle to represent $\frac{1}{2}$ of this candy bar."

If the student creates a rectangle that approximately represents ½ of the whole candy bar, continue to part 2. If not, continue to part 1b.

Part 1b.

If the student is struggling to draw a rectangle that would approximately represent ½ of a whole candy bar (possibly by partitioning the given bar into two equal parts) say, **"Ok. This rectangle shows $\frac{3}{4}$ of one candybar. Now draw a rectangle to represent one whole candy bar."**

If the student is unable to draw a rectangle that would accurately represent the whole candy bar score as a level zero, thank the student and conclude the interview.

If the student draws a rectangle that would approximately represent the full candy bar accurately, say, **" So, this is $\frac{3}{4}$ of the candy bar,"** gesture to the card, **"and your rectangle is 1 candy bar, now draw a rectangle to represent $\frac{1}{2}$ of this candy bar."**

If the student is unable to draw a rectangle that would accurately represent the half candy bar score as a level zero, thank the student and conclude the interview.

Grade 6: Midyear

Universal Screener for Number Sense

Interview and Detailed Rubrics

Question 2: Part 2:

Leave all the drawings and the card on the table. Say, **"How many $\frac{1}{2}$ candy bars would you need to make $\frac{3}{4}$ of a candy bar?"**

Part 2b:

If the student is struggling to understand what this question is asking, elaborate in the following way, **"Let's pretend all the candy bars have been cut in half. (gesture to the student's drawing of the half candy bar" So we have a lot of half candy bars. I want ¾ of a candy bar. How many of those half candy bars will I need to make ¾ of a candy bar?"

3	2	1	0
Correct: Student correctly solves part 1 and part 2 without relying on the scaffolded prompts (1b and 2b).	**Partially Correct:** Student correctly solves part 1 and part 2 by relying on one or both of the scaffolded prompts (1b and 2b).	**Incorrect/No Viable Strategy:** Student is able to create the whole candy bar, and uses that to accurately draw ½ the candy bar, but cannot solve Part 2.	**Unable to represent whole candy bar:** The student is unable to make a representation of ½ the candy bar, even after drawing the whole. Or Student is unable to represent the whole candy bar. (prompt 1b)
Commentary: When students develop conceptions for fraction division, they need to first connect their conceptions for whole number by whole number division to division of a fraction by a whole number. Next, students connect these division concepts to division of a whole number by a fraction. Finally, students are prepared to divide two fractions. Therefore, by scaffolding this task by asking students to draw a whole bar before constructing $\frac{1}{2}$ candy bars relative to $\frac{3}{4}$ of the candy bar allows students an opportunity to develop a referent whole before dividing $\frac{3}{4}$ of the candy bar into $\frac{1}{2}$ bar servings. Moreover, by asking students to use a unit fraction as the divisor disallows cognitive conflict students experience when the denominator changes, as a result of fraction division.			

Grade 6: Midyear

Universal Screener for Number Sense

Interview Quick Script

1. Lay the card with the garden on the table. **"What is the area of a rectangular outdoor garden if the length is $\frac{3}{4}$ yard and width is $\frac{1}{2}$ yard?"** Allow the student to solve the problem. If the student answers without the unit (square yards) saying something like "three eighths", ask, **"Three eighths of what?"**
   After the student provides an answer, or after enough time has been given say, **"Draw the garden to explain how your solution relates to the area model."** (Allow the student to correct their original answer if they choose.)

2. Put the card with the rectangle representing the candy bar onto the table. Say, **"The rectangle below represents $\frac{3}{4}$ of a whole candy bar. "**

Question 2: Part 1:

"Draw a rectangle to represent $\frac{1}{2}$ of this candy bar." Rephrase as necessary. For example, **"This is three fourths of a whole candy bar. What will it look like when you eat some more and there is only one half of the candy bar left?"**
If the student creates a rectangle that approximately represents ½ of the whole candy bar, continue to part 2. If not, continue to part 1b.

Question 2: Part 1b.

Say, **"Ok. This rectangle shows $\frac{3}{4}$ of one candybar. Now draw a rectangle to represent one whole candy bar."**

- *If the student is unable to draw a rectangle that would accurately represent the whole candy bar score as a level zero, thank the student and conclude the interview.*
- If the student draws a rectangle that would approximately represent the full candy bar accurately, say, **" So, this is three fourths of the candy bar,"** gesture to the card, **"and your rectangle is 1 candy bar, now draw a rectangle to represent half of a candy bar."**
  If the student is unable to draw a rectangle that would accurately represent the half candy bar score as a level zero, thank the student and conclude the interview.

Question 2: Part 2

Leave all the drawings and the card on the table. Say, **"How many half candy bars would you need to make three fourths of a candy bar?"**

Question 2: Part 2b:

If the student is struggling to understand, elaborate in the following way, **"Let's pretend all the candy bars have been cut in half. (gesture to the student's drawing of the half candy bar" So pretend we have a lot of half candy bars. I want ¾ of a candy bar. How many of those half candy bars will I need to make ¾ of a candy bar?"**

Grade 6: Midyear

Number Sense Screener

Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language of Assessment: □ English □ Spanish □ Other: _____

AVMR Assessment(s) Suggested? □ No □ Yes (see below)

Fractions of Fractions	*score*
1. "What is the area of a rectangular outdoor garden if the length is $\frac{3}{4}$ yard and width is $\frac{1}{2}$ yard?"	
Fractions and Units	*score*
Part 1"Draw a rectangle to represent $\frac{1}{2}$ of this candy bar."	
Part 2 ""How many half candy bars would you need to make three fourths of a candy bar?"	

Grade 6: Midyear

Number Sense Screener

Interview Cards – Print and prepare one set per teacher

Cards for interview

Outdoor Garden

Length ¾ yard
Width ½ yard

Outdoor Garden

What is the area of a rectangular outdoor garden if the length is ¾ yard and width is ½ yard?

The rectangle below represents ¾ of a candy bar.

Grade 6: Midyear

Universal Screener for Number Sense

SPANISH Interview and Detailed Rubrics

Fraction Multiplication

CCSS.MATH.CONTENT.5.NF.B.4.B

Building Towards: CCSS.MATH.CONTENT.6.NS.A.1

1. Coloque la tarjeta sobre la mesa con la longitud y anchura del jardín. "¿Cuál es el área de un jardín rectangular al aire libre si la longitud es ,3-4? yarda y ancho es ,1-2. yarda?" Permita que el estudiante resuelva el problema mentalmente. Si el estudiante responde sin que la unidad (yardas cuadradas) diga algo como "tres octavos", pregúntele: "¿Tres octavos de qué?" Independientemente de la respuesta del estudiante a la primera parte, proporcione al estudiante papel y lápiz (deje la tarjeta sobre la mesa). Diga: "Dibuja el jardín para explicar cómo se relaciona tu solución con el modelo del área". (Permita que el alumno corrija su respuesta original si así lo desea).

3	2	1
Correct and Fluent: Students are able to solve this problem and explain how the change patterns in the numerator and denominator of their solution relate to the area model and procedure created in their solution (i.e., $\frac{1}{2}$ of $\frac{3}{4}$ yields $\frac{3}{8}$ or an equivalent thereof. This could be explained as the total area of a square yard (partitioned into a 2 by 4 area model, with 1 by 3 shaded portion for the solution). See potential solutions for this score below.	**Correct but Uncertain:** Students are able to draw their solution and/or solve this problem procedurally but cannot explain the connection between the two.	**Unsuccessful:** Student does not accurately find the area of 3/8th sq. yard. If the student answers three eighths but does not seem to realize that they are talking about a fraction of a square yard (the unit) score as a 1.
Commentary: For students to develop fraction multiplication algorithms and use this to develop fraction division algorithms, Van de Walle et al. (2019) explain that students need to first create area models with two lengths a fractional unit. Next, students should focus on "how the denominators relate to the grid (or line) is partitioned and how the numerator affects the solution to the problem" (p. 393). By focusing on these patterns, students are able to anticipate solutions before drawing an area model and develop algorithms grounded in their own fraction conceptions and actions. If the student scores at a level one, this may be the result of their ability to draw a rectangular area model but not able to partition or disembed partitioned amounts out of the total area. This may also result in the students attributing an inaccurate procedure to this solution.		

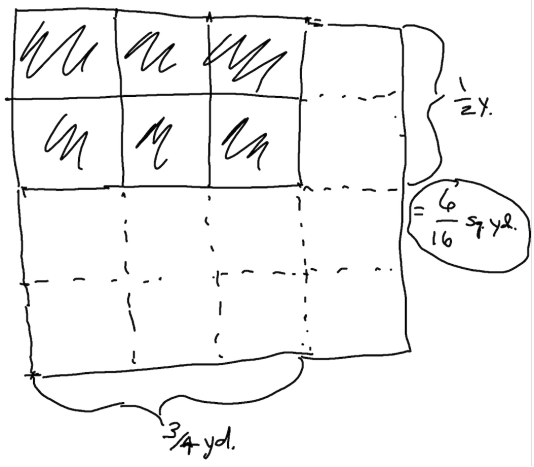
Grade 6: Midyear

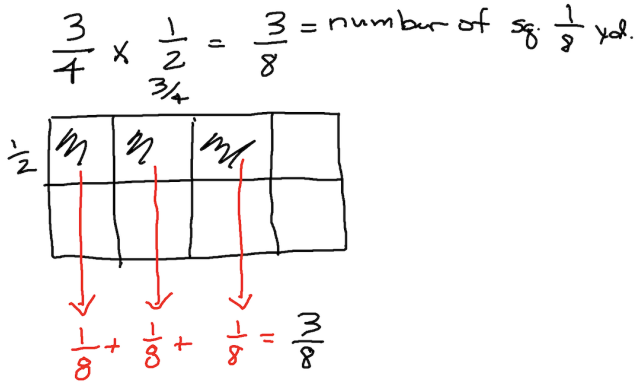
Universal Screener for Number Sense

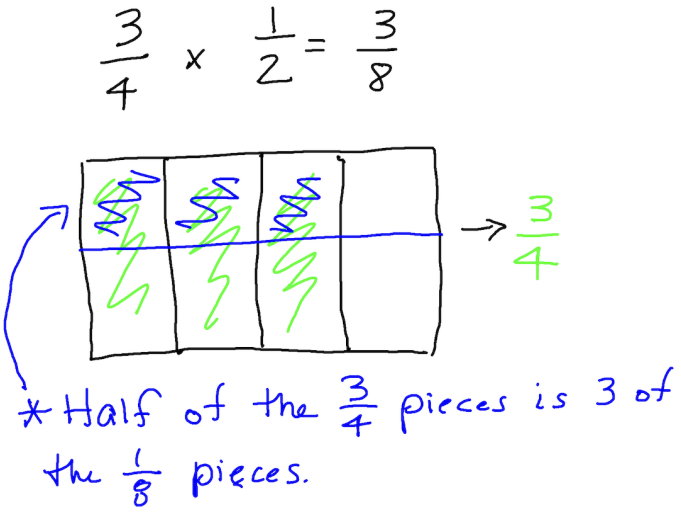
Detailed Rubrics for Interview

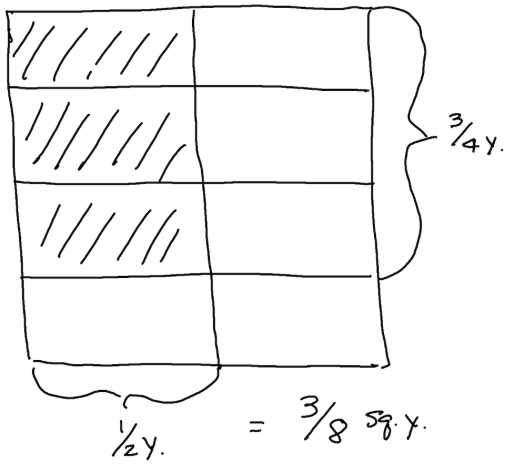
Pregunta #1 continuado

La clave para una respuesta de nivel 3 es la capacidad de crear un modelo visual para explicar la solución de 38 yardas cuadradas. Aquí hay algunos ejemplos de dibujos que los estudiantes podrían hacer una respuesta de nivel 3 para la pregunta 1:









Grade 6: Midyear

Universal Screener for Number Sense

Spanish Detailed Rubrics for Interview

Unidades y fracciones: CCSS. MATEMÁTICA. CONTENIDO.6.NS.A.1

2. Coloque la tarjeta con el rectángulo que representa la barra de caramelo sobre la mesa. Diga: **"El rectángulo de abajo representa una barra de chocolate entero".** $\frac{3}{4}$

Pregunta 2: Parte 1:

"Dibuja un rectángulo para representar esta barra de chocolate". $\frac{1}{2}$

Si el estudiante crea un rectángulo que representa aproximadamente la mitad de toda la barra de chocolate, continúe con la parte 2. Si no es así, continúe con la parte 1b.

Parte 1b.

** **Si el estudiante tiene dificultades para dibujar un rectángulo que representaría aproximadamente la mitad de una barra de caramelo entera** (posiblemente dividiendo la barra dada en dos partes iguales) diga: **"Ok. Este rectángulo muestra una barra de chocolate. Ahora dibuja un rectángulo para representar una barra de caramelo entera".** $\frac{3}{4}$

Si el estudiante no puede dibujar un rectángulo que represente con precisión toda la puntuación de la barra de caramelo como un nivel cero, agradezca al estudiante y concluya la entrevista.

Si el estudiante dibuja un rectángulo que representa aproximadamente la barra de caramelo completa con precisión, diga: **"Entonces, esto es la barra de caramelo", haga un gesto hacia la tarjeta** $\frac{3}{4}$, "y su rectángulo es 1 barra de caramelo, ahora dibuja un rectángulo para representar esta barra de caramelo.$\frac{1}{2}$"

Si el estudiante no puede dibujar un rectángulo que represente con precisión la medida de la media barra de caramelo como un nivel cero, Agradézcale al estudiante y concluya la entrevista.

Grade 6: Midyear

Universal Screener for Number Sense

SPANISH: Detailed Rubrics for Interview

Pregunta 2: Parte 2:

Deja todos los dibujos y la tarjeta sobre la mesa. Diga: **"¿Cuántas barras de caramelo necesitarías hacer de una barra de caramelo?"** $\frac{1}{2}\frac{3}{4}$

Parte 2b:

** Si el estudiante está esforzándose por entender lo que esta pregunta establece, elabore de la siguiente manera: **"Supongamos que todas las barras de caramelo se han cortado por la mitad. (indicando al dibujo del estudiante de la mitad de la barra de caramelo" Así que tenemos muchas barras de caramelo en mitad. Quiero 3/4 de una barra de chocolate. ¿Cuántas de esas mitades de barras de caramelo necesitaré para hacer 3/4 de una barra de chocolate?"**

3	2	1	0
Correct: Student correctly solves part 1 and part 2 without relying on the scaffolded prompts (1b and 2b).	**Partially Correct:** Student correctly solves part 1 and part 2 by relying on one or both of the scaffolded prompts (1b and 2b).	**Incorrect/No Viable Strategy:** Student is able to create the whole candy bar, and uses that to accurately draw ½ the candy bar, but cannot solve Part 2.	**Unable to represent whole candy bar:** The student is unable to make a representation of ½ the candy bar, even after drawing the whole. Or Student is unable to represent the whole candy bar. (prompt 1b)
Commentary: When students develop conceptions for fraction division, they need to first connect their conceptions for whole number by whole number division to division of a fraction by a whole number. Next, students connect these division concepts to division of a whole number by a fraction. Finally, students are prepared to divide two fractions. Therefore, by scaffolding this task by asking students to draw a whole bar before constructing $\frac{1}{2}$ candy bars relative to $\frac{3}{4}$ of the candy bar allows students an opportunity to develop a referent whole before dividing $\frac{3}{4}$ of the candy bar into $\frac{1}{2}$ bar servings. Moreover, by asking students to use a unit fraction as the divisor disallows cognitive conflict students experience when the denominator changes, as a result of fraction division.			

Grade 6: Midyear

Universal Screener for Number Sense

SPANISH: Quick Script

1. Coloque la tarjeta con el jardín sobre la mesa. **"¿Cuál es el área de un jardín rectangular si la longitud es $\frac{3}{4}$ yarda y el ancho es $\frac{1}{2}$ de una yarda?"** Permita que el estudiante resuelva el problema. Si el estudiante responde sin que la unidad (yardas cuadradas) diga algo como "tres octavos", pregúntele: **"¿Tres octavos de qué?"**
   Después de que el estudiante de una respuesta, o después de que se le haya dado suficiente tiempo, dígale: **"Dibuja el jardín para explicar cómo se relaciona tu solución con el modelo del área".** (Permita al alumno que corrija su respuesta original si así lo desee).

2. Coloque la tarjeta con el rectángulo que representa la barra de caramelo sobre la mesa. Dígale: **"El rectángulo de abajo representa una barra de chocolate entera".** $\frac{3}{4}$

   Preguntan 2 : Parte 1:

   "Dibuja un rectángulo para representar esta barra de chocolate". $\frac{1}{2}$Reformule la pregunta según sea necesario. Por ejemplo, **"Esto es tres cuartas partes de una barra de chocolate entera. ¿Cómo se verá cuando comas un poco más y solo quede la mitad de la barra de chocolate?"**
   Si el estudiante crea un rectángulo que representa aproximadamente la mitad de toda la barra de chocolate, continúe con la parte 2. Si no es así, continúe con la parte 1b.

   Pregunta 2: Parte 1b.

   Diga: **"Ok. Este rectángulo muestra una barra de chocolate. Ahora dibuja un rectángulo para representar una barra de caramelo entera".** $\frac{3}{4}$

   - *Si el estudiante no puede dibujar un rectángulo que represente con precisión toda la puntuación de la barra de caramelo como un nivel cero, agradézcale al estudiante y concluya la entrevista.*
   - Si el estudiante dibuja un rectángulo que representaría aproximadamente la barra de caramelo completa con precisión, diga: "Entonces, esto es tres cuartas partes **de la barra de caramelo", indique un gesto hacia la tarjeta,** "y su rectángulo es 1 barra de caramelo, ahora dibuja un rectángulo para representar la mitad de una barra de chocolate. **"**
     Si el estudiante no puede dibujar un rectángulo que represente con precisión la media barra de caramelo como un nivel cero, agradezca al estudiante y concluya la entrevista.

Continúa al otro lado

Grade 6: Midyear

Pregunta 2: Parte 2

Deja todos los dibujos y la tarjeta sobre la mesa. Diga: **"¿Cuántas mitades de barras de caramelo necesitarías para hacer tres cuartas partes de una barra de caramelo?"**

Pregunta 2: Parte 2b:

Si el estudiante tiene dificultades para entender, elabora de la siguiente manera:

"Supongamos que todas las barras de caramelo se han cortado por la mitad. (gesto hacia el dibujo del estudiante de la mitad de la barra de caramelo" Así que imagina que tenemos muchas barras de caramelo. Quiero 3/4 de una barra de chocolate. ¿Cuántas de esas medias barras de caramelo necesitaré para hacer 3/4 de una barra de chocolate?"

Grade 6: Midyear

Number Sense Screener

SPANISH Note Catcher,

print 1 copy/student

Name: _____

Date: _____ Teacher: _____

Language of Assessment: □ English □ Spanish □ Other: _____

AVMR Assessment(s) Suggested? □ No □ Yes (see below)

Fracciones de fracciones	*score*
1. "¿Cuál es el área de un jardín rectangular si la longitud es $\frac{3}{4}$ yarda y el ancho es $\frac{1}{2}$ yarda?"	

Fracciones y unidades	*score*
Parte 1"Dibuja un rectángulo para representar esta barra de chocolate". $\frac{1}{2}$	
Parte 2 "¿Cuántas medias barras de caramelo necesitarías para hacer tres cuartas partes de una barra de caramelo?"	

Grade 6: Midyear

Number Sense Screener

SPANISH Interview Cards – Print and prepare one set per teacher

Tarjetas para entrevista

Jardín al aire libre

Longitud 3/4 yarda
Ancho 1/2 yarda

Jardín al aire libre

¿Cuál es el área de un jardín rectangular al aire libre si la longitud es de 3/4 de yarda y el ancho es de 1/2 yarda?

El rectángulo de abajo representa 3/4 de una barra de chocolate.

Grade 6: Midyear

Number Sense Screener

Written Component

Written Portion (30-45 minutes)

The written portion of the assessment should be conducted as you would any regular classroom test. Direct the students to work independently on the assessment.

- Proctor actively, moving around the room to ensure the integrity of the assessment.
- Ample space is provided on the assessment for students to show work. No scratch paper should be necessary.
- Do not allow for the use of calculators or multiplication tables.

If you are uncertain of a student's answer to a question, feel free to probe and interact with the student. For example, the second question related to using the 3:1 ratio. If you see a student response that you are having trouble making sense of, ask the student what they have done in order to understand. Notice the gestures that students make as they engage with this task. However, as you work with students in this way, attempt not to provide unnecessary supports like reading the numbers to them.

Grade 6: Midyear

Number Sense Screener

Written Section

1. **Numeral Writing**

Write these numbers in standard form:

a.) Negative seven

_____

b.) Twenty-three twelfths

_____

c.) Five-thousand, six-hundred twelve and four-hundred eighty two thousandths

_____

d.) Negative thirty-two

_____

Grade 6: Midyear

Number Sense Screener: Written Section

2. Ratio Understandings

Use this information for parts 1 and two below:

For every 12 votes John receives, Beth receives 36 votes. This describes a 12:36 ratio.

Part 1:

John received 24 votes; how many votes did Beth receive? _____

How did you work it out?

_____

_____

_____

_____

Part 2: Refer again to the 12:36 ration described above.

Beth received 3 votes. How many votes did John receive? _____

How did you work it out?

_____

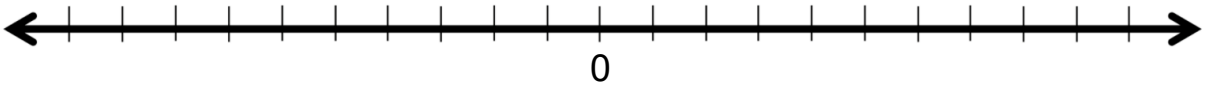
_____

_____

_____

Grade 6: Midyear

3. **Number Relationships**
   Place the numbers -3 and 3 on the number line?



How did you know where to place the 3 and -3?

_____

_____

_____

_____

How far apart are the two numbers? _____

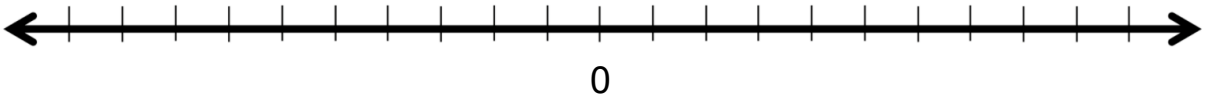
How far from zero are each of these numbers?

_____

Add the two numbers together. What is the answer? _____

Grade 6: Midyear

4. **Number Relationships**
   If the zero is located here on this number line, where would -6 and -9 be placed?



Part 1: Place the numbers -6 and -9 on the number line.

Part 2: Using "<" or ">" symbols, show -6 as greater than or as less than -9 below:

-6 ____ -9

Part 3: If the temperature in Chicago is -6 degrees Fahrenheit and in Denver it is -9 degrees Fahrenheit, which city is warmer?

_____

Grade 6: Midyear

5. **Changes in Rate Reasoning**

   Dan builds furniture. The table shows the minimum amount of time it takes Dan to build furniture.

Furniture	Minimum Time to Make Furniture (hours)
Child Table	2
Bench	1
Dining Room Table	4
China Cabinet	7

How many Child Tables can Dan build in 10 hours?

_____

Explain how you solved the problem.

_____

_____

_____

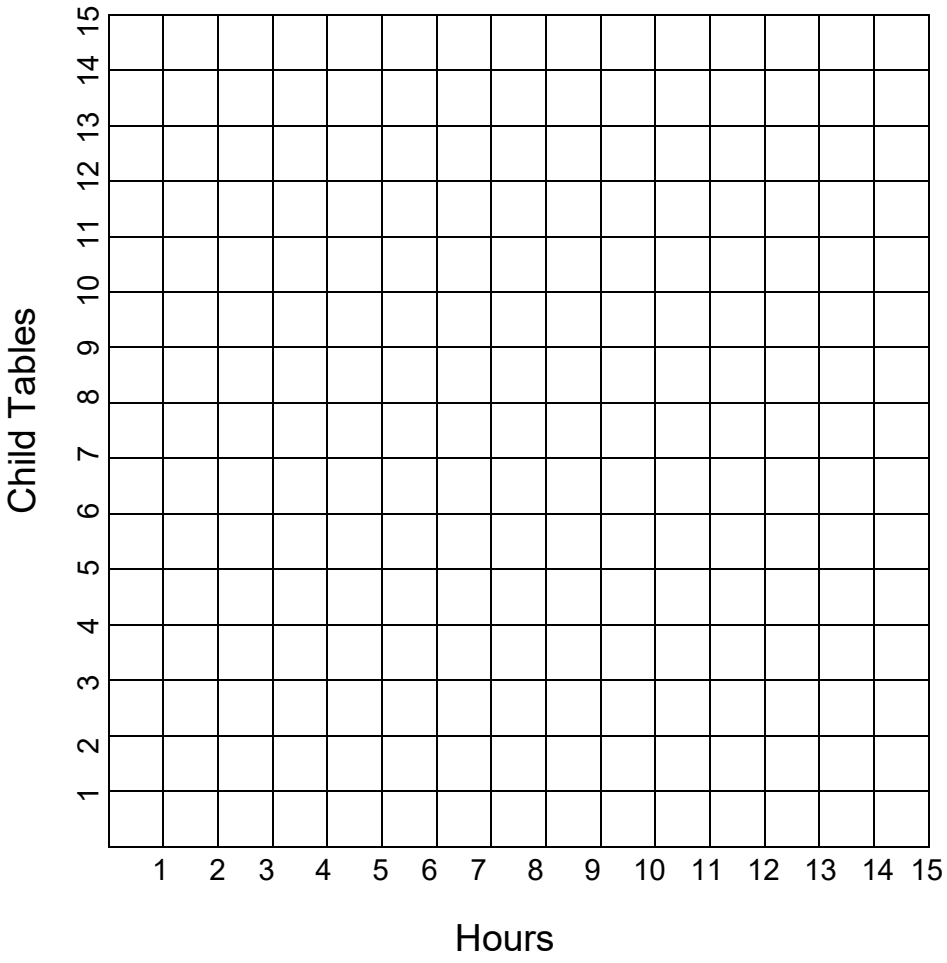
_____

Grade 6: Midyear

6. **Changes in Rate Reasoning**

Dan gets faster at building tables. **Dan can now make a Child Table in exactly 1.5 hours.** Complete the table and then graph the number of children's tables Dan can make over time.

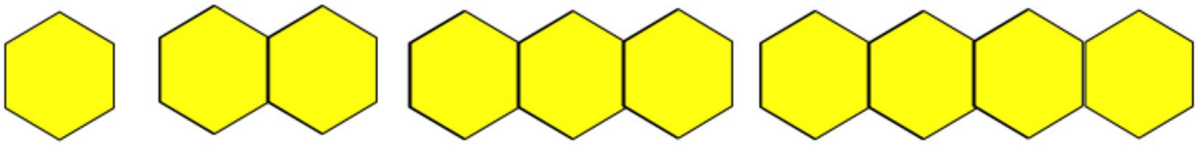
Hours	Number of Child Tables Made
	1
	2
	5
	10



Grade 6: Midyear

7. **Reason and Solve Equations***

Trains 1, 2, 3 and 4 (shown below) are the first 4 trains in the hexagon pattern. The first train in this pattern consists of one regular hexagon. For each subsequent train, one additional hexagon is added.



Train 1 Train 2 Train 3 Train 4

Each side = 1 unit

Part 1: Compute the perimeter for each of the first four trains. Write the perimeters here:

Train 1_____ Train 2_____ Train 3 _____ Train 4 _____

Part 2: Draw the fifth train and compute the perimeter of the train.

Perimeter = _____

Part 3: Without drawing it, determine the perimeter of the 10th train.

Perimeter of 10th train = _____

Grade 6: Midyear

Part 4: Tell how you could figure out the perimeter of any length of train in the pattern.

Use words and/or numbers and equations

_____

_____

_____

_____

_____

_____

Grade 6: Midyear

Number Sense Screener

Written Component

Written Portion (30-45 minutes)

The written portion of the assessment should be conducted as you would any regular classroom test. Direct the students to work independently on the assessment.

- Proctor actively, moving around the room to ensure the integrity of the assessment.
- Ample space is provided on the assessment for students to show work. No scratch paper should be necessary.
- Do not allow for the use of calculators or multiplication tables.

If you are uncertain of a student's answer to a question, feel free to probe and interact with the student. For example, the second question related to using the 3:1 ratio. If you see a student response that you are having trouble making sense of, ask the student what they have done in order to understand. Notice the gestures that students make as they engage with this task. However, as you work with students in this way, attempt not to provide unnecessary supports like reading the numbers to them.

Grade 6: Midyear

Number Sense Screener

Written Section

1. Escritura numérica

Escriba estos números en forma estándar:

a.) Siete negativos

_____

b.) Veintitrés doceavas partes

_____

c.) Cinco mil, seiscientos doce y cuatrocientos ochenta y dos milésimos

_____

d.) Treinta y dos negativos

_____

Grade 6: Midyear

Number Sense Screener: Written Section

2. Entendimientos de la proporción

Utilice esta información para las partes 1 y dos a continuación:

Por cada 12 votos que recibe Juan, Beth recibe 36 votos. Esto describe una proporción de 12:36.

Parte 1:

Juan recibió 24 votos; ¿cuántos votos recibió Beth? _____

¿Como lo resolviste?

_____

_____

_____

_____

Parte 2: Refiérase nuevamente a la ración de 12:36 descrita anteriormente.

Beth recibió 3 votos. ¿Cuántos votos recibió Juan? _____

¿Como lo resolviste?

_____

_____

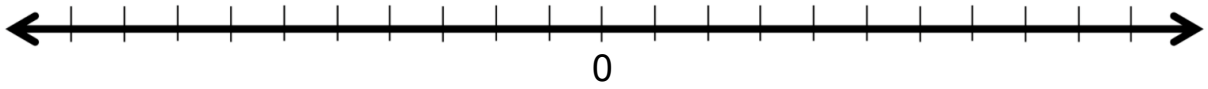
_____

_____

Grade 6: Midyear

3. **Relaciones numéricas**

¿Colocar los números -3 y 3 en la recta numérica?



¿Cómo supiste dónde colocar el 3 y el -3?

_____

_____

_____

_____

¿Qué tan separados están los dos números? _____

¿Qué tan lejos de cero están cada uno de estos números?

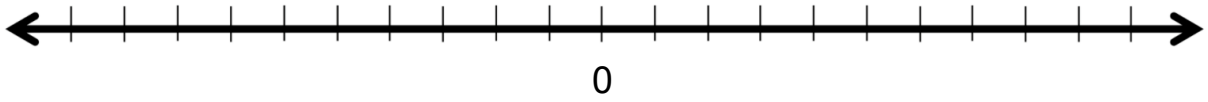
_____

Suma los dos números. ¿Cuál es la respuesta? _____

Grade 6: Midyear

4. **Relaciones numéricas**

Si el cero se encuentra aquí en esta recta numérica, ¿dónde se colocarían -6 y -9?



Parte 1: Coloque los números -6 y -9 en la recta numérica.

Parte 2: Usando los símbolos "<" o ">", muestre -6 como mayor o menor que -9 a continuación:

-6 ____ -9

Parte 3: Si la temperatura en Chicago es de -6 grados Fahrenheit y en Denver es de -9 grados Fahrenheit, ¿qué ciudad es más cálida?

_____

Grade 6: Midyear

5. Cambios en el razonamiento de tarifas

Pedro construye muebles. La tabla muestra la cantidad mínima de tiempo que le toma a Pedro construir muebles.

Mueble	Tiempo mínimo para hacer muebles (horas)
Mesa infantil	2
Banco	1
Mesa de comedor	4
Gabinete de China	7

¿Cuántas mesas infantiles puede construir Pedro en 10 horas?

_____

Explique cómo resolvió el problema.

_____

_____

_____

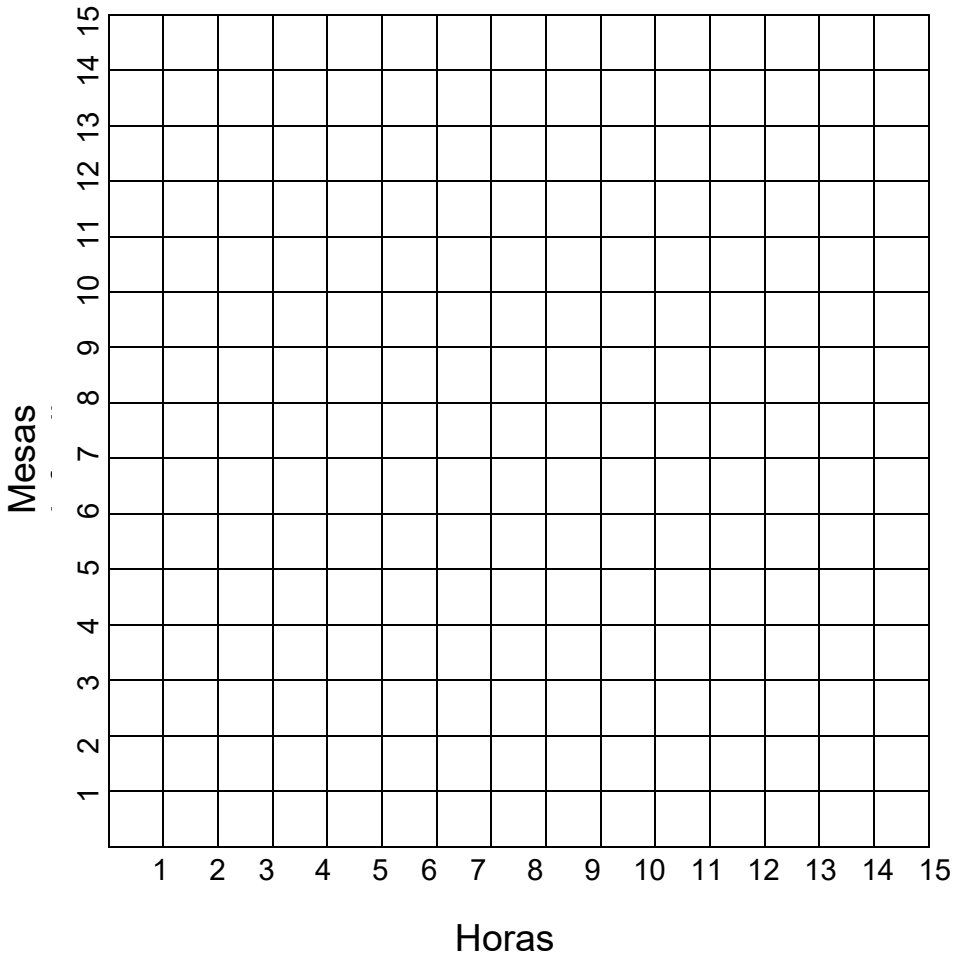
_____

Grade 6: Midyear

6. Cambios en el razonamiento de tarifas

Pedro se vuelve más rápido en la construcción de mesas. **Pedro ahora puede hacer una mesa infantil en exactamente 1,5 horas.** Complete la tabla y luego grafique el número de tablas infantiles que Pedro puede hacer con el tiempo.

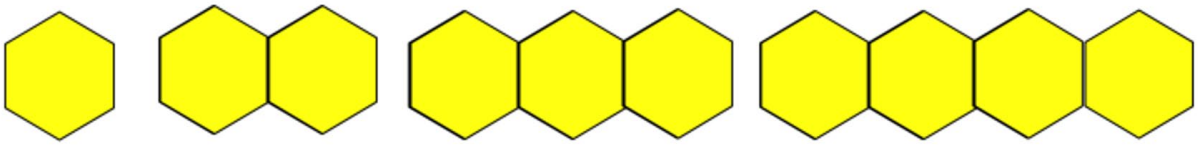
Horas	Número de Mesas secundarias realizadas
	1
	2
	5
	10



Grade 6: Midyear

7. Razonar y resolver ecuaciones*

Los trenes 1, 2, 3 y 4 (que se muestran a continuación) son los primeros 4 trenes en el patrón hexagonal. El primer tren en este patrón consiste en un hexágono regular. Para cada tren subsiguiente, se añade un hexágono adicional.



Tren 1 Tren 2 Tren 3 Tren 4

Cada lado = 1 unidad

Parte 1: Calcular el perímetro de cada uno de los primeros cuatro trenes. Escribe los perímetros aquí:

Tren 1_____ Tren 2_____ Tren 3 _____ Tren 4 _____

Parte 2: Dibuja el quinto tren y calcula el perímetro del tren.

Perímetro = _____

Parte 3: Sin dibujarlo, determine el perímetro del tren 10.

Perímetro del 10º tren = _____

Grade 6: Midyear

Parte 4: Diga cómo podría calcular el perímetro de cualquier longitud de tren en el patrón.

Usar palabras y/o números y ecuaciones

_____

_____

_____

_____

_____

_____

Grade 6: Midyear

Written Component: Scoring Guide

1. **Numeral Writing:** CCSS.MATH.CONTENT.6.NS.C.6

3	2	1
Correct: All four numerals are written correctly	**Partially Correct:** Two numerals are written correctly.	**Incorrect:** One or zero numerals are written correctly.
Commentary: The ability to write numbers correctly demonstrates a connection between the linguistic and symbolic aspects of mathematics. Although one could say that true number sense is evident when students demonstrate an understanding of the quantities that these numbers represent, this language to symbol connection is critical and is best assessed in isolation.		

2. **Ratio Understandings:** CCSS.MATH.CONTENT.6.RP.A.1

3	2	1
Correct: Both part 1 and part 2 are answered correctly.	**Partially Correct:** Part 1 or part 2 are answered correctly.	**Incorrect:** Incorrectly answers both part 1 and part 2.
Commentary: Van de Walle et al. (2019) explains that the goal of these types of tasks is to press students to conceptualize a ratio as one unit (described as a "composed unit", p. 438). To promote students' development of a composed unit, it is critical to have students iterate a unit in the ratio and partition a unit in the ratio. For example, in part one of this assessment item, the student is required to iterate the 12:36 ratio to determine how many votes Beth received if John received 24 votes. Smith and Stein (2018) describe this as a type of "scaling up" activity. In part two, the student is required to partition the 12:36 ratio to determine the unit rate to explain how many votes John received if Beth received three votes. This requires students to partition the 12:36 ratio and create a unit rate (Smith & Stein, 2018; Van de Walle et al., 2019). By engaging students in both an iteration and partitioning of a ratio, research findings explain that students are creating a composed unit.		

Grade 6: Midyear

3. **Negative Number Relationships:** CCSS.MATH.CONTENT.6.NS.C.6.A

3	2	1
Correct: Places numbers correctly on the number line and correctly answers all questions.	**Partially Correct:** Places numbers correctly on the number line OR correctly answers questions OR correctly answers some of the questions and places numbers correctly on the numberline.	**Incorrect:** Is unable to place numbers on the number line AND correctly answer any of the questions.
Commentary: Van de Walle et al. (2019) explain that students will first treat negative numbers in the same way they treat negative numbers. This means that the negative symbol may be ignored and the student considers "-3" and "3" to have the same value. By asking students to both place the integers on the number line, explain the distance between them, and describe additive relationships these two numbers have as zero pairs, we are attempting to understand what conceptions the students have around this negative symbol. This assessment item is also designed to determine if the student sees the number line as symmetric around zero (Bofferding, 2014).		

4. **Negative Number Relationships:** CCSS.MATH.CONTENT.6.NS.C.7.B

3	2	1
Correct: Places numbers correctly on the number line and correctly answers all questions.	**Partially Correct:** Places numbers correctly on the number line OR correctly answers questions OR correctly answers some of the questions and places numbers correctly on the numberline.	**Incorrect:** Is unable to place numbers on the number line AND correctly answer any of the questions.
Commentary: Van de Walle et al. (2019) explain that students will first treat negative numbers in the same way they treat negative numbers. This means that the negative symbol may be ignored and the student considers "-6" and "-9" to have the same value as "6" and "9". By asking students to both place the integers on the number line, order numbers, and make sense of these integer concepts in a real-life linear context , we are attempting to understand what conceptions the students have around this negative symbol. Van de Walle et al. (2019) also explain that by situating assessment items in temperature contexts, we have a good chance of measuring students' integer concepts in a context most familiar to them.		

Grade 6: Midyear

5. **Changes in Rate Reasoning:** CCSS.MATH.CONTENT.6.RP.A.3.A, CCSS.MATH.CONTENT.6.RP.A.3.B

3	2	1
Correct: Correctly answers the assessment item AND provides a unit rate of 2 hours per table, a scaling factor of X5, or explains how they scaled up by counting by "twos" or by doubling and counting by "twos.".	**Partially Correct:** Correctly answers the assessment item AND does not provide a viable strategy or explanation, OR incorrectly answers the assessment item AND does provide a viable strategy or explanation.	**Incorrect:** Incorrectly answers the assessment item AND does not provide a viable strategy or explanation.
Commentary: There are essentially three types of strategies that the research explains students use when solving rate of change tasks. (1) The most sophisticated solution is for students to use a unit rate (i.e., 1:2) to solve the problem. (2) A more common strategy is for students to create a scale factor, relying on multiplicative concepts (i.e., X5). (3) The most rudimentary strategy is for students to scale up the given rate (in this case it is the unit rate) wherein they might count by units of two hours until they reach 10 hours or they might double the twos until they are close to 10 hours and then add two more hours. In doing the final strategy the student might draw a table or draw a list of numbers to keep track of the units two and one while scaling up to 10 hours.		

Grade 6: Midyear

6. **Changes in Rate Reasoning:** CCSS.MATH.CONTENT.6.RP.A.3.A, CCSS.MATH.CONTENT.6.RP.A.3.B

3	2	1
Correct: Correctly graphs the rate of change with the unit rate of "1 table:1.5 hours" AND completes the table correctly.	**Partially Correct:** Correctly graphs the rate of change with the unit rate of "1 table:1.5 hours" but does not complete the table correctly. OR Incorrectly graphs the rate of change with the unit rate of "1 table:1.5 hours" but is able to complete the table correctly.	**Incorrect:** Incorrectly graphs the rate of change with the unit rate of "1 table:1.5 hours" AND does not complete the table correctly.
Commentary: Van de Walle (2019) explains that ratio tables can be used to determine the unit rate of specific relationships. By asking the students to correctly complete the table, we are requiring the student to determine what this rate is for this specific context and how it changes over time. By connecting this table to a graph, the student is evidencing their ability to reason about covariational change, wherein a variable represents a quantity that varies (Van de Walle et al., 2019). In other words, the students have to conceptualize the rate of change in hours to the rate of Dan's productivity, as measured by his construction of children's tables. This covariational reasoning is essential for children's development of function in higher levels of mathematics. In fact, research findings point to the importance several representations have in students' development of functions and patterns in mathematics. In particular, students would be developing five different representations (verbal/written, contextual, graph, symbols, and table) of their reasoning when solving function tasks. This assessment item captures three of the five representations in the students' solutions.		

Grade 6: Midyear

7. **Reason and Solve Equations:** CCSS.MATH.CONTENT.6.EE.B.6

3	2	1
Correct: Correctly answers all four parts, with an explanation in part 4 that establishes patterns and an equation similar for 4n + 2.	**Partially Correct:** Correctly answers parts 1 and 2. Correctly answers 3 or 4, and explains some patterns in part 4 but does not provide an equation similar for 4n + 2.	**Incorrect:** Incorrectly answers parts 1 and/or 2. Incorrectly answers 3 and 4.
Commentary: By providing students with opportunities to describe and reflect on visual patterns of growth or decline, describe and reflect reflect on their counting patterns, and describe and reflect on language used to generalize patterns, they are given opportunities to develop equations wherein the variables are used as unknown values. Moreover, by assessing students' ability to solve problems like this, they are given multiple entry points and multiple exit points. By assessing students' entry points and exit points, educators can determine how they are able to represent variables as unknown values and how this may infor their foundational algebraic reasoning. When determining accuracy of your students' responses, consider multiple equations that equal 4n + 2.		

Grade 6: Midyear

References for Grade 6 Midyear USNS

*Developed by Michael D. Steele at the University of Wisconsin-Milwaukee and Margaret Smith at the University of Pittsburgh.

Bofferding, L. (2014). Negative integer understanding: Characterizing first graders' mental models. *Journal for Research in Mathematics Education, 45*(2), 194-245.

Smith, M. S., & Stein, M. K. (2018). *5 Practices for Orchestrating Productive Mathematics Discussions (2nd Ed.).* The National Council of Teachers of Mathematics, Inc..

Van de Walle, J. A., Karp. K. S., & Bay-Williams, J. M. (2019). *Elementary and Middle School Mathematics: Teaching Developmentally (10th Ed.)*. Pearson.

USNS

Universal Screeners for Number Sense

Spring

July 2024

Forward

The Spring USNS assessments are intended to provide a final measure of number sense aligned with end-of-year expectations for each grade. These are intended to provide information for end of year instruction. For this reason, it is recommended that teachers do assessments with about 4 to 6 weeks remaining in the year. These assessments also may serve to guide summer school efforts. The spring assessments also provide one more data point for understanding student growth.

Each of the scoring rubrics comes with a brief commentary to elaborate on the ideas that are behind the tasks. These are written to improve inter-rater reliability and to help users understand how the tasks relates to the big ideas of number sense.

The components of the assessments are as follows:

Kindergarten - 4th grades: Interview and written
5th and 6th Grade: Written

The 5th grade assessment is written as a capstone assessment in that it assesses some skills from the earlier grades. The intention is to provide an assessment that is valuable for flagging students who will quite likely need significant support in middle school, while also serving as a growth measure in the series.

THANKS!

This project would not have been possible without the collaboration and feedback from many people. I am grateful to the research community for the work they have done over the years to help us understand and hone in on this still somewhat amorphous concept that we call number sense. I am grateful for the many suggestions and questions (and corrections) that I have received from teachers across the country. Thanks to all the Forefront users: without your patronage and participation this project would not be possible, and it will continue to improve as a result. Thanks to the Facebook Number Sense Screener community for the questions, suggestions, and feedback. And thanks to Martha Ruttle, and Mary Ann Davis whose suggestions and conversations have been invaluable for the project. Thanks to Anna Grace for putting in the extra hours to pull this over the finish line on time. Lastly, thanks to the teachers and leaders of Boulder Valley School District whose feedback on this project over the years has shaped what this project has become.

Spring Universal Screeners for Number Sense

Overall Performance Levels 2023-2024

Performance levels should be calculated using the performance levels for each task or task set. Forefront will do this automatically. For written and fluency tasks, enter point values as described in the scoring guides.

Kindergarten

Well Below Basic	Below Basic	Basic	Proficient
9-13	14-19	20-24	25-30

First Grade

Well Below Basic	Below Basic	Basic	Proficient
6-11	12-17	18-29	30-36

2nd Grade

Well Below Basic	Below Basic	Basic	Proficient
8-14	15-21	22-26	27-33

3rd Grade

Well Below Basic	Below Basic	Basic	Proficient
10-15	16-21	22-26	27-33

4th Grade

Well Below Basic	Below Basic	Basic	Proficient
9-15	16-23	24-29	30-36

5th Grade

Well Below Basic	Below Basic	Basic	Proficient
5-11	12-19	20-31	32-39

6th Grade

Well Below Basic	Below Basic	Basic	Proficient
7-8	9-10	11-17	18-21

Kindergarten: Spring

Universal Screener for Number Sense

The Spring Universal Screeners for Number Sense revisions from 2020 improved thoroughness, efficiency, and alignment with new thinking related to the core aspects of number sense. In kindergarten for example, the importance of determining whether the student is unitizing numbers to ten can be seen on a number of the tasks. Verbal counting tasks assess whether the child has the necessary skill set. Addition and subtraction tasks with objects reveal whether the student is counting-on and no longer needs to recount the first number, or whether there is still a need to establish the first set in order to be able to act on that number. Look for students solving problems with more efficient counting methods, and take note of those who still require redundant counting or who are unable to use counting to solve addition and subtraction problems.

Instructions and Guidance

Whenever possible, the teacher who works most directly with the child should be the one to administer the interview portion of the screener and score the written portion.

It is usually best to attempt to limit questioning and move at a steady pace through the tasks. This improves efficiency, but also helps to ensure consistency of administration.

Be flexible. You might find that you can work most efficiently by administering one task at a time, moving from student to student rather than having them come to a station. This can be done with the counting tasks and numeral ID task. Users of Forefront will find that the interview tool can be switched to focus on tasks. Here is a help article for using the interview tool. (https://bit.ly/3dm7wkq)

Collaborate. Sometimes groups of students can be reorganized in creative ways to provide teachers with opportunities to sit with individual students.

Watch carefully and take notes. Nuances in behaviors reveal how children are making sense.

Video tape. Although it is not necessary for the administration of the assessment, recording an assessment or two to discuss with colleagues can be an excellent way to learn together and build consistency in administration and scoring.

Written Tasks

For the written portion only of the assessment, provide manipulatives for the student to solve problems if they will be helpful.

Dictated numerals – Question #1

Provide the student with the written portion of the assessment. When everyone is ready say, **"There are some lines at the top of the page. Put your finger on the first line."** Check to see that the students correctly indicate where to write the numbers. **"Write the number twelve." "Write the number nine." "Write the number five." "Write the number fifteen." "Write the number twenty."** The teacher might choose to prompt some students to write other numbers for this task, especially if they know that there are specific numbers that the student has been struggling to write correctly.

Problem 2 prompt: Say, **"What numbers go in the boxes for these problems? Use the ten-frames for the first couple of problems if you would like. For the other problems there is space for you to draw and work the problem out."** When students solve without providing evidence of how they solved, teachers are encouraged to ask students to demonstrate their strategy.

Kindergarten: Spring

Universal Screener for Number Sense

Detailed Script and Rubrics, *print 1 copy/test administrator*

Verbal Counting: K.CC.A.1 — Number Sense: Forward Number Word Sequence

1. "**Start counting from 17 and I'll tell you when to stop."** Allow student to count to at least 23.

- If student is successful counting from 17 say, **"Start counting from 66 and I will tell you when to stop."** Stop at 72.
- If student is not successful counting from 17 say, **"Start counting from 8 and I will tell you when to stop."** Stop at 32.

3	2	1	0
Student counts successfully from 17 -23 and from 66-72.	Student counts accurately from 17 – 23, but not from 66 – 72.	Student does not count accurately from 17 – 23, but student is successful when counting to 32 when starting from 8.	Student does not accurately count from 8 – 32.
Commentary: Expectations for the end of kindergarten are that children are able to count to 100 starting from any number in the sequence. Students who have not yet achieved this goal by spring of kindergarten should receive support in developing this skill. This is an area where parents feel comfortable supporting their child. Communicate with the parents to let them know the importance of counting for their child's long-term success in mathematics and inform them where their child is in the process.			

Count by 10s: K.CC.A.1 — Number Sense: Skip Counting – Place Value

2. "**Count by 10s"** If student fails to start, say, **"Like this: ten…, twenty… You keep going."**

3	2	1
Student counts by tens to 100 without additional prompting.	Student counts by tens with prompting. Or student completes the count with self-corrections.	Student does not accurately count by tens to 100.
Commentary: The count-by-tens sequence lays a foundation for the concepts of place value that will be built in first and second grade. Students who are unable to count by tens should receive ample opportunities to practice this skill.		

Kindergarten: Spring

Numeral ID: K.CC.A.3 — Number Sense: Numeral Identification

3. Numeral Identification Cards: Place numeral cards in front of child one at a time (not in numerical order). Say, **"Read this card to me."** (check if correct; record incorrect answers)

6 16 12 9 13 15

If a student reads a number incorrectly, the assessor may choose to present a number card again (after a couple of other cards have been shown) if they think the student might read the number correctly if given a second opportunity.

3	2	1
Fluently and correctly reads all numbers.	Correctly reads all, but with self-corrections, delays or after having been given a second opportunity.	Misidentifies one or more of the numbers (includes confusions like saying 30 rather than 13, or 21 rather than 12.)
Commentary: By the end of kindergarten students should be able to fluently read numerals to 20. Many students will read numbers that are larger than 20 and moving into learning to read and write those numbers can set those students up for success. For students who are not yet reading numerals to 20, targeted opportunities to practice should be given. This is an area where parents should be encouraged to support their students. Reading numerals is a skill that lays a foundation for further learning, and it also ensures that students have access to the learning materials. If you know that there are numbers not listed above that have been problematic for the student and you feel it would be good to assess those, then do. Performance level 3 for this question should be used to indicate that a student can read all numbers 0 - 20 without difficulty.		

Numbers & Operations in Base Ten: K.NBT.A.1

Number Sense: Ones, Tens and Hundreds

4. Have 10 counters placed on a ten-frame ready to present to the student. Show the counters on the ten-frame to the child, **"There are ten counters here. We want thirteen."** Put the paper with the number 13 on the table and pour the 10 counters on the paper all at once. Tell the student, **"There are 10 counters here. Put some more so that there will be thirteen."**

3	2	1
Student does not recount the 10, takes 3 objects and adds them to the 10.	Student recounts the ten and then adds 3 to make thirteen.	Student does not successfully make 13.
Commentary: This task seeks to assess whether the student has developed the idea of ten as a unit that can be operated upon. This is sometimes called the initial composite, or unitizing. This indicates a readiness for adding on and in this case also demonstrates a readiness for beginning to work with tens and ones, a major goal of first grade. Although the 10 objects are all there and countable, students who don't need to count them tend to not count them again since they recognize it is unnecessary.		

Kindergarten: Spring

Addition and Subtraction: K.OA.A.2 Number Sense: Covered Tasks - Addition

5. Place 7 counters all at once in front of the student. Say, **"Here are seven counters."** Cover the counters without providing the student the opportunity to count them. Ask the student, **"How many counters are under here?"** Confirm that the student knows that there are 7 counters. Show the student 2 more counters and put them with the 7 under the cover. **"I am putting these two counters with the seven under here. How many are there altogether now?"**

If student is unsuccessful remove the 2 extra counters and reveal the 7. With the student seeing, count the 7 objects with the student, **"There are 7 here. Let's count them together."** As you (the adult) count, organize the counters neatly in a row. Cover them again, asking **"How many are under here?"** (confirming that they remember there are seven.) Again, show the student 2 more and say, **"I am going to put two more with the seven. How many are there now?"**

3	2	1
Student is able to solve the task as originally posed.	Student is able to solve the problem on the second presentation.	Student does not accurately solve the problem
Commentary: As with the previous problem, this problem gets at the idea of unitizing or establishing the initial composite. Watch carefully to see how the student solves the problem. Do they use a count-on strategy, or do they make a count of 7 before continuing? Although these two behaviors are both scored as a level 3, they are quite different, and should be taken into consideration as formative assessment information. The supporting prompt provides a scaffold for establishing seven in the mind of the student and can be enough for a student who is progressing in their understanding of composite numbers. Students who still cannot solve the problem after the organizing count are likely in need of supports and targeted practice.		

Addition and Subtraction: K.OA.A.2 Number Sense: Covered Tasks - Subtraction

6. Place 8 counters all at once scattered randomly in front of the student. **"Here are eight counters."** Cover them up and ask, **"How many counters did I put here?"** Confirm that the student knows there are 8 counters under the cover. Reach under the cover and remove 2 of the counters. Leave them visible on the table. **"I took two of the counters back out. How many counters are still under the cover?"** If necessary, remind the student that you started with eight, and removed 2.

If the student is unsuccessful remove the items, and *count the eight objects with the student while placing them neatly in a row.* Then, cover the objects and ask, **"How many counters did I put here?"** Confirm that the student knows there are 8. Reach under the cover and remove 2 of the counters. Leave them visible on the table. **"I took two of the counters back out. How many counters are still under the cover?"**

3	2	1
Student is able to solve the task as originally posed. If student starts from 8, and uses fingers to count back, that should be considered a level 3.	Student is able to solve the problem on the second presentation. **OR** Student makes 8 using their fingers, then drops two, and either counts or sees that they now have 6 fingers.	Student is unable to solve the task.
Commentary: The reason why the finger strategy is considered level 2 here is because the student has demonstrated a need to enumerate the 8 in order to solve the problem, much like the scaffold does. What we are looking for here is the ability to operate off the 8, without needing to enumerate it.		

Kindergarten: Spring

Universal Screener for Number Sense

Administration Instructions and Detailed Rubrics for Written Tasks, *print 1 copy/test*

The written portion of the Spring USNS should be administered either in small or whole groups.

W1- Write Numerals: K.CC.3

Number Sense: Numeral Writing

Provide the student with the written portion of the assessment. Say, **"There are some lines at the top of the page. Put your finger on the first line. Check to see that the student correctly indicates where to write the numbers. Write the number twelve." "Write the number nine." "Write the number five." "Write the number fifteen." "Write the number twenty."** The teacher might choose to prompt some students to write other numbers for this task, especially if they know that there are specific numbers that the student has been struggling to write correctly.

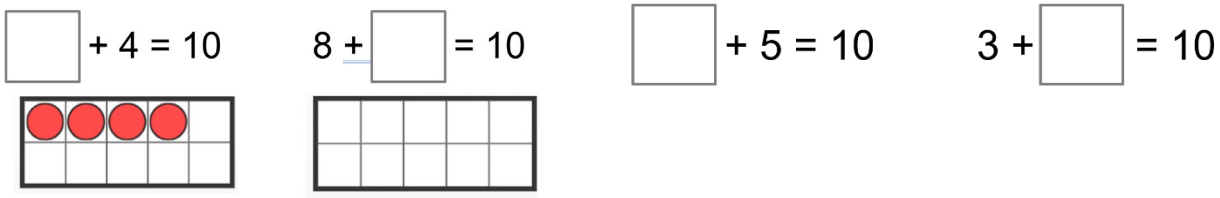
3	2	1
Student writes all numbers to 20 without reversals or transpositions. *	Student can write all numbers under 10 but not all numbers to 20. Might include some reversals and transpositions*.	Student is unable to write all numbers under 10.
Commentary: Proficient students consistently and accurately write numbers to 20. This ability, though not tied to any quantitative sense of numbers represents a key skill that supports engagement, communication, and therefore the development of number sense.		

*Reversals means digits that have been written backward, as in a backward 5.
Transpositions- Switching order of digits. (E.g., writing 31 when intending to write 13)

W2- Sums to 10: K.OA.A.4 and K.OA.A.5

Number Sense: Add Under 20 – Structures, Fluency and Flexibility

Be sure to prompt the students to use the ten-frames where available, indicating that the students can write in them, and to use the space below to solve the two problems without ten-frames.



3	2	1
Student solves all the problems correctly	Student solves two or three problems correctly	Student solves only one or none of the problems correctly
Commentary: This problem assesses the very important ability of a student to find the missing number to make 10. The student is not expected to solve these problems without making drawings or using tools, in fact they should be able to use tools and create visual models to support them in the problem-solving process.		

Kindergarten: Spring

W3 – Make a Drawing to Show 3 + 6: K.OA.A.1

Number Sense: Addition Within 20 – Use Objects to Represent

3	2	1
Student creates a drawing that shows that a group of 3 is combined with a group of 6 to create a whole group of 9 and completes the equation correctly.	Slight error, or unclear in thinking, or unable to create visual model. • Slight errors might result from a counting error. For example, the student has drawn 3 and indicated clearly that they combine with a set of 6, but answers incorrectly (e.g., 8 due to a counting error.) • Unclear thinking might include a drawing of 3 things followed by a plus sign and then a group of 6 followed by an equal sign and then a group of 9. This kind of drawing is associated with a rote understanding of the problem, but it doesn't clearly indicate that the group of 3 and 6 are combined to create the group of 9. • The student correctly answers 9, but is **unable to create a visual model** that matches the problem.	Student does not create a visual model that communicates an understanding of addition and does not arrive at an answer of 9.
Commentary: The purpose of this task is to reveal whether the student is able to visually represent an understanding of addition. In particular, is the student making sense of the operation and can they communicate that sense making? There are a variety of ways that students can do this, however, key to this task is the idea that the two addends are combined in order to create the sum.		

W4 – Make a Drawing to Solve 8 - 7 K.OA.A.1

Number Sense: Subtraction Within 20 – Use Objects to Represent

3	2	1
Student answers 1 and creates a drawing that matches the equation. Drawings might range widely. If there is a question of whether a student's drawing does correctly match the equation, teachers are encouraged to talk with the student about what they created.	Correct answer and any of the following: • **Slight error in drawing**: might include not drawing exactly eight dots, but student still arrives at the correct answer. • **Unclear thinking** includes a drawing of 8 things followed by a minus sign and then a group of 7 things followed by an equal sign and then one. This kind of drawing is associated with a rote understanding of the problem, but it doesn't clearly indicate a take-away, comparison, or difference model. • The student correctly answers 1, but is **unable to create a visual model** that matches the problem.	Student does not answer 1.
Commentary: The purpose of this task is to reveal whether the student is able to communicate an understanding of subtraction. The student might use a take-away model, drawing 8 objects and then showing how 7 are removed, or, less commonly, a comparison problem that shows two bars or sets compared to one another. Depending on the instruction, some students might use a number line or some other method to show an add-on method to show that the difference is 1. If the student's drawing is unclear, but the answer is correct, teachers are encouraged to talk to the student to better understand their thinking and determine the most appropriate score.		

Kindergarten: Spring

Universal Screener for Number Sense

Quick Script, *print 1 copy/test administrator*

Verbal Counting: K.CC.A.1

1. "**Start counting from 17 and I'll tell you when to stop."** Allow student to count to at least 23.
   - If student is **successful** counting from 17 to 23 say, **"Start counting from 66 and I will tell you when to stop."** Stop at 72.
   - If student is **not successful** counting from 17to 23 say, **"Start counting from 8 and I will tell you when to stop."** Stop at 32.

Count by 10s: K.CC.A.1

2. "**Count by 10s"** If student fails to start, say, **"Like this: ten…, twenty… You keep going."**

Number Reading: K.CC.A.3

3. Place numeral cards in front of child one at a time (not in numerical order). Say, **"Read this card to me."** (check if correct; record incorrect answers) **(6, 16, 12, 9, 13, 15)**

   - If a student reads a number **incorrectly**, assessor may choose to present a number card again (after a couple of other cards have been shown) if they think the student might read the number correctly if given a second opportunity.

Numbers & Operations in Base Ten: K.NBT.A.1

4. Have 10 counters placed on a ten-frame ready to present to the student. Show the counters on the ten-frame to the child, **"There are ten counters here. We want thirteen."** Put the paper with the number 13 on the table and pour the 10 counters on the paper all at once onto the paper. Tell the student, **"There are 10 counters here. Put some more so that there will be thirteen."**

Addition and Subtraction: K.OA.A

5. Place 7 counters all at once in front of the student. Say, **"Here are seven counters."** Cover the counters without providing the student the opportunity to count them. Ask the student, **"How many counters are under here?"** Confirm that the student knows that there are 7 counters. Show the student 2 more counters and put them with the 7 under the cover. **"I am putting these two counters with the seven under here. How many are there altogether now?"**

> If student is unsuccessful remove the 2 extra counters and reveal the 7. With the student seeing, count the 7 objects with the student, **"There are 7 here. Let's count them together."** As you (the adult) count, organize them neatly in a row. Cover them again, asking **"How many are under here?"** (confirming that they remember there are seven.) Again, show the student 2 more and say, **"I am going to put two more with the seven. How many are there now?"**

6. Place 8 counters all at once scattered randomly in front of the student. **"Here are eight counters."** Cover them up and ask, **"How many counters did I put here?"** Confirm that the student knows there are 8 counters under the cover. Reach under the cover and remove 2 of the counters. Leave them visible on the table. **"I took two of the counters back out. How many counters are still under the cover?"** If necessary, remind the student that you started with eight, and removed 2.

> If the student is unsuccessful remove the items, and *count the eight objects with the student while placing them neatly in a row.* Then, cover the objects and ask, **"How many counters did I put here?"** Confirm that the student knows there are 8. Reach under the cover and remove 2 of the counters. Leave them visible on the table. **"I took two of the counters back out. How many counters are still under the cover?"**

Kindergarten: Spring

Universal Screener for Number Sense

Spanish Quick Script, *print 1 copy/test administrator*

Contando Verbalmente: K.CC.A.1

1. "**Comienza contando del 17 y yo te diré cuándo parar."** Permita al estudiante contar por lo menos hasta el 23.

- Si el estudiante es **exitoso** contando del 17 - 23 diga, **"Comienza contando del 66 y yo te diré cuando parar."** Para al 72.
- Si el estudiante no **es exitoso** contando del 17 - 23 diga, **"Comienza contando del 8 y yo te diré cuando parar."** Para al 32.

Cuenta por 10: K.CC.A.1

2. **"Cuenta por 10"** Si el estudiante falla para comenzar, diga **"Como esto: diez…, veinte… y continúe."**

Leyendo Números: K.CC.A.3

3. Coloca tarjetas numéricas delante del niño una a la vez (no en orden numérico). Diga, **"Léeme esta tarjeta a mí."** (Chequee si está correcto; anote las respuestas incorrectas) **(6, 16, 12, 9, 13, 15)**

> Si el estudiante lee un numero **incorrectamente**, el asesor podría escoger de presentar una tarjeta numérica de nuevo (después de que un par más de tarjetas son demostradas) si ellos piensan que el estudiante podría leer el numero correctamente si se le da una segunda oportunidad.

Números y Operaciones basadas en 10: K.NBT.A.1

4. Prepara la marca de diez con 10 fichas. Ensena las 10 fichas al alumno. **"Hay 10 fichas aquí."** Coloca el papel; con el numero 13 sobre la mesa y hecha las 10 fichas en el papel todas a la misma vez sin contarlas. Dígale al estudiante; **"Hay 10 fichas aquí. Agrega otras más para que haya trece."**

Adición y Sustracción: K.OA.A

5. Coloca 7 fichas todas a la misma vez. Diga, **"Aquí hay 7 fichas."** Cubra las fichas sin darle al estudiante la oportunidad de contarlas. ¿Pregúntele al estudiante, "Cuantas fichas tengo aquí debajo?" Confirme que el estudiante sabe de qué hay 7 fichas. Demuestre al estudiante 2 fichas más y colóquelas con las otras 7 debajo de la cubierta. **"Estoy poniendo estas dos fichas con las siete aquí debajo. ¿Cuántas son todas juntos ahora?"**

> Si el estudiante no es exitoso remueva las 2 extra fichas y revele las 7. Con el estudiante mirando, cuente los 7 objectos con el estudiante, **"Hay 7 aquí. Vamos a contarlas juntos."** Como usted (el adulto) cuente, organícelos alinéelos en fila. ¿Cúbralos de nuevo, preguntando **"Cuantas hay aquí debajo?"** (Confirmando que ellos se acuerden que hay siete.) De nuevo, muestre al estudiante 2 más y diga **"Voy a poner dos más con las siete. ¿Cuántas hay ahora?"**

6. Coloque 8 fichas todos a la vez dispersas al azar delante del estudiante. **"Aquí hay 8 fichas."** ¿Cúbralas y pregunté, **"Cuantas fichas puse aquí?"** Confirme que el estudiante sabe que hay 8 fichas bajo la cubierta. Alcance debajo de la cubierta y remueva 2 de las fichas. Déjelas visibles sobre la mesa. **"Yo saque dos de las fichas. ¿Cuántas fichas todavía tengo debajo de la cubierta?"** Si es necesario, recuérdele al estudiante que comenzó con ocho y removió 2.

Si el estudiante no es exitoso remueva los objetos y cuente los ocho objetos con el estudiante mientras los esté colocando en una fila organizadamente. ¿Después cubra los objetos y pregunte, **"Cuantas fichas puse aquí?** Confirme que el estudiante sabe que hay 8. Alcance debajo de la cubierta y remueva 2 de las fichas. Déjelas visibles sobre la mesa. **"Yo saque dos de las fichas. ¿Cuántas fichas todavía tengo debajo de la cubierta?"**

Kindergarten: Spring

Universal Screener for Number Sense

Interview Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language: □ English □ Spanish □ Other: _____

Verbal Counting	*score*
1. Counting from 17 to at least 23, then 66 to 72 or 8 to 32. *Notes:* □ *Counts from 17 -23 and from 66-72: 3 pts.* □ *Counts from 17 – 23, but not from 66 – 72.: 2 pts* □ *Unsuccessful 17–23, successful 8 to 32.: 1 pt.* □ *Unsuccessful from 8-32: 0 pts.*	
Count by 10s	*score*
2. "Count by 10s." To 100. *Notes:* ☐ *correct without prompting: 3 pts.* ☐ *correct with prompting or self-corrects: 2pts.* ☐ *incorrect: 1 pt.*	
Number Reading	*score*
3. Numeral identification cards. **(6, 16, 12, 9, 13, 15)** *Notes:* ☐ *all fluent and correct: 3 pts.* ☐ *self-corrections or delays: 2 pts.* ☐ *any incorrect: 1pt.*	
Counting and Cardinality	*score*
4. Make 13 with counters. *Notes:* ☐ *13 w/o recount of 10.: 3 pts.* ☐ *13 with recounts of ten: 2 pts.* ☐ *does not make 13: 1 pt.*	
Addition and Subtraction	*score*
5. 7 +2 with counters. *Notes:* ☐ *solves: 3 pts.* ☐ *solves on second presentation: 2 pts.* ☐ *unsuccessful: 1 pt.*	
6. 8- 2 with counters. *Notes:* ☐ *solves: 3 pts.* ☐ *solves on 2nd presentation or models with fingers: 2 pts.* ☐ *unsuccessful: 1 pt.*	

Kindergarten: Spring

Universal Screener for Number Sense

Written Portion, *print 1 copy/student*

Name _____ Date _____

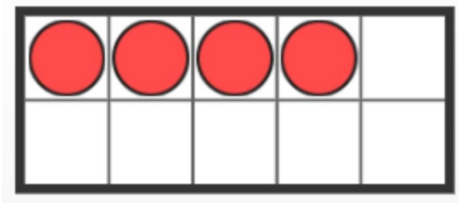
1. Write numbers.

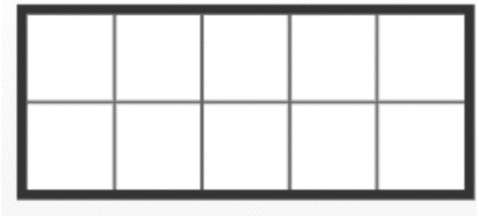
_____ _____ _____

_____ _____

2. Add. Put the missing number in the box.

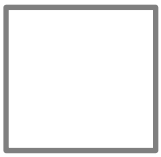
☐ + 4 = 10 8 + ☐ = 10

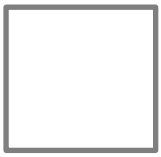




☐ + 5 = 10 3 + ☐ = 10

Kindergarten: Spring

3. Make a drawing to solve 3 + 6 = 

4. Make a drawing to solve 8 – 7 = 

Kindergarten: Spring

Universal Screener for Number Sense

Spanish Written Portion, *print 1 copy/student*

Nombre _____ Fecha _____

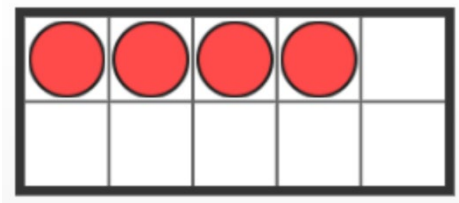
1. Escribe Números.

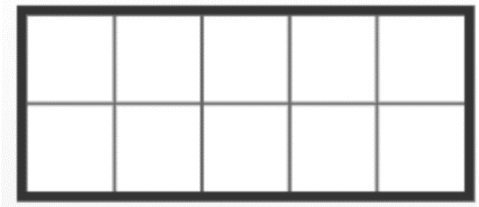
_____ _____ _____

_____ _____

2. Suma. Pon el número que corresponda en la caja.

☐ + 4 = 10 8 + ☐ = 10





☐ + 5 = 10 3 + ☐ = 10

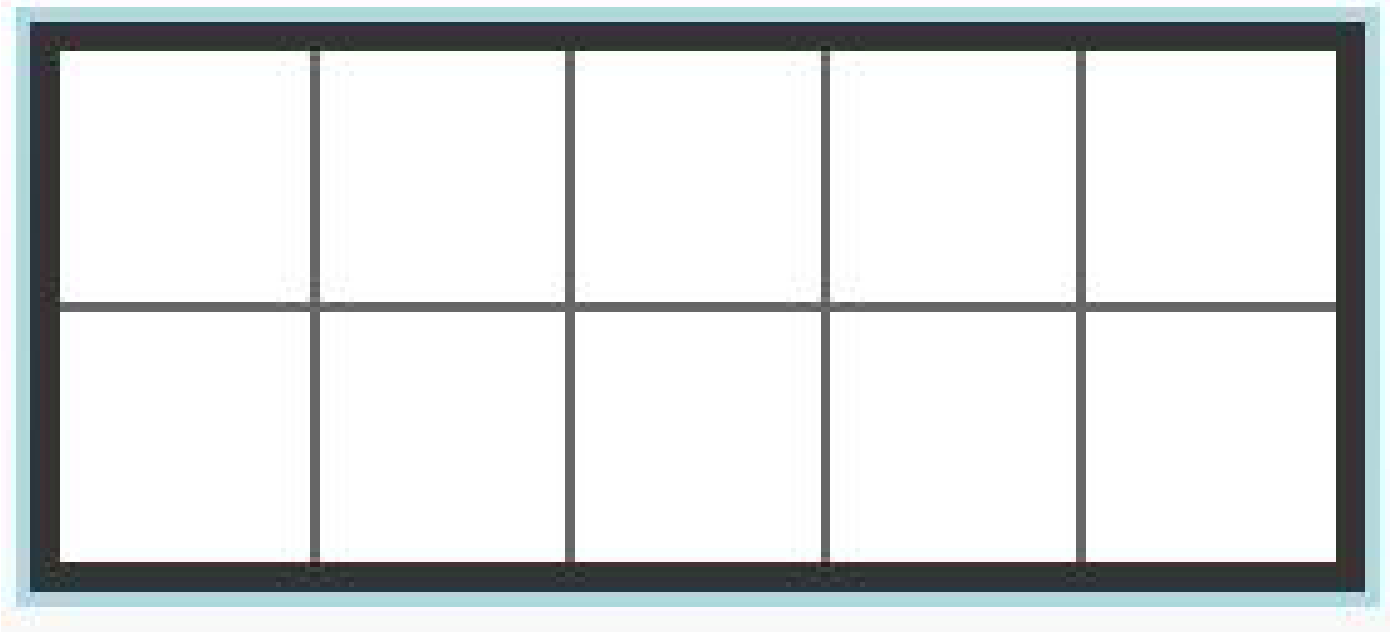
Kindergarten: Spring

3. Haz un dibujo para resolver 3 + 6 = ☐

4. Haz un dibujo para resolver 8 – 7 ☐

Kindergarten: Spring

6	16	12
9	13	15



13

Grade 1: Spring

Universal Screener for Number Sense

Instructions and Guidance

Interview (approximately 5 – 9 minutes per student)

Interviews should be conducted one-on-one with students. Do not provide paper and pencil and only provide materials as directed in the script.

This can be done by sitting with a single student and working through all of the questions, or can be done one or two questions at a time. For example, teachers might find that they can quickly and easily assess counting by moving around the room to listen to students count and then, later, in a separate session, set up a table with the necessary materials and pull students one at a time to complete those tasks that use materials.

Who? Whenever possible, the teacher who works most directly with the child should be the one to administer the interview portion of the screener and score the written portion.

Pace yourself. It can be tempting to turn the screening assessments into instructional sessions. However, when this happens teacher tend to get bogged down in the process. Pace yourself, question only enough to get the information you need, and take notes for how you will follow up later.

Be flexible. You might find that you can work most efficiently by administering one task at a time, moving from student to student rather than having them come to a station. This can be done with the counting tasks and numeral ID task. Users of Forefront will find that the interview tool can be switched to focus on tasks. Here is a help article for using the interview tool. (https://bit.ly/3dm7wkq)

Collaborate. Sometimes groups of students can be reorganized in creative ways to provide one teacher with the ability to sit with individual students.

Observe carefully and take notes. Watch for the nuances in behaviors that reveal a child's sense making.

Video tape. Although it is not necessary for the administration of the assessment, recording an assessment or two to discuss with colleagues can be an excellent way to learn together and build consistency in administration and scoring.

Written Portion –Up to 60 minutes. Many students will finish in 30 minutes or less.

The written portion of this assessment is best given in small groups or centers. Care should be taken to ensure that students are not given opportunities to collab orate on the assessment.

Unlike the interview section, it is less important who manages the administration of the written portion. That is, it is appropriate that the written portion be administered by a paraeducator or volunteer, however it is still best for the teacher to score the written portion of the assessment.

Teachers may read the assessment to the students. Ideally, students who are able to read the assessment independently should be given the opportunity to do so and those students who need support with the reading will be given that support either individually or in small groups.

Do not provide calculators.

For written portion, provide manipulatives that are familiar to the student as needed.

Grade 1: Spring

Universal Screener for Number Sense

Detailed Script and Rubrics, *print 1 copy/test administrator*

Count Up to 120: 1.NBT.A.1 Number Sense: Forward Number Word Sequences

1. Say, **"Start counting from 64 and I will tell you when to stop."** (Stop at 72)

- If successful, **say "Start counting from 96."** (Stop at 120)
- If unsuccessful, **say "Start counting from 28."** (Stop at 32)

3	2	1	0
Student completes the count from 64 – 72 and 96 -120.	Student counts accurately from 64 – 72, but is unsuccessful counting from 96 to 120. OR Student completes both counts successfully but with hesitations and/or self-corrections.	Student accurately counts from 28 – 32, but does not accurately count from 64 – 72. Allow for pauses and self-corrections.	Student does not accurately count from 28 – 32.
Commentary: By spring of 1st grade students are expected to count fluently to 120 starting from any number in the sequence. This verbal fluency lays the foundation for development of place value understandings and computational fluency. Students who perform at level 0 or 1 on this task should be further evaluated to understand more precisely the counting sequences that they have mastered, and targeted practice and instruction should be provided.			

Count Back from 32: 1.NBT.A.1 Number Sense: Backward Number Word Sequences

2. **"Count back from 32 and I will tell you when to stop."** (Stop at 28)
"Now count back from 17 and I will tell you when to stop." (Stop at 10)

3	2	1
Student is able to complete both counts without significant pauses or self-corrections	Student is successful with one of counts. Or completes both counts, but with significant pauses and/or repeated self-corrections	Student is unsuccessful with both counts.
Commentary: The ability to initiate backward counts at any point in the sequence is a necessary skill for counting back to subtract. It is also another indicator of the student's development of an understanding of composite number, as counting back relates to operating off a given number. Counting back also relates strongly to students' ability to subtract in general. Teachers will likely find that there are groups of students who are still developing the ability to count back from any number under 100. Small group routines and other practice opportunities can be helpful in developing this skill.		

Grade 1: Spring

Read Numbers to 120: 1.NBT.A.1 Number Sense: Numeral Identification

3. "Read these numbers." Show one card at a time. (20, 15, 12, 51, 78, 60, 109, 116)

If on the first attempt a student misreads a number, the teacher may return to that number if they feel that the student might correct themselves with a second attempt.

3	2	1
Student fluently reads all the number cards.	Student reads all numbers correctly, but without fluency. Might include self-corrections or pauses. Or student reads all correctly when provided with a 2nd opportunity.	Student is not successful reading one or more numbers. Includes issues with reversals (e.g. 15 vs. 51) and trouble with "teen" vs. "-ty" (e.g. 60 vs. 16)
Commentary: The ability to read numerals is a skill that underlies number sense development. Reading numbers supports the development of place value concepts. It also supports engagement and communication. Students who are unable to fluently read numbers to 120 at the end of 1st grade are at risk for being unable to access instruction and the instructional materials of 2nd grade. Students who score at a level 1 on this task should be provided with targeted instruction and be given opportunities to practice in order to develop the necessary fluency. This practice can be in combinations that support connections to quantity and also in isolation. A note about bilingual students: For students who speak languages other than English it is helpful to also assess in those other languages. It should not be assumed that the student can read these numbers in their home language and that the issue is English language acquisition. In fact, because conversations about numbers are infrequent in many households, the majority of students' mathematical language is in the language of the school.		

Solve 14 - 5:1.OA.C.6

Number Sense: Addition and Subtraction Within 20 – Structures Flexibility and Fluency

4. Place the card 14 – 5 in front of the student. "**Read this card.**" (Ensure that the student reads the card accurately. Correct them if necessary.) **"How much is 14 – 5?"** When it isn't obvious, use questioning to reveal the student's thinking. If the student explains how they solved by demonstrating a count by one strategy, ask, **"Do you have another way of thinking about this problem?"**

- If the student is unable to solve 14 - 5 show them the card that says 11 – 3 and prompt as above.

3	2	1
Student solves 14 – 5 a strategy that does not start with an initial count from 1.	Student can solve 11 – 3, but not 14 – 5. OR Student counts to 14 from ones, in order to establish that quantity before removing the 5.	Student is unable to solve either problem.
Commentary: This question is designed to help reveal a few things. Most critically, the ability to operate directly off a composite number (14 or 11). That is, can the student start at a number without needing to establish the quantity through a count by 1. In rare cases a student will count to 14 first to establish that quantity in their mind before taking from it. (see the level 2 description) This idea of being able to directly operate off a number is an important developmental milestone.		

Grade 1: Spring

Commentary #4 Continued: Students may use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). Take note of the strategies that students use.

Students who perform at a level 1 on this task should be evaluated further to establish what understandings have been mastered and to identify next steps for instruction. (Teachers trained in Add+Vantage Math should consider administering the Addition & Subtraction assessment.)

Addition and Subtraction: 1.OA.C.6

Number Sense: Addition and Subtraction Within 20 – Structures Flexibility and Fluency

5. Show the card 8 + 6. Say, **"Let's try this problem. Read this card."** (Ensure that the student reads the card accurately. Correct them if necessary.) **"How would you solve this problem?"** Use questioning to reveal the student's thinking. If the student explains how they solved by demonstrating a count by one strategy, ask, **"Do you have another way of thinking about this problem?"**

- If the student is unsuccessful show the card 9 + 4 and prompt again as above.
- If student is also unsuccessful with 9 + 4 present the card that says 6 + 3.

3	2	1	0
Student solves 8 + 6 using a counts-on method (the student does not count from 1 to establish the first number) or solves the problem without counting by 1s. (e.g., 8 + 2 + 4 = 14).	Student counts from 1 to establish the 8 before continuing their count to accurately solve 8 + 6. OR Student can solve 9 + 4 but not 8 + 6.	Student solves 6 +3, but is unable to solve either of the other problems.	Student is unable to accurately solve 6 + 3.

Commentary: The establishment of the initial composite, that is, the ability to operate off the number 8 in this case without needing to count from 1 is a critical developmental milestone. Many students will be combining composite numbers at this point, using a make-a-ten or other non-count-by-one strategy for solving the problem.

For students who use their fingers to "count on" from the first addend the problem 8 + 6 requires two hands, whereas 9 + 4 requires only one hand. Although 6 + 3 can be solved completely with two hands (without reusing fingers), students who rely heavily on using their fingers can also find this tricky because the 6 requires both hands,

For students who perform at level 0 or 1 on this task, further evaluation is needed to establish the starting point for targeted instruction. (e.g. Add+Vantage Math: Addition & Subtraction)

Grade 1: Spring

Add Ten Strip to 54: 1.NBT.C.5 Number Sense: Ones, Tens and Hundreds

6. Show the student a strip of 10 dots (see the materials). Ask, **"How many dots are here?"** Allow the student to count if necessary. **"That's right. Whenever you see dots in a rectangle like this there will be 10 dots."** Slide the 4-dot square next to the 10-strip. **"How many dots are there now?"**

If the student counts all the dots, starting from 1 again, take note. The highest level on this task is 2, but continue with the next part of the task.

Leave the 14 dots and add 4 more 10-strips and put the card that says 54 by the dots. "**Now there are 54 dots."** Cover all 54 dots but leave the number 54 in view. I am going to add on 10 more. Slide another 10-strip under with the others. **"Now how many dots are under here?"**

If the student pauses for a long time, you may repeat the prompt, **"There were 54 (point to the numeral). I put 10 more with the 54. How many are there now?"**

3	2	1
Student is able to solve the problem by counting by 10s, or by adding 6 and then 4. (Student does not count by ones to solve the problem.)	Student counts from 1 to solve the 10 + 4 task, and is able to solve 54 + 10.	Student is unable to solve 54 + 10.
Commentary: This problem is designed to reveal whether the student is adequately developing initial understandings of 10s and 1s and place value in general. The materials and the symbolic representations serve as scaffolds to help the students engage with the problem. These scaffolds are distinctly different than presenting a problem like 54 + 10 in a vertical format where the student might apply a rote procedure.		

Comparing Sets: 12 and 8: 1.OA.A.1 Number Sense: Problem Solving: Comparisons

7. Put 8 counters of one color and 12 counters of another color in two separate piles in front of the student. (e.g. 8 blue counters and 12 yellow counters). **"Here are 8 (blue) counters. And here are 12 (yellow) counters. Are there more (blue) or (yellow) counters?"**

If student does not respond correctly, score at a level 0 and do not continue.
If the student responds correctly say, **"That's right, there are more (yellow) counters. How many more?"**

If it might be helpful, an additional prompt of, **"How many more counters are there in this pile than in this pile?"** (or refer again to the colors.)

3	2	1	0
Student correctly responds that there are 4 more counters in the pile of 12 without using the materials (e.g., without matching the sets side by side and counting the difference)	Student uses the materials to solve the problem through some matching or other strategy to count the difference.	Student correctly identifies that the set of 12 is greater than the set of 8 but does not find the difference of 4.	Student does not correctly identify the set of 12 as the greater set.
Commentary: Students at the end of 1st grade should be able to solve basic comparison problems. The materials in this case provide a significant scaffold for the student to use if necessary. Most students who have conceptualized the idea of comparisons will not rely on the materials, but instead will use some sort of mental strategy to solve the problem. This is indicative of performance level 3.			

Grade 1: Spring

Universal Screener for Number Sense

Written Tasks: Detailed Rubrics for, *print 1 copy/test administrator*

W1. Story with Three Addends: 1.OA.A.2 Number Sense: Problem Solving: Addition

8 kids were at a lunch table. 4 more kids came and sat down. Then 6 more kids sat down at the table. How many kids are at the lunch table now? Show your answer in pictures, words, or numbers.

3	2	1
Student correctly answers 18 and clearly communicates how they solved the problem with a drawing, explanation, and/or numbers.	Student's answer is slightly off (17 – 20) due to a counting or computational error, but student has clearly made an effort to add the three numbers. OR Student answers 18, but provides no explanation, or the explanation given does not match the situation. OR Student answers 18, and uses physical materials to do so, but is unable to accurately represent the solution on paper.	Student provides no solution or not enough evidence that the student had a viable strategy for solving the problem.
Commentary: This question is as much about the ability to accurately solve the problem as it is about being able to represent the problem and solution. Students might use any number of ways to do this including writing equations. Examples of evidence include pictures, number lines, words, dots, clear verbal explanations (e.g., I added 6 and 8 and 4), equations and expressions.		

W2. Solve for Unknowns : 1.OA.D.7

Number Sense: Add and Subtract Within 20 - Structures, Flexibility and Fluency

What numbers go in the boxes? Add and Subtract.

☐ + 4 = 5 5 = ☐ - 3 8 + ☐ = 10 ☐ = 7 - 2

3	2	1
Solves all 4 problems	Student solves 1 – 3 problems correctly	Student solves none of the problems correctly
Commentary: This problem set that puts unknowns and the equal sign in a variety of positions reveals flexibility and the ability to decompose numbers. Given that the sums and differences presented here all are within 10, this problem could be used to assess fluency, (1.OA.C.6) however in this case we are not concerned with whether the student needs to solve the equations with materials or drawings. This ability to solve for unknowns in different positions demonstrates an understanding that whole numbers can be decomposed in different ways, an important conceptual marker.		

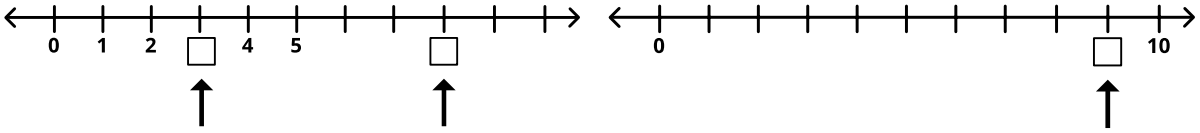
Grade 1: Spring

W3. Subtract Multiples of Tens: 1.NBT.C.6 Number Sense: Place Value Computation - Solve

50 – 10 = ☐ 70 – 20 = ☐ 80 – 70 = ☐

3	2	1	0
Student solves all correctly	Student solves 2 correctly	Student solves 1 correctly	Student solves none.
Commentary: Taking tens from tens is a key step in the development of place value and is a marker of the ability to manipulate composite numbers. Students should be encouraged to make drawn representations of how they solved this problem. If a student attempts to draw individual dots, rather than representations of tens, ask them if they have another way to do it.			

W4. Number lines 1.MD.A.2 Number Sense: Number Lines



3	2	1	0
Student puts correct answers in all three boxes	Student puts correct answers in 2 of the boxes	Student puts one correct answer	No answers correct
Commentary: For this problem numbers written backward should still be counted as correct. This problem is tied to the standard 1.MD.A.2 because it gets at that very key idea of iterated units of the same length. While number lines (line diagrams) are not explicitly mentioned in the 1st \grade standards, they are an important tool for teaching and are therefore included in most instructional programs. Although many students will intuitively understand how number lines work, others need to explicitly be told. Therefore, teachers who use an instructional program that does not include working with number lines are encouraged to integrate number lines into their instruction. An interesting aspect of number sense is developed through the use of number lines: the idea that the space between each of the counting numbers is equal in size; that the "distance" between each whole number and the next all numbers is the same, an important foundation for placing fractions on a number line in the intermediate grades.			

Grade 1: Spring

W5. Number Tracks: 1.NBT.A.1 Number Sense: Number Lines & Numeral Writing

3	2	1	0
Student writes all the numbers correctly	Student correctly completes one of the number tracks. And only makes one or two mistakes on the second track	Student makes one or two mistakes on both tracks.	Student makes multiple errors on both tracks.
Commentary: For this problem reversals (i.e., a backward 3) should still be counted as correct, however if the digits are transposed (i.e., the student writes 18 instead of 81), it is considered an error. This task is designed to see if students can write numbers, but also to determine if they can discern where they are in the counting sequence and continue that sequence.			

Grade 1: Spring

Universal Screener for Number Sense

Quick Script, *print 1 copy/test administrator*

1. Verbal Counting: 1.NBT.A.1

"Start counting from 64 and I will tell you when to stop." (Stop at 72)

- If successful, **say "Start counting from 96."** (Stop at 120)
- If unsuccessful, **say "Start counting from 28."** (Stop at 32)

2. Backward Counting: 1.NBT.A.1

"Count back from 32 and I will tell you when to stop." (Stop at 28)
"Now count back from 17 and I will tell you when to stop." (Stop at 10)

3. Numeral Reading: 1.NBT.A.1

"Read these numbers." Show one card at a time. (20, 15, 12, 51, 78, 60, 109, 116)
If on the first attempt a student misreads a number, the teacher may return to that number if they feel that the student might correct themselves with a second attempt.

4. Addition and Subtraction: 1.OA.C.6

Place the card 14 – 5 in front of the student. "**Read this card."** (Ensure that the student reads the card accurately. Correct them if necessary.) **"How much is 14 – 5?"**
When it isn't obvious, use questioning to reveal the student's thinking. If the student explains that they used a count-by one-strategy, ask, **"Do you have another way of thinking about this problem?"**
- If the student is unable to solve 14 - 5 show them the card that says 11 – 3 and prompt as above.

5. Addition and Subtraction: 1.OA.C.6

Show the card 8 + 6. Say, **"Let's try this problem. Read this card."** (Ensure that the student reads the card accurately. Correct them if necessary.) **"How would you solve this problem?"**
Use questioning to reveal the student's thinking. If the student explains how they solved by demonstrating a count by one strategy, ask, **"Do you have another way of thinking about this problem?"**
- If the student is unsuccessful show the card 9 + 4 and prompt again as above.
- If student is also unsuccessful with 9 + 4 present the card that says 6 + 3.

Place Value – Add a Ten: 1.NBT.C.5

6. Show the student a strip of 10 dots (see the materials). Ask, **"How many dots are here?"** Allow the student to count if necessary. **"That's right. Whenever you see dots in a rectangle like this there will be 10 dots."** Slide the 4-dot square next to the 10-strip. **"How many dots are there now?"** If the student counts all the dots, starting from 1 again, take note. The highest level on this task is 2, but continue with the next part of the task.

Leave the 14 dots and add 4 more ten-strips and put the card that says 54 by the dots. "**Now there are 54 dots."** Cover the 54 dots but leave the number 54 in view. I am going to add on 10 more. Slide another 10-strip under with the others. **"Now how many dots are under here?"** If the student pauses for a long time, you may repeat the prompt, **"There were 54 (point to the numeral). I put 10 more with the 54. How many are there now?"**

Comparing Sets: 1.OA.A.1

7. Put 8 counters of one color and 12 counters of another color in two separate piles in front of the student. (e.g. 8 blue counters and 12 yellow counters). **"Here are 8 (blue) counters. And here there are 12 (yellow) counters." Are there more (blue) or (yellow) counters?"**

- If student does not respond correctly, score at a level 0 and do not continue.
- If the student responds correctly say, **"That's right, there are more (yellow) counters. How many more?"**

If it might be helpful, an additional prompt of, **"How many more counters are there in this pile than in this pile?"** (or refer again to the colors.)

Grade 1: Spring

Universal Screener for Number Sense

Spanish Quick Script, *print 1 copy/test administrator*

1. Contando Verbalmente: 1.NBT.A.1

"Comienza contando del 64 y yo te diré cuando parar." (Para al 72)

- Con éxito, **diga "Comienza contando del 96."** (Para al 120)
- Sin éxito, **diga "Comienza contando del 28."** (Para al 32)

2. Contando hacia atrás: 1.NBT.A.1

"Cuenta hacia atrás del 32 y yo te diré cuando parar." (Para al 28)
"Ahora Cuenta hacia atrás del 17 y yo te diré cuando parar." (Para al 10)

3. Leyendo Numerales: 1.NBT.A.1

"Lee estos números." Demuestre una tarjeta a la vez. (20, 15, 12, 51, 78, 60, 109, 116)
Si en el primer intento el estudiante lee mal un número, el maestro puede regresar a ese número si piensa que el estudiante pueda corregirse a sí mismo con un segundo intento.

4. Adición y Sustracción: 1.OA.C.6

Coloca la tarjeta de 14 – 5 adelante del estudiante. "**Lea esta tarjeta."** (Asegúrese de que el estudiante lea la tarjeta exactamente. Corríjalo si es necesario.) **"Cuanto es 14 – 5?"**
Cuando no es ovio, usa preguntas para revelar el pensamiento del estudiante. Si el estudiante explica que el uso la estrategia de contar por uno, pregunta, **¿"Tienes otra manera de pensar acerca de este problema?"**
- Si el estudiante no puede resolver 14 - 5 Enséñele la tarjeta que dice 11 – 3 e indíquele de nuevo como anteriormente.

5. Adición y Sustracción: 1.OA.C.6

Demuestre la tarjeta 8 + 6. Diga, **"Vamos a trabajar este problema. Lea la tarjeta."**
(Asegúrese de que el estudiante lea la tarjeta exactamente. Corríjalo si es necesario.)
"Como solucionarías este problema?"
Usa preguntas para revelar el pensamiento del estudiante. Si el estudiante explica que el uso la estrategia de contar por uno, pregunta, **¿"Tienes otra manera de pensar acerca de este problema?"**
- Si el estudiante no es exitoso demuestre la tarjeta 9 + 4 e indíquele de nuevo como anteriormente.
- Si el estudiante continua sin éxito con 9 + 4 presenta la tarjeta que dice 6 + 3.

Grade 1: Spring

Universal Screener for Number Sense

Spanish Quick Script page 2

Valor Posicional – Agregue diez: 1.NBT.C.5

6. Enséñele al estudiante una banda de 10 puntos. (vea los materiales). ¿Pregunte, **"Cuantos puntos hay aquí?"** Permita al estudiante que cuente si es necesario. **"Eso es correcto. Cuando sea que tu veas puntos en un rectángulo como este van a ser 10 puntos."** Desliza el cuadrado de 4 puntos al lado de la banda de 10. **"Cuantos puntos hay ahora?"** Si el estudiante cuenta todos los puntos, comenzando de 1 de nuevo, toma nota. El mayor nivel de esta tarea es 2, pero continua con la siguiente parte de la tarea.

Deja los 14 puntos y agrega 4 bandas más de 10 puntos y pon la tarjeta que dice 54 por los puntos. "**Ahora hay 54 puntos."** Cubre los 54 puntos, pero deja el número 54 en vista. Yo voy a agregar 10 más. Desliza otra banda de 10 debajo con los otros. **"Ahora cuantos puntos hay aquí debajo?"** Si el estudiante toma una larga pausa, entonces repita la pregunta, **"Habían 54 (puntos al numeral). Yo puse 10 más con los 54. ¿Cuántos hay ahora?"**

Comparando conjuntos: 1.OA.A.1

7. Ponga 8 fichas de un color y 12 fichas de otro color en dos montones separados adelante del estudiante. (e.g. 8 fichas azules y 12 fichas amarillas). **"aquí hay 8 (azules) fichas. Y aquí hay 12 (amarillas) fichas." ¿Hay más (azules) o (amarillas) fichas?"**

- Si el estudiante no responde correctamente, califica al nivel 0 y no continúe.
- Si el estudiante responde correctamente diga, **"Eso es correcto, hay más (amarillas) fichas. ¿Cuántas mas?"**

Si seria beneficial, una pregunta más de, **¿"Cuantas fichas más hay en este montón que en el otro montón?"** (O refiérase de nuevo a los colores)

Grade 1: Spring

Universal Screener for Number Sense

Interview Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language: □ English □ Spanish □ Other: _____

Verbal Counting 1.NBT.A.1	*score*
1. Count from 64 to 72. If successful, 96 to 120. If unsuccessful, 28 to 32. *Mark as good* ✓ *Hesitant or self-corrections* ▬ *Unsuccessful* X A □ *64 – 72* B □ *96 - 120* C □ *28 - 32* *A + B fluent 3pts. A+B with hesitations 2 pts C correct only 1 pt Unsuccessful all 0 pt*	
Backward Counting 1.NBT.A.1	*score*
2. Count back from 32 to 28. Count back from 17 to 10. *Notes:* □ *both fluent 3 pts.* □ *one count correct or with hesitancy: 2 pts.* □ *both unsuccessful: 1 pt.*	
Numeral Reading 1.NBT.A.1	*score*
3.“Read these numbers.” *20___ 15___ 12___ 51___ 78___ 60___ 109___ 116___* *Notes:* □ *all fluent: 3 pts.* □ *correct not fluent: 2 pts.* □ *any incorrect: 1 pt.*	
Addition and Subtraction 1.OA.C.6	*score*
4. 14 - 5 *Notes:* □ *solves efficiently: 3 pts.* □ *solves 11 - 3: 2 pts.* □ *unsuccessful: 1 pt.*	
5. 8 + 6 *Notes:* □ *solves efficiently: 3 pts.* □ *count from one or only solves 9 +4: 2 pts.* □ *solves only 6 +3: 1 pt.* □ *unsuccessful: 0 pts.*	
Place Value – Add a Ten: 1.NBT.C.5	*score*
6. 54 + 10 *Notes:* □ *solves w/o cnt by 1: 3 pts.* □ *counts by 1s to solve: 2 pts.* □ unsuccessful*: 1 pt.*	
Place Value – Add a Ten: 1.NBT.C.5	*score*
7. Compare set of 12 and 8 counters. *Notes:* □ *solves w/o materials.: 3 pts.* □ *solves with materials 2 pts.* □ *id greater no solve: 1 pt.* □ *No ID of greater 0 pt.*	

Grade 1: Spring

Universal Screener for Number Sense

Written Component, *print 1 copy/student*

Name _____ Date _____

1. 8 kids were at a lunch table. 4 more kids came and sat down. Then 6 more kids sat down at the table. How many kids are at the lunch table now? Show your answer in pictures, words, or numbers.

2. What numbers go in the boxes? Add and subtract.

☐ + 4 = 5 5 = ☐ - 3

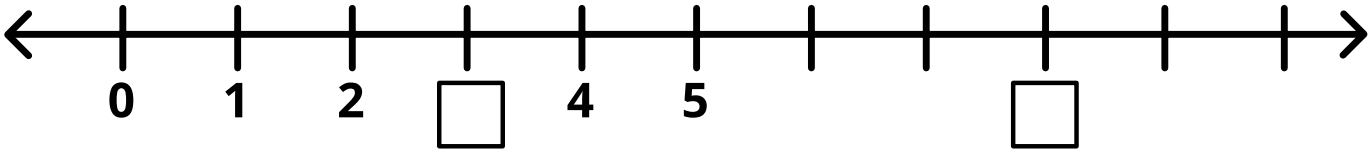
8 + ☐ = 10 ☐ = 7 - 2

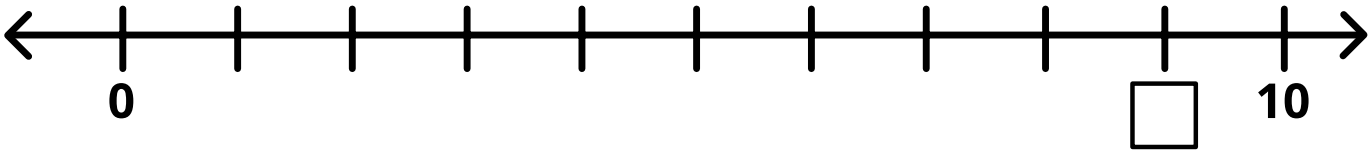
Grade 1: Spring

3. Solve these problems.
   Draw pictures and use blocks or sticks if you need to.

50 – 10 = ☐ 70 – 20 = ☐ 80 – 70 = ☐

4. What numbers go in the boxes?





5. Which numbers go in the white boxes?

21	22	23									

	80				84

Grade 1: Spring

Universal Screener for Number Sense

Spanish Written Component, *print 1 copy/student*

Nombre _____ Fecha _____

1. 8 niños estaban en la mesa de almuerzo. 4 niños más vinieron y se sentaron. Después 6 niños más se sentaron en la mesa. ¿Cuántos niños más hay en la mesa de almuerzo? Demuestra tu respuesta con figuras, palabras y números.

2. ¿Qué números van en los espacios? Agrega y resta.

☐ + 4 = 5 5 = ☐ - 3

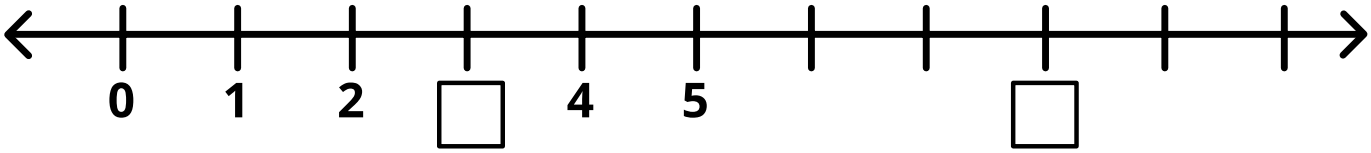
9 + ☐ = 10 ☐ = 7 - 2

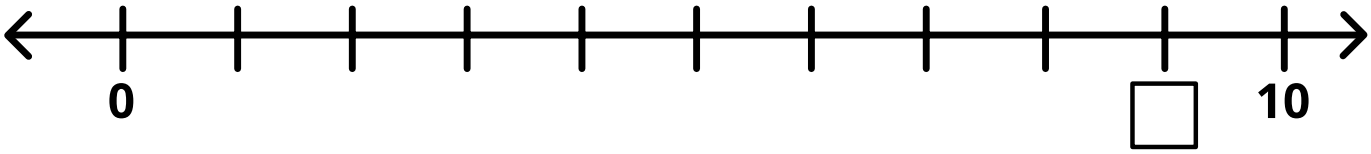
Grade 1: Spring

3. Resuelve estos problemas.
Dibuja figuras y usa bloques o palos si necesitas.

50 – 10 = ☐ 70 – 20 = ☐ 80 – 70 = ☐

4. ¿Qué números corresponden en los espacios?





5. ¿Qué números van en las cajas blancas?

21	22	23									

	80				84

Grade 1: Spring

Universal Screener for Number Sense

Cards for Interview: One set per teacher

20	15	12	51
78	60	109	116

14 - 5	11 - 3

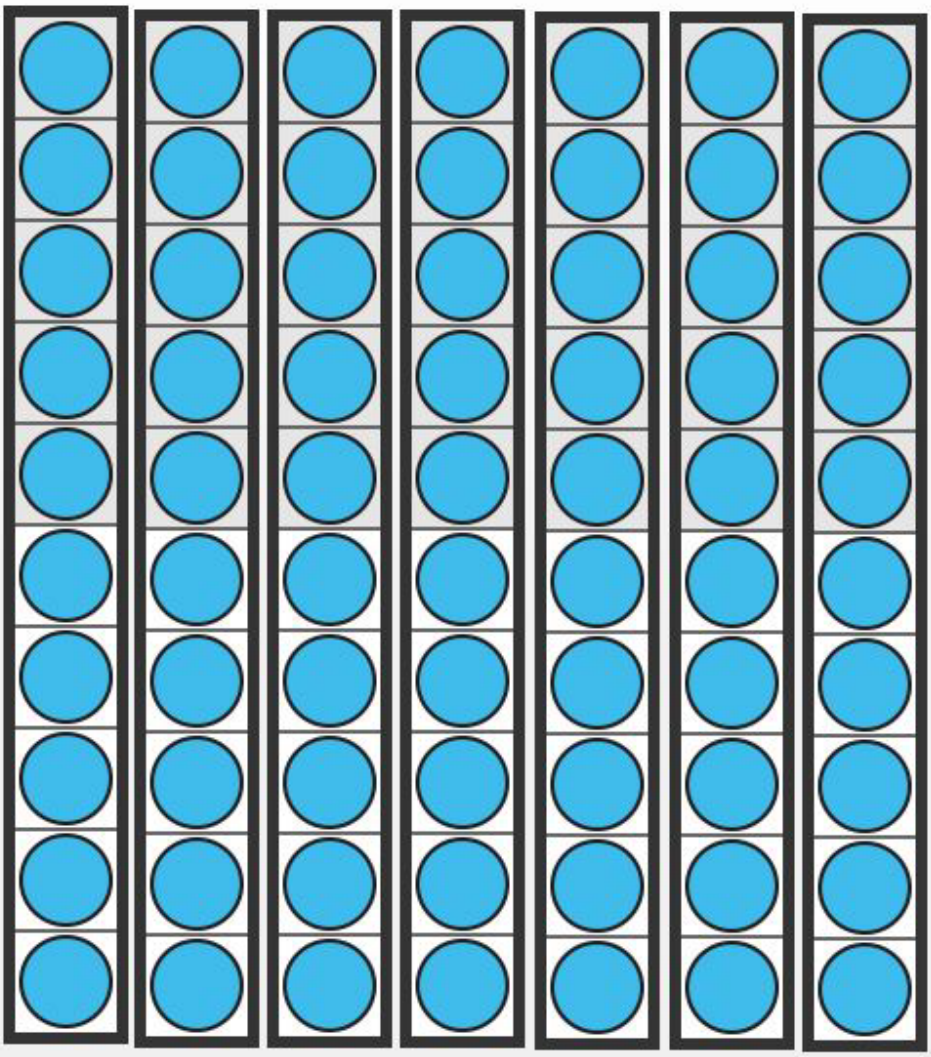
8 + 6
9 + 4
6 + 3

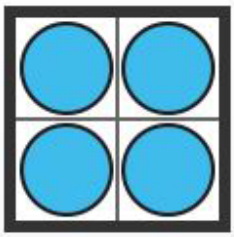
Grade 1: Spring

Universal Screener for Number Sense

Materials for Interview: One set per teacher

Cut out seven strips of ten dots and the square of 4.





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Grade 2: Spring

Universal Screener for Number Sense

Instructions and Guidance

Interview 5 – 8 minutes each

Interviews should be conducted one-on-one with students. Do not provide paper and pencil, and only provide materials as directed.

This can be done by sitting with a single student and working through all of the questions, or can be done one or two questions at a time. For example, teachers might find that they can quickly and easily assess counting by moving around the room to listen to students count and then, later, in a separate session, set up a table with the necessary materials and pull students one at a time to complete those tasks that use materials.

Who? Whenever possible, the teacher who works most directly with the child should be the one to administer the interview portion of the screener and score the written portion.

Limit Questioning: It is usually best to attempt to limit questioning and move at a steady pace through the tasks. This improves the efficiency, but also helps to ensure the consistency of administration, and therefore the reliability of the results.

Be flexible. You might find that you can work most efficiently by administering one task at a time, moving from student to student rather than having them come to a station. This can be done with the counting tasks and numeral ID task. Users of Forefront will find that the interview tool can be switched to focus on tasks. Here is a help article for using the interview tool.

Collaborate. Sometimes groups of students can be reorganized in creative ways to provide one teacher with the ability to sit with individual students.

Watch carefully and take notes. The nuances in behaviors that reveal a child's number sense development are sometimes hard to see and hear.

Video tape. Although it is not necessary for the administration of the assessment, recording an assessment or two to discuss with colleagues can be an excellent way to learn together and build consistency in administration and scoring.

Written Portion – Provide a 60-minute class period. Many students will finish in 30 minutes or less.

The written portion of this assessment is best given in small groups or centers. Care should be taken to ensure that students are not given opportunities to collaborate on the assessment.

Unlike the interview section, it is less important who manages the administration of the written portion. That is, it is appropriate that the written portion be administered by a paraeducator or volunteer, however it is still best for the teacher to score the written portion of the assessment.

Teachers may read the assessment to the students. Ideally, students who are able to read the assessment independently should be given the opportunity to do so and those students who need support with the reading will be given that support either individually or in small groups.

Do not provide calculators.

For written tasks, provide manipulatives that are familiar to the student as needed.

Grade 2: Spring

Universal Screener for Number Sense

Detailed Script and Rubrics, *print 1 copy/test administrator*

1. Count from 697 - 702: 2.NBT.A.2 Number Sense: Forward Number Word Sequences

"Start counting at 697 and I will tell you when to stop." (Stop at 702)

- If student is unsuccessful prompt the student to make a second attempt saying, **"Let me hear that one more time."**
- If student is still unsuccessful say, **"Let's do one more count. This time I'd like you to start at 98 and continue counting."** (Stop at 112.)

3	2	1	0
Student is able to successfully complete count from 697 on first attempt.	Student correctly counts from 697 on a second attempt. Or on first attempt with pauses and/or self-corrections.	Student is unsuccessful with the count from 697, but does successfully count from 98 to 112	Student is not successful with either count.
Commentary: The ability to count verbally is a very strong indicator of number sense. This task is a continuation of previous verbal counting tasks. The count from 697 to 702 reveals an understanding of place value and the number system. While earlier counts (e.g., 1 – 20) are rote, memorized sequences, counts in the higher numbers are not memorized in the same way. To complete these counts students rely on the patterns of place value. For students who perform at a level 0 on this tasks, further assessments should be performed to determine the extent of the student's verbal number sequence and additional instruction and opportunities for targeted practice should be provided. For students who score at a level 1, who demonstrate that they can count from 98 – 112, but are unsuccessful when counting from 697 – 702, it implies that there is a memorized sequence that has not yet been generalized so that it can apply to larger numbers and other counts. Help the student to see the patterns, and support them in making connections.			

2. Count Back from 302: 2.NBT.A. 2 Number Sense: Backward Number Word Sequences

"Count back by ones from 302." (Stop at 296)

If the student starts counting forward instead of backward, stop the student and say, **"That is counting forward. This time we are counting backward, like 3, 2, 1."**

- If student is unsuccessful say, **"Ok let's try another one. This time start at the number 113 and count back."** (stop at 98)
- If student is still unsuccessful say, **"Let's do one more. This time start at 23 and count back."** (Stop at 10)

3	2	1	0
Student is able to successfully complete the count from 302 - 296	Student is unable to count from 302 to 296, but does count from 113 – 98.	Student is unsuccessful with first two counts, but successfully counts back from 23 - 10	Student is not successful with any of the counts.
Commentary: Counting backward demonstrates a strong command of the counting sequence. It is highly correlated with proficiency in subtraction.			

Grade 2: Spring

3. Read Numbers in the Hundreds: 2.NBT.A.3 Number Sense: Numeral ID

"Read this number." Show the numbers one at a time.

111 909 818 776 555

If the student reads any of the numbers incorrectly, you may present the number again to determine if a score of 2 is appropriate.

3	2	1
Student reads all numbers correctly and fluently	Student reads numbers correctly but has pauses or makes self-corrections.	Student cannot accurately read all numbers.
Commentary: As numbers increase in magnitude, the ability to read these numbers begins to become associated with place value. In addition to the understanding of the number system that this supports, the memorization of the names of the different places in order to accurately read numbers is an important skill for communication and for accessing instructional materials. **A note about reading numbers**: Some students when reading numbers in the hundreds will insert an "and" after the hundreds. (e.g., eight hundred and eighteen.) For this assessment, score that as a correct reading. Similarly, if the student says, "a hundred eleven," instead of the more formal "one hundred eleven," this too should be considered as correct for this assessment.		

4. Subtract 62 - 13: 2.NBT.B.5 Number Sense: Place Value: Mental Math

Present the card 62 - 13. **"Read this card."** (Make sure that the student reads accurately. Correct the student if they do not.) **"Solve this problem."** Teacher may choose to ask, **"How did you solve the problem?"**

- If a student applies a procedure (e.g., drawing with a finger on the desk and reproducing the traditional algorithm), ask the student. **"Why does that work?"**
- If the student is unsuccessful, present the card 51-4. **"Read this card."** (Make sure that the student reads accurately. Correct the student if they do not.) **"Solve this problem."**
- If the student is unsuccessful with either of the previous tasks, present the card that says 21 – 3. (Again, make sure that the student reads accurately. Correct the student if they do not.) **"Solve this problem."**

3	2	1	0
Student solves 62 - 13. (49) by subtracting a 10 and 3 ones, or a count back by 1s strategy. Student may correct themselves when explaining their strategy OR Student solves correctly using a traditional algorithm or other procedure, and explains why it works using ideas of tens and ones in their explanation.	Student solves 51 – 4, but not 61 - 13. OR Student solves 61 – 13 using a traditional algorithm but does not clearly explain using tens and ones.	Student solves 21 – 3, but neither of the previous two problems.	Student is not successful with any of the subtraction tasks.
Commentary: Listen for the strategies that the student uses in solving these problems. For the performance level 3 a count back by ones to solve 62 - 13 has been included. Although this is quite different from the preferred strategy of removing the 10 as a unit (e.g., 62 – 10 = 52) without counting the ten, keeping track of 13 counts back requires some strategy for keeping track of the 10 (e.g., fingers) demonstrating a sense of 10s that is the target of the problem. If student replicates a traditional algorithm (e.g., "I crossed out the 6 and put 1 here"). Listen carefully to their explanation. What this problem seeks to reveal is if the student understands the relationship of the 10s and 1s. If the student answers correctly but rotely applies a procedure, score at level 2.			

Grade 2: Spring

5. Subtract 78 – 50 with Tens Strips: 2.NBT.B.5 Number Sense: Ones, Tens and Hundreds

Show the student a 10 strip. "**I have these strips of dots. Each of these strips has 10 dots."** Allow the student to count the dots if they would like. Take 7 strips of 10 and slide them in front of the student. Then slide the 8 dots next to the 7 strips. **"Here are 78 dots. I am going to cover these up.**" Cover with something. Place the number card "78" off to the side. **"I will put this number here to help you remember."**

Reach under the cover and remove 5 of the ten-strips while preventing the student from seeing the remaining dots. Leave the 5 ten-strips on the table visible. **"There were 78, and I took 50 back out. How many dots are left under here?"**

If the student begins to attempt to solve by counting back by 1s, interrupt them and say, **"Counting back like that could solve the problem but that would take a long time. Do you have another way to solve it?"**
Ask the student to explain their strategy if it is not evident or if the student answers incorrectly.

3	2	1
Student answers 28.	Student solves the problem but makes self-corrections while solving or when asked to explain strategy.	Student is unsuccessful.
Commentary: Operating with tens and ones is a major goal of 2nd grade and is fundamental for the continued success with the conceptualization of place value. Students should be able to add ones and tens with relative ease at this time. When students are struggling with these concepts it is important to provide visual models to support their development. When students have developed ways of solving multi-digit subtraction problems using procedures, they can often arrive at correct answers without truly understanding the tens and ones, which can lead to errors and confusion when they apply the procedures to solve more difficult problems. For example, when presented symbolically many students will say "seven minus five is two," without really having developed an understanding of tens and ones.		

6. Add 198 + 10: CCSS: 2.NBT.B.8 Number Sense: Place Value: Mental Math

Show the card that says 198 + 10. **"Read this card to me."** Ensure that the student has read the card correctly and correct them if necessary. **"How much is 198 plus 10?"** Teacher may choose to ask, **"How did you solve the problem?"**

3	2	1
Student solves the problem using the ten, or the student adds 2 and then 8.	Student counts by ones to solve the problem. And/or student makes self-corrections while solving or when explaining their strategy.	Student is unsuccessful.
Commentary: While the two prior tasks focus on tens and ones under 100, this task probes the student's understanding of tens and hundreds.		

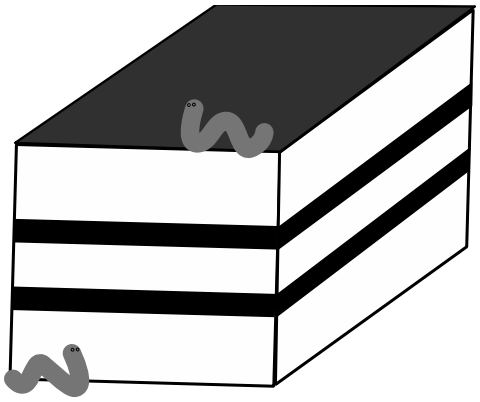
Grade 2: Spring

Universal Screener for Number Sense

Standards Alignment and Scoring Guides for Written Tasks, *print 1 copy/test administrator*

W1: Story 72 – 58 = W: 2.OA.A.1 Number Sense: Problem Solving - Add/Subtract

Karen had 72 worms in a box in her garden. When she checked it the next day there were only 58. How many worms escaped? Show how you solved the problem and write an equation to explain your thinking.



A variety of equations or expressions are acceptable. Students can represent the unknown with a letter, a box, ?, or a blank. Or student can have the answer in their equation. **Answer**: 14
Equation: 72 – 58 = w, 58 + w = 72, 72 – w = 58, or other acceptable answer (see commentary)

3	2	1
Student accurately solves the problem, provides an accurate equation, and explains logic in words, pictures or numbers.	Student does 2 of the following 3. • Student accurately solves the problem. • Student explains how they solved the problem in a way that did or could lead to an accurate solution using words, pictures and/or numbers. • An accurate equation or expression	The student's work is below a level 2.

Commentary: The problem presented here represents one of the many problem types that students are expected to solve in 2nd grade. The ability to apply mathematics in context is a major indicator of number sense.

Students may show how they solved the problem in a wide variety of ways. Look for viable strategies that correctly match the situation and which justify the answer given. If the student only uses numbers to explain their solution, accept that as a reasonable solution (words and pictures are not mandatory).

This question directs students to represent the situation with an equation and explanation. Some students will write multiple equations that they used to solve the problem. (e.g., 72 – 8 = 64 and 64 – 50 = 14) These kinds of responses should be counted correct. Students do not need to put a letter for the unknown. Blanks or boxes or equations that provide the full solution (e.g., 72 - 58 = 14) are acceptable level 3 responses.

If a student creates an equation that is not balanced, that is something like 72 – 50 = 22 – 8 = 14, this should not be scored as a correct equation because 72 - 50 ≠ 22 – 8 This error should be noted and addressed through instruction.

Grade 2: Spring

W2. Story 15 + S = 46 : 2.OA.A.1 Number Sense: Problem Solving – Addition/Subtraction
Kevin has a collection of stamps. He got 15 new stamps for his birthday. Now he has 46 stamps in his collection. How many stamps were in his collection before he got the 15 stamps for his birthday? Show how you solved the problem and write an equation to explain your thinking.

A variety of equations or expressions are acceptable. Students can represent the unknown with a letter, a box, a ?, or a blank. Or student can have the answer in their equation. **Answer:** 31
Equation: 15 + s= 46, 46 -15 = s, or other acceptable equation

3	2	1
Student accurately solves the problem, provides an accurate equation, and explains reasoning in words, pictures or numbers.	Student does 2 of the following 3. • Student accurately solves the problem. • Student explains how they solved the problem in a way that did or could lead to an accurate solution using either words pictures or numbers. • An accurate equation(s) or expression (s)	The student's work is below a level 2.

Commentary: This problem represents another of the problem types that students are expected to solve in 2nd grade. The ability to apply mathematics in context is a major indicator of number sense.

Students may show how they solved the problem in a wide variety of ways. Look for viable strategies that correctly match the situation and which justify the answer given. If the student only uses numbers to explain their solution, accept that as a reasonable solution (words and pictures are not mandatory).

This question also asks students to represent their solution with an equation and explanation. Some students will write multiple equations that they used to solve the problem. (e.g., 15 + 30 = 45 and 45 + 1 = 46) These kinds of responses should be counted as correct.

If a student creates an equation that is not balanced, that is something like 15 + 30 = 45 + 1 = 46 this cannot be a level 3 response. While this does show number sense, the equation is incorrect (15 +30 ≠ 35 + 1). This should be noted and addressed through instruction.

Grade 2: Spring

W3. Addition Fluency under 100: 2.NBT.B.5

Number Sense: Place Value – Solve Written Problems

Show two or more different ways to solve. 35 + 36 = _____

3	2	1
Student demonstrates at least two distinct strategies for arriving at the correct solution. (see commentary below)	Student shows one distinct strategy of arriving at the correct solution.	Student does not give the correct solution.

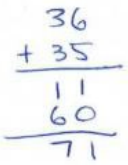
Commentary: The ability to fluently solve addition problems is a major goal of 2nd grade. The three attributes of fluency include: accuracy, flexibility, and efficiency. Flexibility and accuracy are the focus of this question. Flexibility in computation central to number sense.

It is important that teachers look fortwo distinctly different strategies. Below is a list of the most frequent strategies. There are others.

Tens then Ones or Ones then Tens (count each as distinct strategy)

- 30 + 30 = 60 and 5 + 6 = 11 and 60 + 11 = 71, so 35 + 36 = 71
- 5 + 6 = 11 and 30 + 30 = 60 and 60 + 11 = 71, so 35 + 36 = 71

Partial Sums: Although the partial sums (or "show all sums") method is functionally identical to the Tens and Ones or Tens then Ones method above, it is considered a distinct strategy for this assessment.



Tens and Ones then More Ones

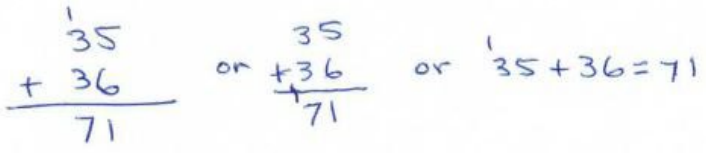
- 30 + 30 = 60 put the 5 back on so 30 + 35 = 65, and 65 + 6 = 71

Jumps of Tens and Ones or Ones and Tens (count each as distinct strategy)

This strategy is often modeled using a number line.

- 35 + 30 = 65 and 65 + 6 = 71, so 65 + 6 = 71
- Or 35 + 6 = 41 and 41 +30 = 71, so 65 + 6 = 71

Traditional Algorithms (these are all representations of the same distinct strategy and should be counted as one distinct strategy even if the child uses two of these.)



Build off 35s

- 35 + 36 = 35 + 35 + 1 = 70 + 1 = 71

Count by Ones (either count all or count on)

Drawing all should be discouraged by this point, however if a student does choose to draw all thirty-five and/or thirty-six, count this as one distinct strategy regardless of whether they just count on, or if they count all seventy-one.

Grade 2: Spring

Commentary #3 Continued:

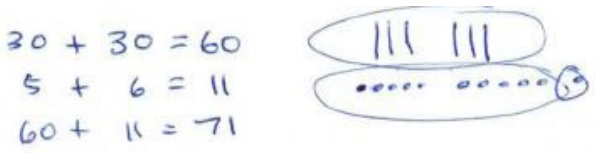
A note about representations:
The strategies above might be represented in a wide variety of ways. For expediency and succinctness, they are only described numerically above.

However, students might show strategies in a variety of ways:

- numerically
- drawings of base ten blocks
- number lines
- verbal descriptions

Although mathematically one could argue that the example below shows only one strategy shown in two ways, For this assessment, <u>different representations may be considered distinct strategies.</u>
The example here shows two distinct strategies:

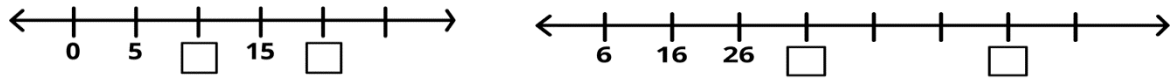
Strategy 1 Strategy 2



<u>Do not</u> count using the commutative property as two distinct strategies.
For example, the two shown below represents only one distinct strategy.

<u>W4. Place Numbers on Number Line: CCSS: 2.MD.B.6</u> <u>Number Sense: Number Lines</u>

What number best goes in each of the empty boxes on the number lines below?



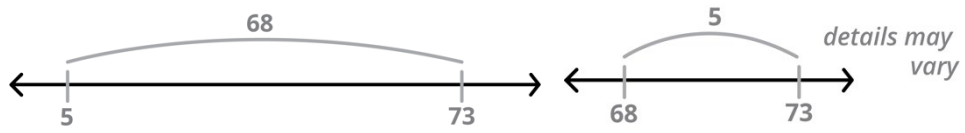
3	2	1
Student has all numbers correct on both number lines. **Answers:** 10, 20 and 36, 66	Student has one incorrect answer	Student has more than one incorrect answer.
Commentary: These two number line tasks assess students' general ability to work with number lines. In this case these tasks related to skip counting and equal intervals. Student should be fully able to use number lines with whole numbers by this point; in third grade students will use number lines to develop initial understandings of fractions.		

Grade 2: Spring

W5. Represent Addition and Subtraction on a Number Line: 2.MD.B.6

Number Sense: Place Value: Create Representations

Use the number line below to show 73 – 68 = 5.



3	2	1
Student has made an accurate representation of the subtraction problem. Ideally the student has shown the problem as a difference problem (as opposed to a takeaway problem)	Student has accurately represented the problem, however the numbers increase in value from right to left rather than the standard left to right. OR Student has attempted to show 73 and/or 68 individual ones on the number line. (i.e. a count-by-ones strategy.)	Student has not accurately represented the subtraction problem.
Commentary: The range of possible answers to this problem can make it difficult to score. In general, if the student has clearly represented the problem and the work clearly matches the equation it should be considered level 3. When student work presents an "approximation" of the situation, and there are problems with the representation that suggest that the student is perhaps confused about some aspect of the representation, it should be scored as a 2. When the representation is missing numbers, or the numbers don't relate to the problem. If, for example, the student put the number 5, the number 68 and the number 73 onto the line, but there is no indication of the relationship of these three numbers, this should be considered an example of a level 1 response.		

Grade 2: Spring

Universal Screener for Number Sense

Quick Script, *print 1 copy/test administrator*

1. Verbal Counting: 2.NBT.A.2

"Start counting at 697 and I will tell you when to stop." (Stop at 702)

- If student is unsuccessful: **"Let me hear that one more time."**
- If student is still unsuccessful: **"Let's do one more count. This time I'd like you to start at 98 and continue counting."** (Stop at 112.)

2. Backward Counting: 2.NBT.A. 2

"Count back by ones from 302." (Stop at 296)

- If student is unsuccessful: **"Ok let's try another one. This time start at the number 113 and count back."** (stop at 98)
- If student is still unsuccessful: **"Let's do one more. This time start at 23 and count back."** (Stop at 10)
- If student counts forward instead of backward, say: **"That is counting forward, this time we are counting backward, like 3, 2, 1."**

3. Read Numbers: 2.NBT.A.3

"Read this number." Show the numbers one at a time. 111, 909, 818, 776, 555

If a student reads incorrectly, give an opportunity if they may correct themselves.

4. Subtract: 2.NBT.B.5

Present the card 62 - 13. **"Read this card."** (Make sure that the student reads accurately. Correct the student if they do not.) **"Solve this problem."** Teacher may choose to ask, **"How did you solve the problem?"**

- If a student applies an procedural algorithm: "Why does that work?"
- If the student is unsuccessful, present the card 51-4. Read this card.
- If the student is unsuccessful with either of the previous tasks, present the card that says 21 – 3. (Again, make sure that the student reads accurately. Correct the student if they do not.) **"Solve this problem."**

5. Subtract Tens: 2.NBT.B.5

Show the student a 10 strip. "**I have these strips of dots. Each of these strips has 10 dots."** Allow the student to count the dots. Take 7 strips of 10 and slide them in front of the student. Then slide the 8 dots with the 7 strips. **"Here are 78 dots." I am going to cover these up."** Cover with something. Place the number "78" off to the side. **"I will put this number here to help you remember."**

- Remove 5 of the 10-strips. **"There were 78, and I took 50 back out. How many dots are left under here?"**
- If the student begins to attempt to solve by counting back by 1s, interrupt them and say, **"Counting back like that could solve the problem but that would take a long time. Do you have another way to solve it?"**

6. Add Tens: 2.NBT.B.8

Show the 198 + 10. **"Read this card to me."** Ensure that the student has read the card correctly and correct them if necessary. **"How much is 198 plus 10?"** Teacher may choose to ask, **"How did you solve the problem?"**

Grade 2: Spring

Universal Screener for Number Sense

Spanish Quick Script, *print 1 copy/test administrator*

1. Contando Verbalmente: 2.NBT.A.2

"Comienza contando del 697 y yo te diré cuando parar." (Para al 702)

- Si el estudiante no es exitoso: **"Déjame escuchar eso una vez más."**
- Si la estudiante continua sin éxito: **"Vamos a contar una vez más. Esta vez me gustaría que comiences al 98 y continúa contando."** (Para al 112.)

2. Contando hacia atrás: 2.NBT.A. 2

"Cuenta hacia atrás por unos desde 302." (Para al 296)

- Si el estudiante no es exitoso: **"Ok vamos a tratar otra. Esta vez comienza del número 113 y cuenta hacia atrás."** (Para al 98)
- Si la estudiante continua sin éxito: **"Vamos a hacer una más. Esta vez comienza al 23 y cuenta hacia atrás."** (Para al 10)
- Si el estudiante cuenta hacia adelante en lugar de hacia atrás: **"Eso es contando hacia adelante, esta vez estamos contando hacia atrás, como 3, 2, 1."**

3. Leyendo Números: 2.NBT.A.3

"Lee este número." Demuestre los números uno a la vez. 111, 909, 818, 776, 555

Si el estudiante lo lee incorrectamente, provea la oportunidad si cree que se pueda corregir por sí solo.

4. Sustracción: 2.NBT.B.5

Presente la tarjeta 62 - 13. **"Lee esta tarjeta."** (Asegúrese de que el estudiante lea con precisión. Corríjalo si no lo hace.) **"Resuelve este problema."** ¿El maestro puede elegir de preguntar, "Como resolviste el problema?"

- Si un estudiante aplica un algorítmico procedimiento: ¿Porque eso funciona?"
- Si el estudiante no es exitoso, presente la tarjeta 51-4. Lee esta tarjeta.
- Si el estudiante no es exitoso con ninguna de las dos tareas anteriores, presente la tarjeta que dice 21 – 3. (De nuevo, asegúrese que el estudiante lea con precisión. Corrija al estudiante si no lo hace.) **"Resuelve este problema."**

5. Sustrayendo en diez: 2.NBT.B.5

Enseñe al estudiante una banda de 10. "**Yo tengo estas bandas de puntos. Cada una de estas bandas tiene 10 puntos."** Permita al estudiante contar los puntos. Tome 7 bandas de 10 y deslícela adelante del estudiante. Después deslice los 8 puntos con las 7 bandas. **"Aquí hay 78 puntos." Yo voy a cubrir estas."** Cúbralas con algo. Coloque el numero "78" a un lado. **"Yo voy a poner este número aquí para ayudarte a recordar."**

- Remueva 5 de las bandas de diez. **"Habían 78, y yo saque 50 afuera. ¿Cuántos puntos han quedado aquí debajo?"**
- Si el estudiante comienza a intentar en resolver contando hacia atrás por unos, interrúmpalo y dígale, **"Contando hacia atrás así podría resolver el problema, pero eso tomaría mucho tiempo. ¿Tienes otra manera de resolverlo?"**

6. Agregando Diez: 2.NBT.B.8

Enseñe el 198 + 10. **"Léeme esta tarjeta."** Asegúrese de que el estudiante lea la tarjeta correctamente. Corríjalo si es necesario. **"Cuanto es 198 más 10?"** ¿El Maestro puede elegir si responder, **"Como resolviste el problema?"**

Grade 2: Spring

Universal Screener for Number Sense

Interview Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language: □ English □ Spanish □ Other: _____

1. Verbal Counting: 2.NBT.A.2	score
"Start counting at 697 and I will tell you when to stop." (Stop at 702.) If necessary: give second attempt or count from 98 to 112. *Notes:* □ *fluent from 697: 3 pts.* □ *less than fully fluent with 697 count or takes two attempts: 2 pts.* □ *unsuccessful from 697t, successful with second: 1 pt.* □ *unsuccessful with both counts: 0 pts*	
2. Backward Counting: 2.NBT.A. 2	*score*
"Count back by 1s from 302." (Stop at 296.) If necessary: count back from 113 or from 23 to 10. *Notes:* ☐ *completes 302 to 296: 3 pts.* ☐ *no count from 302 to 296, counts from 113 to 98: 2 pts.* ☐ *first two counts unsuccessful, but counts back 23 to 10: 1 pt.* ☐ *unsuccessful with all counts: 0 pts.*	
3. Read Numbers: 2.NBT.A.3	*score*
Read 111, 909, 818, 776, 555 *Notes:* ☐ *all correct: 3 pts.* ☐ *correct with pauses/self-corrects: 2 pts.* ☐ *not all correct: 1 pt.*	
4. Subtract: 2.NBT.B.5	*score*
62-13 (51-4 and/or 21-3 if necessary) *Notes:* ☐ *solves strategically: 3 pts.* ☐ *solves 51-4 but not 61-13, or solves 61-13 without understanding: 2 pts.* ☐ *student solves 21-3 only: 1 pt.* ☐ *student solves no problems: 0 pts.*	
5. Subtract Tens: 2.NBT.B.5	*score*
78-50 dots *Notes:* ☐ *correct: 3 pts.* ☐ *solves problem with corrections: 2 pts* ☐ *unsuccessful: 1 pt.*	
6. Add Tens: 2.NBT.B.8	
198 + 10 *Notes:* ☐ *solves strategically: 3 pts.* ☐ *counts by 1s or has to self-correct: 2 pts* ☐ *unsuccessful: 1 pt.*	

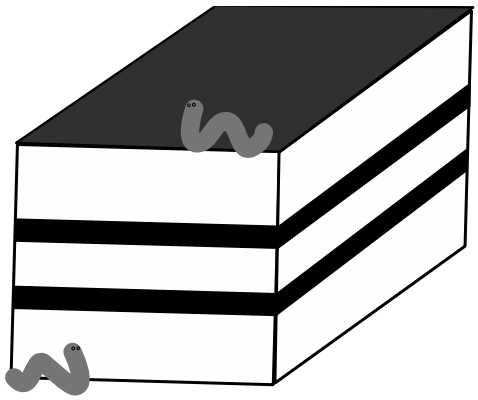
Grade 2: Spring

Universal Screener for Number Sense

Written Component, *print 1 copy/student*

Name _____ Date _____

1. Karen had 72 worms in a box in her garden. When she checked it the next day there were only 58. How many worms escaped? Show how you solved the problem and write an equation to explain your thinking.



Answer _____ worms

Equation _____

2. Kevin has a collection of stamps. He got 15 new stamps for his birthday. Now he has 46 stamps. How many stamps did he have before he got the 15 stamps for his birthday?

Show how you solved the problem and write an equation to explain your thinking.

Answer _____ stamps

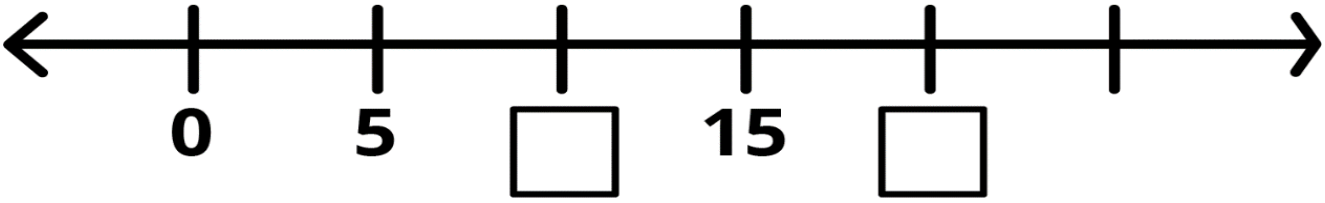
Equation _____

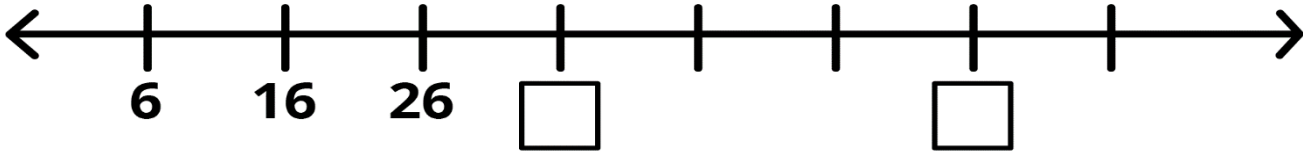
Grade 2: Spring

3. Show two or more different ways to solve.

   35 + 36 = _____

4. What number best goes in the empty boxes on the number lines?





5. Use this number line to show 73 – 68 = 5.

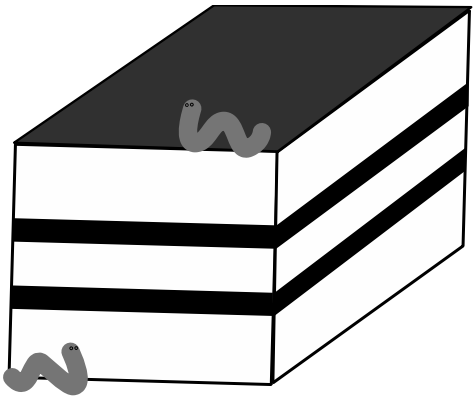
Grade 2: Spring

Universal Screener for Number Sense

Written Component, *print 1 copy/student*

Nombre _____ Fecha _____

1. Karen tenía 72 gusanos en una caja en su jardín. Cuando la chequeo al día siguiente solo habían 58. ¿Cuántos gusanos se escaparon? Demuestra como resuelves el problema y escribe una ecuación para explicar tu manera de pensar.



Respuesta _____ gusanos

Ecuación _____

2. Kevin tiene una colección de estampillas. Le dieron 15 estampillas por su cumpleaños. Ahora tiene 46 estampillas. ¿Cuántas estampillas él tenía antes de que le dieran 15 estampillas por su cumpleaños?

Demuestra como resuelves el problema y escribe una ecuación para explicar tu manera de pensar.

Respuesta _____ estampillas

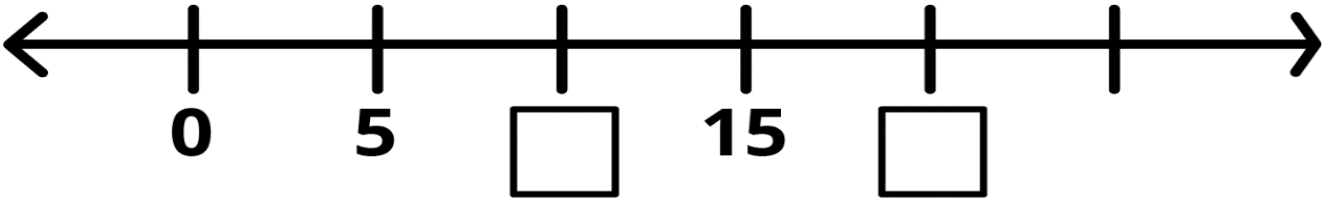
Ecuacion _____

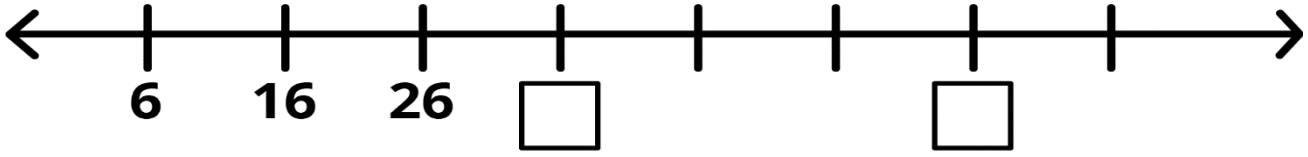
Grade 2: Spring

3. Demuestra dos o más maneras de resolverlo.

   35 + 36 = _____

4. ¿Qué números van mejor en las cajas vacías en la línea numérica?





5. Usa esta línea numérica para demostrar 73 – 68 = 5.

Grade 2: Spring

Universal Screener for Number Sense

Cards of interviews: One set per teacher

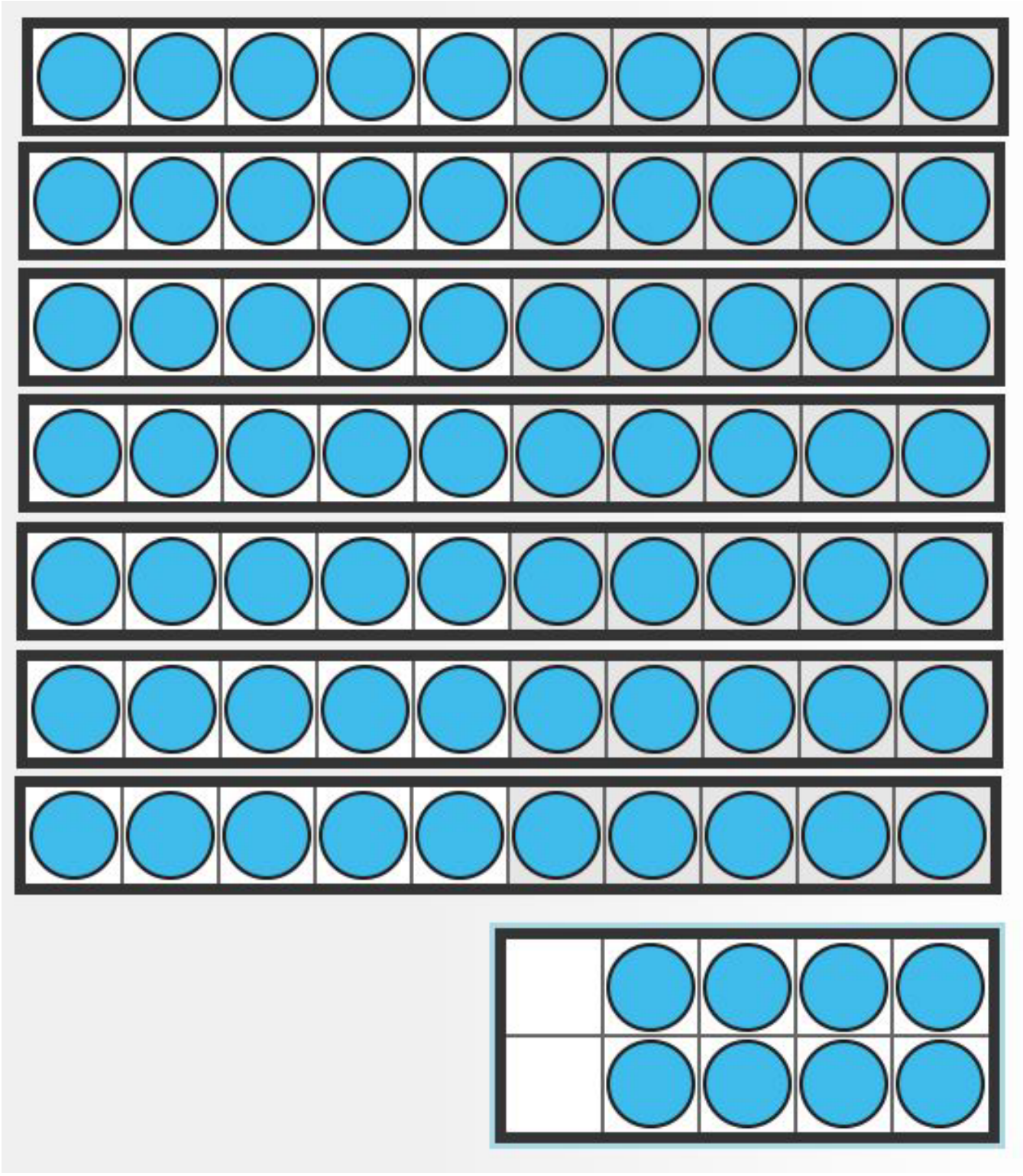
111	909	818
776	555	78

62-13
51 -4
21 - 3
198 + 10

Grade 2: Spring

Universal Screener for Number Sense

Ten strips and 4 more. One set per teacher. Cut into individual strips.



Grade 3: Spring

Universal Screener for Number Sense

Instructions

Interview: 5 – 8 minutes per student

Interviews should be conducted one-on-one with students. Do not provide paper and pencil, and only provide materials as directed.

This can be done by sitting with a single student and working through all of the questions, or can be done one or two questions at a time. For example, teachers might find that they can quickly and easily assess counting by moving around the room to listen to students count and then, later, in a separate session, set up a table with the necessary materials and pull students one at a time to complete those tasks that use materials.

- **Who?** Whenever possible, the teacher who works most directly with the child should be the one to administer the interview portion of the screener and score the written portion.
- **Limit Questioning:** It is usually best to attempt to limit questioning and move at a steady pace through the tasks. This improves the efficiency, but also helps to ensure the consistency of administration, and therefore the reliability of the results.
- **Be flexible.** You might find that you can work most efficiently by administering one task at a time, moving from student to student rather than having them come to a station. This can be done with the counting tasks and numeral ID task. Users of Forefront will find that the interview tool can be switched to focus on tasks. Here is a help article for using the interview tool.
- **Collaborate.** Sometimes groups of students can be reorganized in creative ways to provide one teacher with the ability to sit with individual students.
- **Watch carefully and take notes**. Nuances in behaviors that reveal how students make sense.
- **Video tape.** Although it is not necessary for the administration of the assessment, recording an assessment or two to discuss with colleagues can be an excellent way to learn together and build consistency in administration and scoring.

Written Portion – Provide a 60-minute class period. Many students will finish in 30 minutes or less.

- The written portion of this assessment can be administered whole class. Care should be taken to ensure that students are not given opportunities to collaborate on the assessment.
- Pass the assessment out to all students and begin with the number writing tasks. This could be done as a whole group or with a small group at the teacher's discretion and doesn't even have to be done at the same time as the remainder of the written tasks. Consider what will be best and most efficient for you.
- Unlike the interview section, it is less important who manages the administration of the written portion. That is, it is appropriate that the written portion be administered by a paraeducator or volunteer, however it is still best for the teacher to score the written portion of the assessment.
- Ideally, students who are able to read the assessment independently should be given the opportunity to do so and those students who need support with the reading will be given that support either individually or in small groups.
- Do not allow students to use calculators.
- Ample space is provided for students to do all of the work on the paper, so additional scratch paper should not be necessary.
- Provide manipulatives only in special cases where that accommodation is provided for special programming purposes.

Grade 3: Spring

Universal Screener for Number Sense

Interview - Detailed Script and Rubrics, *print 1 copy/test*

1. **7 by 3 Partial Array of Cans: 3.OA.A.1 & 3.OA.B.7**

Number Sense: Multiplication and Division: Mental Math

"Here is a box for cans. The box holds 7 rows with 3 cans in each row. Some cans have already been put into the box. How many cans will there be when the whole box has been filled?" If you are unsure whether the student applied multiplication (either 7 x 3 or 3 x 7) to solve the problem, ask them, "How did you solve that?"

3	2	1
Student uses multiplication to solve. This could also be using another fact to help them to solve. For example, if the student uses 3 x 5 and then adds 3 x 2 or the student uses 7 x 2 + 7. These are all indicative of multiplicative thinking.	Student uses skip counting, repeated addition, or a count-by-one method to solve.	Incorrect
Commentary: This task is intended to assess whether students recognize this as a situation that is best solved using multiplication. In the student's explanation. Listen for an indication that there are 3 sets of 7 or 7 sets of 3 in the box.		

2. Subtract 300 – 102 : 3.NBT.A.2 Number Sense: Place Value – Mental Math

"**Read this.**" Present 300 – 102. Ensure that the student has read the problem correctly and correct them if they have not. **"How much is three hundred minus one hundred two?"**

- If the student is unable or incorrect, present the card 300 – 2. **"Read this card. How much is 300 – 2?**
  - If student does not correctly answer 298, score as a level 0 response.
  - If student does correctly answer 298, ask, **"Could this help you to answer 300-102?"**

3	2	1	0
Student solves on first attempt. (198)	Incorrect at first, but self-corrects when presented with the additional prompt. (300–2) OR Student replicates a traditional algorithm to solve.	Incorrect on both attempts.	Student does not correctly solve 300-2.
Commentary: This problem seeks to assess the student's understanding of the hundreds and ones involved. Listen for student's explanations. If a student replicates a traditional algorithm to solve the problem, ask them why that strategy works and/or ask them if they have another way to solve the problem. Because a traditional algorithm is a much more cumbersome way to solve this problem, even if the student solves the problem correctly and can explain it, score as a level 2 response. The reason being that the student, rather than thinking about the numbers and choosing a method, the student is applying a rote procedure without first making sense.			

Grade 3: Spring

3. Division Story 24 ÷ 4: 3.OA.A.2

Number Sense: Multiplication and Division - Mental Math & Problem Solving - Division

Show the student the picture of 24 crayons. **"I have 24 crayons that I want to put into 4 boxes. How many crayons should I put into each box?"** If student is struggling to solve, or if they are incorrect or unsuccessful after a brief wait time (about 30 – 40 seconds), present them with a multiplication table. Ask, **"Is this something that would help?"**

3	2	1
Student solves on first attempt (6 crayons) applying multiplication or division to solve, without the use of a multiplication table.	Student solves using the multiplication table, skip counts, or uses another counting method to solve.	Incorrect on both attempts.
Commentary: Students should recognize that this is a situation that can be solved with division. There is an expectation for fluency with basic multiplication facts that should be evident in a performance level 3 response. The presentation of the multiplication table as a scaffold helps to identify if the student sees this as a multiplicative situation and helps the teacher see if the student understands how to use this ubiquitous tool to solve the problem. If the student seems to be confused that there should be the same number of crayons in each box, clarify that each box needs to have the same number. For example, if they say they will put one in this box, and two in the next and then 10 in the next, etc.		

4. Add 392 + 110 3.NBT.A.2

Number Sense: Place Value: Mental Math

Present the card 392 + 110. **"Read this card."** Ensure that they read the card correctly and correct them if not. "**How much is 392 plus 110?"** After the student responds ask, **"How did you solve it?"**

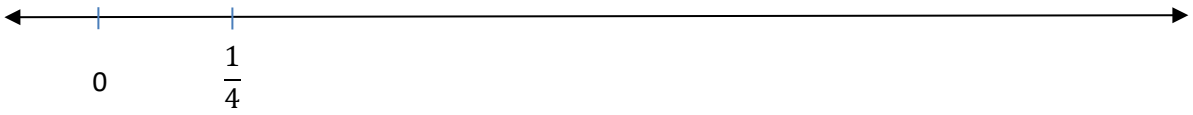
3	2	1
Student solves on first attempt. (502)	Incorrect at first, but self corrects when explaining solution. OR Student is only able to apply a traditional algorithm to solve the problem and is unable to clearly explain that a new hundred has been formed.	Incorrect on both attempts.
Commentary: Students should apply place value understanding to fluently add and subtract within 1,000. If a student applies a traditional algorithm to solve this problem, the concern is that the thinking behind it is all digit-based, and that the conceptual understanding of the hundreds, tens, and ones involved is not fully developed. If a student does apply a traditional algorithm, ask the student if they have another way to solve the problem, or to explain how the strategy works. If they are able to demonstrate another method (e.g. adding the hundred, then the ten) score as a level 3 response. If student is able to explain that by adding another ten to 90 that a new hundred is formed, score as a level 3 response. If student only uses procedural language to explain algorithm (e.g. "I carry the one," or "I put the one here.") score as a level 2 response.		

Grade 3: Spring

5. Fraction on Number Line - – 3.NF.A.1

Number Sense: Fractional Thinking – Number Lines

"Here is a number line here with 2 numbers. Read these numbers to me." It the student is unable to read the fraction $\frac{1}{4}$, take note of this important fact and tell them how to read the number. **"Zero is here, and one fourth, or one quarter, is here. Where does the number 1 go on this line?"** If the student simply guesses something approximately reasonable, ask **"How can you be sure it goes there?"** If the student answers something that is clearly unreasonable, put ½ onto the line where it should go, and ask, **"One half should go about here. Does that make you want to change your answer?"**



3	2	1
Student demonstrates an understanding that they should repeat the interval $\frac{1}{4}$ 3 more times to get to 1. Students will often measure this distance with their fingers and iterate it across the line.	After showing the student where $\frac{1}{2}$ should go, student demonstrates understanding, and places the number 1 approximately in the correct spot.	Student does not show that they need to repeat the fractional amounts to find where 1 goes.
Commentary: Students should understand that the denominator in a fraction represents the number of equal parts of a whole and specifically know how to apply that understanding to a number line diagram. Students who understand $\frac{1}{4}$ as being a unit that needs to be repeated 4 times to create the whole have developed an understanding of fractions that is critical for their continued development in 4th and 5th grades. Students who struggle with this task may still be developing a basic understanding of fractions. However, students who do understand fractions when using area models or fraction strips may still struggle with this number line task. All students should be provided with targeted instruction on using number lines and additional practice, with an emphasis on iterating unit fractions to locate any fraction or whole number.		

Grade 3: Spring

Universal Screener for Number Sense

Standards Alignment and Scoring Guides for Written Tasks, *print 1 copy/test administrator*

W1. Two-Step Word Problem (x & +): 3.OA.D.8 Number Sense: Problem Solving: Two Step

Matt laid his card collection into rows. He made 6 rows with 8 cards in each row. He had 5 cards left over. How many cards does Matt have in his collection?

Show your thinking in words, pictures, or numbers.

3	2	1
Student solves the problem accurately (53 cards) and makes an equation or a series of equations (or expressions) that can be used to solve the problem. Examples might include 6 x 8 + 5= 53 or 6 x 8 + 5=c	Student solves the problem accurately, but the equation(s) are incomplete or incorrect. OR Student makes a correct equation(s) but makes a computation error.	The equation and solution are incorrect.
Commentary: Word problems are indicators of overall ability to decipher a mathematical situation, use their number sense, and apply a strategy to solve the problem. They are also typically some of the most difficult areas of mathematics for students to master. Students who struggle with story problems often have difficulty understanding, the situation, focusing on its most important aspects, and applying what they know to arrive at a solution. This problem suggests a visual model for solving the problem and is written to identify students who might be in need of additional supports in applying the mathematics of third grade to real life situations. Note: Some students will create strings of expressions that look like equations, but which are inaccurate. For example, 6 x 8 = 48 + 5 = 53. This is incorrect, because all of the elements of this equation are not equal. 6 x 8 is not equal to 48 + 5. The teacher should take note and respond with instruction. Most standardized assessments should and do score this as incorrect. For this assessment, as an assessment of number sense rather than an assessment of correct mathematical syntax score this response at level 2, and please take note of this very important detail and provide instruction to help the student learn the correct way to represent this computation in equation form.		

W2. Two Step Word Problem (÷ & +): 3.OA.D.8 Number Sense: Problem Solving: Two Step

84 students are going on a field trip. They will be riding on 2 school buses. The teachers will put the students into 2 equal groups for the buses. 4 adults will also ride on each bus. How many people (kids and adults) will ride on each bus?

Show your thinking in words, pictures, or numbers.

3	2	1
Student solves the problem accurately (46 people) and makes an equation or expression or a series of equations or expressions that can be used to solve the problem.	Student solves the problem accurately, but the equation(s) is incomplete or inaccurate. OR Student makes a correct equation(s) but makes a computation error.	The equation and solution are incorrect.

Grade 3: Spring

Commentary W2: Encourage students to draw pictures to help illustrate their reasoning. It helps to reveal their thinking, and helps the student to practice communicating and justifying their solutions. Some students will write a series of equations or expressions to solve these problems. If there is evidence of reasonable equations in the solution, then count that as evidence. Encourage the students to put an equation, or series of equations (or expressions) on the line at the bottom. The intention here is to see how the student understands the problem as a series of operations.
Note: As with the previous problem, some students will create strings of expressions that look like equations, but which are incorrect. For example, 84÷2 = 42 + 4 = 46. This is wrong because all of the elements of this equation are not equal. 84÷2 is not equal to 42 + 4. The teacher should take note and provide targeted feedback for the student. Most standardized assessments should and do score this as incorrect. For this assessment, as an assessment of number sense rather than an assessment of correct mathematical syntax, score this response at level 2. But please take note of this very important detail and provide instruction to help all students learn the correct way to represent this computation in equation form.

W3. Add and Subtract: 3.NBT.A.2 Number Sense: Place Value – Solve Written Problems

a. 66 + 28 = ___
b. 384 + 47= __
c. 72 – 34= ___
d. 603 – 105= __

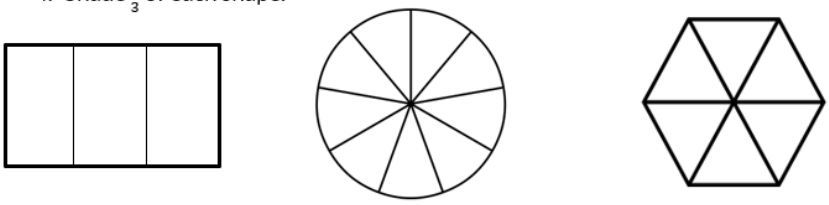
3	2	1
The student solves all of the problems accurately.	The student solves 2 or three of the problems accurately	The student solves 1 or none of the problems accurately.
Commentary: The ability to apply written strategies to add and subtract within one thousand is an important foundational skill for the continued development of number sense. As students grow in their competence and confidence with basic computation this supports their overall growth in understanding necessary to apply the computation in contexts. Ample space is provided with each of the problems. If time allows, and when it would be helpful, teachers are strongly encouraged to ask students to show a second strategy they could use to check their answers.		

Grade 3: Spring

W4. Two Thirds: 3.NF.A.1, 3.NF.A.3a

Number Sense: Fractional Thinking: Represent with Region Models

4. Shade $\frac{2}{3}$ of each shape.



3	2	1
The student shades $\frac{2}{3}$ of each of the shapes	The student shades $\frac{2}{3}$ of 2 of the shapes.	The student shades $\frac{2}{3}$ of only one or none of the shapes.
Commentary: Fractions as parts of geometric shapes flows directly from the partitioning of geometric shapes from 2nd grade. In this case we are seeking to understand if the student has begun to be able to see a fraction of the whole no matter how many pieces that whole has been sliced into. This is foundational for understanding equivalent fractions.		

W5. Fourths on Number Line: 3.NF.A.2.B

Number Sense: Fractional Thinking: Represent with Number Lines

5. Mark and label points on the number line for $\frac{1}{4}$, $\frac{4}{4}$, and $\frac{5}{4}$. Be as exact as possible.

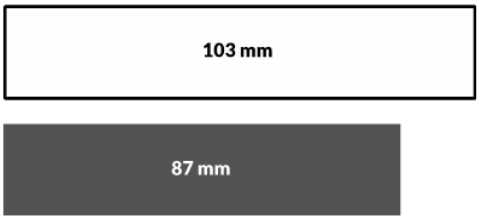
3	2	1
The student places $\frac{1}{4}$ left of center between 0 and 1, $\frac{4}{4}$ at 1, and $\frac{5}{4}$ left of center between 1 and 2.	The student accurately places 2 of the points	The student accurately places only one or none of the points.
Commentary: This challenging problem helps to reveal whether the student confuses whole numbers and fractions. The extension of the number line allows students who are thinking that $\frac{5}{4}$ is some sort of "five-four" will mark that fraction on that side of the number line. When shorter number lines are given (e.g., a 0-2 number line) students who have this confusion will suggest that $\frac{5}{4}$ is somewhere to the right of 2. This number line gives them the opportunity to fully reveal that confusion.		

Grade 3: Spring

W6. Measurement Comparison: 3.OA.D.8 Number Sense: Problem Solving - Comparisons

6. Look at the two bars below. The white bar is 103 millimeters long. The grey bar is 87 millimeters long.

   How many millimeters longer is the white bar than the grey bar?



3	2	1
Student correctly answers 16.	Student has attempted to find the difference, but has made a minor calculation error. OR Student answers correctly after having been provided with additional prompting from the teacher (see below).	Student has answer does not show evidence of a viable strategy.

Commentary: The idea of comparisons continues to vex many students long after the standards have indicated that they should have learned this idea. It remains difficult for many students perhaps because the unknown involved is the blank space "in between" the ends of the bars, making it difficult to perceive visually. The wording of these types of problems is also complex, further confusing students.

Additional Prompting: if the teacher is noticing an issue with the student engaging in the problem the teacher may provide additional prompting as follows.

Teacher: "**Which bar is longer"**

Student: "The orange bar."

Teacher: **"That's right. How much longer?"**

This additional prompting serves to simplify the language enough that students who understand the idea of difference, but who are still struggling with the language of the presentation can solve the problem.

Grade 3: Spring

Universal Screener for Number Sense

Quick Script, *print 1 copy/test administrator*

1. "Here is a box for cans. The box holds 7 rows with 3 cans in each row. Some cans have already been put into the box. How many cans will there be when the whole box has been filled?" If you are unsure whether the student applied multiplication (either 7 x 3 or 3 x 7) to solve the problem, ask them, "How did you solve that?"

2. "**Read this."** Present 300 – 102. Ensure that the student has read the problem correctly and correct them if they have not. **"How much is three hundred minus one hundred two?"**

- If the student is unable or incorrect, present the card 300 – 2. **"Could this help you?"**

3. Show the student the picture of 24 crayons. **"I have 24 crayons that I want to put into 4 boxes. How many crayons should I put into each box?"**

- If student is struggling to solve, or if they are incorrect or unsuccessful after a brief wait time (about 30 – 40 seconds), present them with a multiplication table. Ask, **"Is this something that would help?"**

4. Present the card 392 + 110. **"Read this card."** Ensure that they read the card correctly and correct them if not. "**How much is 392 plus 110?"** After the student responds ask, **"How did you solve it?"** (Allow the student to correct their answer while explaining.)

5. "Here is a number line here with 2 numbers. Read these numbers to me." It the student is unable to read the fraction $\frac{1}{4}$, take note of this important fact and tell them how to read the number. **"Zero is here, and one fourth, or one quarter, is here. Where does the number 1 go on this line?"** If the student simply guesses something approximately reasonable, ask **"How can you be sure it goes there?"** If the student answers something that is clearly unreasonable, put ½ onto the line where it should go, and ask, **"One half should go about here. Does that make you want to change your answer?"**

Grade 3: Spring

Universal Screener for Number Sense

Quick Script Spanish, *print 1 copy/test administrator*

1. "Aquí hay una caja de latas. La caja tiene 7 filas con 3 latas en cada fila. Algunas latas ya han sido puestas en la caja. ¿Cuántas latas habrá cuando toda la caja este llena?" Si esta inseguro que el estudiante aplico multiplicación (como 7 x 3 o 3 x 7) para resolver el problema, pregúntenle, ¿"Como resolviste eso?"

2. "**Lee esto."** Presenta 300 – 102. Asegúrese que el estudiante leyó el problema correctamente y corríjanlo si no lo hizo. **"¿Cuánto es 300 menos ciento dos?"**

- Si el estudiante no puede o está equivocado, presente la tarjeta 300 – 2. **"¿Te podría ayudar esto?"**

3. Enséñele al estudiante la figura de 24 crayolas. **"Yo tengo 24 crayolas que quiero poner adentro de 4 cajas. ¿Cuántas crayolas debo pone en cada caja?"**

- Si el estudiante está luchando para resolverlo, o si están equivocado o sin éxito después de un corto tiempo (como 30 – 40 segundos), preséntenles una tabla de multiplicación. Pregunte, **"¿Es esto algo que te ayudaría?"**

4. Presente la tarjeta 392 + 110. **"Lea esta tarjeta."** Asegúrese que el estudiante lea la tarjeta correctamente y corríjanlo si no lo hizo. **"¿Cuánto es 392 más 110?"** ¿Después de que el estudiante responda, **"¿Como lo resolviste?"** (Permítale al estudiante corregir su respuesta mientras explicándolo.)

5. "Aquí hay una línea numérica con 2 números. Léeme estos números a mí." Si el estudiante no puede leer esta fracción $\frac{1}{4}$, tome nota de este importante hecho y dígale como leer el numero. **"Zero es aquí, y un cuarto, o un cuarto, es aquí. ¿A dónde va el número 1 en esta línea?"** Si el estudiante simplemente adivina algo aproximadamente razonable, pregunte **"¿Como puedes estar Seguro de que va ahí?"** Si el estudiante responde algo que claramente no es razonable, pon ½ en la línea donde debe ir, and pregunta, **"Una mitad debe ir como aquí. ¿Esto hace que quieras cambiar tu respuesta?"**

Grade 3: Spring

Universal Screener for Number Sense

Interview Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language: □ English □ Spanish □ Other: _____

Multiplication: 3.OA.A.1	*score*
1. Box with 7 rows of 3 cans. ☐ *solves with multiplication: 3 pts.* ☐ *solves with repeated addition: 2 pts.* ☐ *incorrect: 1 pt.*	
Subtraction – 3.NBT.A.2	*score*
2. 300 - 102 □ *solves on first attempt: 3 pts.* □ *self-corrects or uses traditional algorithm: 2pts.* □ *incorrect: 1 pt.*	
Division – 3.OA.A.2	*score*
3. 24 crayons into 4 boxes. ☐ *uses multiplication/division: 3 pts.* ☐ *solves with support: 2 pts.* ☐ *unsuccessful: 1 pt.*	
Addition/Place Value: 3.NBT.A.2	*score*
4. 392 + 110 ☐ *solves 1st attempt: 3 pts.* ☐ *solves w/ self-correct or trad. algorithm: 2 pts.* ☐ *unsuccessful: 1 pt.*	
Fractions – 3.NF.A.1	*score*
5. Number line: Where does the 1 go? ☐ *repeats ¼ intervals: 3 pts.* ☐ *solves with ½ benchmark: 2 pts.* ☐ *unsuccessful: 1 pt.*	

Grade 3: Spring

Universal Screener for Number Sense

Written Component, *print 1 copy/student*

Name _____ Date _____

1. Matt laid his card collection into rows. He made 6 rows with 8 cards in each row. He had 5 cards left over. How many cards does Matt have in his collection?
   Show your thinking in words, pictures, or numbers.

_____ cards

Write an equation that can be used to solve the problem:

_____

2. 84 students are going on a field trip. They will be riding on 2 school buses. The teachers will put the students into 2 equal groups for the buses. 4 adults will also ride on each bus. How many people (kids and adults) will ride on each bus?
   Show your thinking in words, pictures, or numbers.

_____ people

Write an equation that can be used to solve this problem:

_____

Grade 3: Spring

3. Solve these problems. Show your thinking. Check your answers.
   a. 66 + 28 = _____

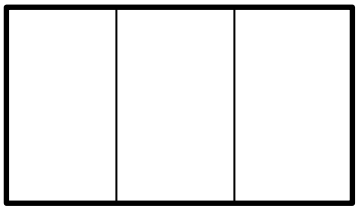
   b. 384 + 47= _____

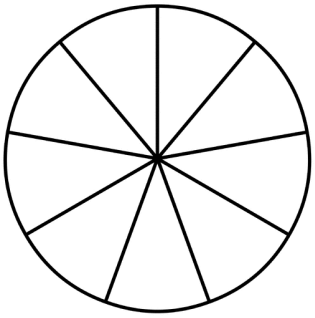
   c. 72 – 34= _____

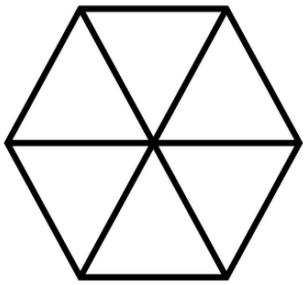
   d. 603 – 105= _____

Grade 3: Spring

4. Shade $\frac{2}{3}$ of each shape.



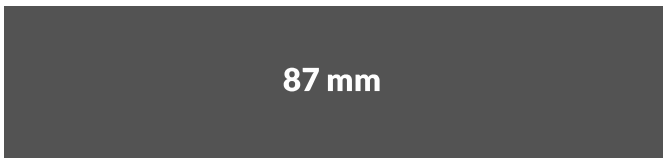




5. Mark and label points on the number line for $\frac{1}{4}$, $\frac{4}{4}$, and $\frac{5}{4}$. Be as exact as possible.

6. Look at the two bars below. The white bar is 103 millimeters long. The grey bar is 87 millimeters long.

   How many millimeters longer is the white bar than the grey bar?



_____ millimeters

Grade 3: Spring

Universal Screener for Number Sense

Written Component - Spanis, *print 1 copy/student*

Nombre_____ Fecha _____

1. Matt coloco su colección de tarjetas en filas. El hizo 6 filas con 8 tarjetas en cada fila. A él le sobro 5 tarjetas. ¿Cuántas tarjetas tiene Matt en su colección? Demuestra tu manera de pensar con palabras, figuras o números.

_____ tarjetas

Escribe una ecuación que puede ser usada para resolver este problema:

_____

2. 84 estudiantes van de paseo al campo. Ellos van a ir en 2 autobuses de la escuela. Los maestros colocaran a los estudiantes en 2 grupos iguales para los autobuses. 4 adultos irán en cada autobús. ¿Cuántas personas (niños y adultos) irán en cada autobús?
   Demuestra tu manera de pensar con palabras, figuras o números.

_____ personas

Escribe una ecuación que puede ser usada para resolver este problema:

_____

Grade 3: Spring

3. Resuelve estos problemas. Demuestra tu manera de pensar. Chequea tus respuestas.
   e. 66 + 28 = _____

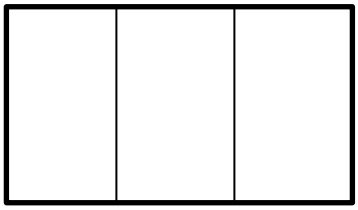
   f. 384 + 47= _____

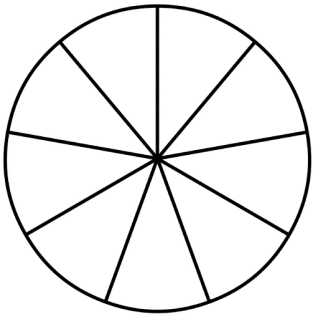
   g. 72 – 34= _____

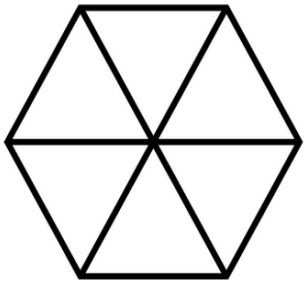
   h. 603 – 105= _____

Grade 3: Spring

4. Llena $\frac{2}{3}$ de cada forma.



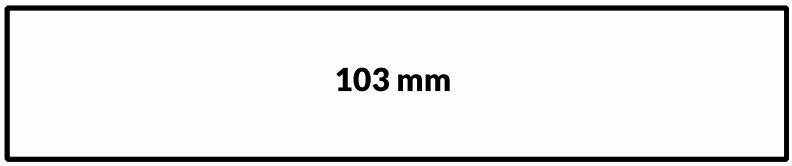


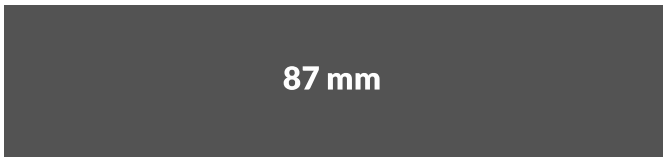


5. Marca y nombra los puntos en la linea numerica para $\frac{1}{4}$, $\frac{4}{4}$, y $\frac{5}{4}$. Sea lo más exacto posible.

6. Mira las dos barras debajo. La barra blanca es 103 milímetros de largo. La barra gris es 87 milímetros de largo.

   ¿Cuántos milímetros más larga es la barra blanca que la barra gris?



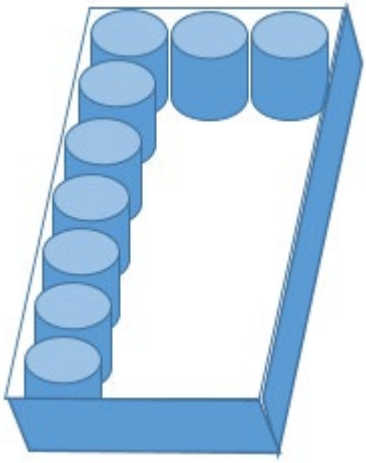


_____ millimeters

Grade 3: Spring

Universal Screener for Number Sense

Interview Cards: One set per teacher



300 - 102

300 - 2

392 + 110

24 crayons

24 lápices de color

Grade 3: Spring

Multiplication Table for interview question #3. Present only if necessary.

x	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Grade 3: Spring

Consumable number lines. Cut one strip for each student.

Grade 4: Spring

Universal Screener for Number Sense

Instructions

Interview: Approximately 5 – 8 minutes per student

- Interviews should be conducted one-on-one with students. This can be done by sitting with a single student and working through all of the questions, or can be done one or two questions at a time.
- **Do not provide paper and pencil.** Only provide materials as described.
- **Who?** Whenever possible, the teacher who works most directly with the child should be the one to administer the interview portion of the screener and score the written portion.
- **Questioning.** It is usually best to attempt to limit questioning and move at a steady pace through the tasks. This improves the efficiency, but also helps to ensure the consistency of administration, and therefore the reliability of the results.
- **Be flexible.** You might find that you can work most efficiently by administering one task at a time, moving from student to student rather than having them come to a station. Users of Forefront will find that the interview tool can be switched to focus on tasks. Here is a help article for using the interview tool.
- **Collaborate.** Sometimes groups of students can be reorganized in creative ways to provide one teacher with the ability to sit with individual students.
- **Watch carefully and take notes**. The nuances in behaviors that reveal a child's number sense development are sometimes subtle.
- **Video tape.** Although it is not necessary for the administration of the assessment, recording an assessment or two to discuss with colleagues can be an excellent way to learn together and build consistency in administration and scoring.

Written Portion: Allow for a 60 min. class period. Many will finish in fewer than 30 minutes.

- The written portion of this assessment is best given in small groups or centers. Care should be taken to ensure that students are not given opportunities to collaborate on the assessment.
- Pass the assessment out to all students and begin with the number writing task.
- Read numbers aloud, **"fourteen thousand eleven"** and **"three hundred six thousand, twenty-four"** aloud to all of the students.
- Unlike the interview section, it is less important who manages the administration of the written portion. That is, it is appropriate that the written portion be administered by a paraeducator or volunteer, however it is still best for the teacher to score the written portion of the assessment.
- Ideally, students who are able to read the assessment independently should be given the opportunity to do so and those students who need support with the reading will be given that support either individually or in small groups.

Grade 4: Spring

Universal Screener for Number Sense

Detailed Script and Rubrics, *print 1 copy/test administrator*

1. **Use 37 x 4 to solve 36 x 4: 4.OA.A.1, 4.NBT.B.5**

Number Sense : Multiplication and Division – Mental Math

"Read this card." Present the card 37 x 4 = 148 and ensure that the student has read it correctly. Leave 37 x 4 = 148 in front of the student and place the card 36 x 4 with it. "**37 times 4 equals 148. How much is 36 times 4?"** Observe the student closely to see how they solve the problem. If the student begins to solve 36 x 4 without using 37 x 4, interrupt them and say, **"Can you use this (point to 37 x 4 = 148) to help you solve 36 x 4?"** If necessary, ask the student how they solved the problem.

3	2	1
Student subtracts 4 to solve.	Student solves the problem separately.	Incorrect
Commentary: Students in fourth grade should demonstrate a conceptual understanding of multiplication that extends beyond procedural understanding and allows them to use properties of operations and place value understanding to solve whole number multiplication problems. This conceptual understanding of multiplication that is revealed in using the relationships between problems.		

2. **Subtraction: 20,000 - 10: 4.NBT.B** Number Sense: Place Value – Mental Math

Present the card 20,000 – 10. **"Read this card."** Check to ensure that the student has read the problem correctly. If the student is unable to read the number 20,000 it should be noted. Correct the student if they have not read the problem correctly. **"How much is twenty thousand minus ten."**

- If the student is unable to solve, present the card 2,000 – 10. **"Read this card."** Ensure that the student has read the problem correctly, and correct them if necessary. **"How much is two-thousand minus ten?"**
- If the student is unable to solve 2,000 -10 present the card that says 204 – 20. Say, **"Let's do one more. Read this card."** Ensure that the student has read the problem correctly, and correct them if necessary. **"How much is two hundred four minus twenty?"**

3	2	1	0
Student correctly solves 20,000 – 10 = 19,990. Allow student to make self-corrections as they solve this problem	Student is unable to solve 20,000, but solves 2,000 – 10 = 1,990 OR Student solves either problem using a traditional algorithm.	Solves 204 – 20, but neither of the first two problems.	Student does not solve any of the problems correctly.
Commentary: This question reveals a generalized understanding of place value and the apply that understanding as it relates to the addition and subtraction of larger numbers. The problems of this task can be solved mentally when there is a strong understanding of the place value system. Some students may attempt to use a traditional algorithm. If that happens, it is important to question them to ensure that there is an understanding of why that method would work. Students who perform at a level 0 or 1 on this task will need significant supports in order to develop their sense of place value for the work of 5th grade to be meaningful.			

Grade 4: Spring

3. Division/Multiplication & Place Value: 4.NBT.A.1

Number Sense: Multiplication and Division: Mental Math & Place Value: Decimals

"Here is an array of 310 squares. There are 10 squares in each of these columns. How many squares are in each row?" If the student begins to count the squares, cut them off, and ask, **"How can you figure this out this without counting the squares?"** If the student solves inaccurately ask them to explain their thinking to see if they correct their answer.

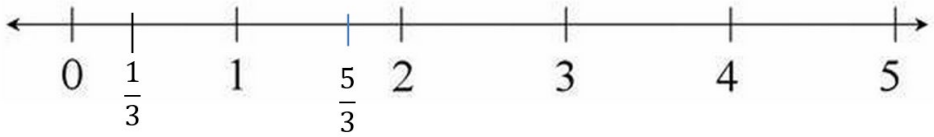
3	2	1
Student recognizes that there are 31 tens in 310, and correctly answers 31.	Student self-corrects when explaining their thinking.	Incorrect
Commentary: When students have a good understanding of tens as they relate to multiplication and division this problem will be quickly and easily solved. Other students will struggle with this problem and will attempt to apply some sort of procedure for solving the problem. While having procedures for dividing multi-digit numbers is an important skill, this problem is designed to elicit student sense making and a generalized understanding of place value as it relates to division.		

4. Thirds on a Number Line: 4.NF.A

Number Sense: Fractional Thinking – Number Lines

Place the fraction $\frac{5}{3}$ in front of the student. **"Read this number."** Check to see that the student reads five thirds correctly. If the student says 5 over 3 ask if they have another way to read the number. If the student does not know to read the number as "five thirds" take note and say, **"When we read this number we usually say, five thirds."**. Continue, **"Here is a number line with zero, one and two already placed. Where does the number five thirds go on this number line?"**

- If the student places the fraction in the incorrect place, ask them to explain their thinking and allow the student to change the placement if they wish.
- If the placement is still incorrect, place the fraction $\frac{1}{3}$ in front of the student. "**Read this number."** Again, check to see that the student correctly reads one-third and correct them if not. "**Where does one-third go on this number line?"**



3	2	1
Student correctly places $\frac{5}{3}$ on the number line on first attempt or self-corrects when explaining. (fraction should be placed left of center between 1 and 2)	Student correctly places $\frac{1}{3}$ on number line, but not $\frac{5}{3}$. ($\frac{1}{3}$ should be left of center between 0 and 1)	Student is unable to place either fraction correctly.
Commentary: This problem is designed to elicit student understanding of fractions as they are represented using a number line (or line diagram). For students who perform at a level 1 on this task, teachers are encouraged to probe deeper (perhaps at a later time, or during the assessment as time allows.) Follow up questions could include where to place the following numbers: $\frac{1}{6}, \frac{1}{2}, \frac{6}{6}, \frac{12}{6}$.		

Grade 4: Spring

5. **698 + N = 1000 – CCSS: 4.NBT.B; CAS: 4.1.3.a**

Number Sense:Place Value – Mental Math

Present the card 698 + _____ = 1,000. Say, **"Read these numbers."** Check to see that the student accurately reads the numbers. Take note and correct them if they do not. **"What number goes here?"** (pointing to the blank) **"698 plus what number equals 1,000?"** If the student's solution strategy is not obvious, ask how they solved the problem and allow them to self-correct while explaining their reasoning. present the card 700 + _____ = 1,000. **"What number goes in the blank here?"** If they don't say 300, tell them. "**700 + 300 = 1000; three hundred goes here."** (see scoring for a 0), **"How can you use that to help you think about this problem?"** Indicating the initial problem.

3	2	1	0
Student solves the problem correctly (302) without the additional prompt.	Student solves 698 + ___ = 1,000, only after you show 700+ ____ = 1,000	Student solves 700 + ___ = 1000 and Student does not solve 698 + ___ = 1,000 even after being shown 700 + ___ = 1000	Student is unable to solve 698 + ___ = 1000 and does not solve 700 + ___ = 1000
Commentary: Students who are developing a strong sense of number will be able to quickly and easily solve this problem using flexible strategies. This problem is a direct extension of knowing numbers that add to ten in first grade. Students who score either 0 or 1 on this problem will benefit greatly from targeted instruction and practice before fifth grade when these same ideas will be extended further to include decimal numbers.			

Grade 4: Spring

Universal Screener for Number Sense

Quick Script, *print 1 copy/test administrator*

Multiplication

1. **"Read this card."** Show 37 x 4 = 148 card and ensure that the student has read it correctly. Leave 37 x 4 = 148 in front of the student and place the card 36 x 4 with it.
"**37 times 4 equals 148. How much is 36 times 4?"** If the student begins to solve 36 x 4 without using 37 x 4, interrupt them and say, **"Can you use this (point to 37 x 4 = 148) to help you solve 36 x 4?"** If necessary, ask the student how they solved the problem.

Place Value/Subtraction

2. Present 20,000 – 10 card. **"Read this card."** Check to ensure that the student has read the problem correctly. If the student is unable to read the number 20,000 it should be noted. Correct the student if they have not read the problem correctly. **"How much is twenty thousand minus ten."**

- If the student is unable to solve, present the card 2,000 – 10. **"Read this card."** Ensure that the student has read the problem correctly, and correct them if necessary. **"How much is two-thousand minus ten?"**
- If the student is unable to solve 2,000 -10 present the card that says 204 – 20. Say, **"Let's do one more. Read this card."** Ensure that the student has read the problem correctly, and correct them if necessary. **"How much is two hundred four minus twenty?"**

Division/Multiplication and Place Value

3. "Here is an array of 310 squares. There are 10 squares in each of these rows. How many squares are in each column?" or **"How many rows are there?"** If the student begins to count, cut them off, and ask, **"How can you figure this out this without counting the squares?"** If the student solves inaccurately ask them to explain their thinking to see if they correct their answer.

Fractions/Equivalence

4. Place the fraction $\frac{5}{3}$ in front of the student. **"Read this number."** Check to see that the student reads five thirds correctly. If the student says 5 over 3 ask if they have another way to read the number. If the student does not know to read the number as "five thirds" take note and show the student. Say, **"Here is a number line with zero, one, two, three, four, and five already placed. Where does the number five thirds go on this number line?"**

- If the student places the fraction in the incorrect place, ask them to explain their thinking and allow the student to change the placement if they wish.
- If the placement is still incorrect, place the fraction $\frac{1}{3}$ in front of the student. "**Read this number."** Again check to see that the student correctly reads one-third and correct them if not. "**Where does one-third go on this number line?"**

Addition/Place Value

5. Present the card 698 + _____ = 1,000. Say, **"Read these numbers."** Check to see that the student accurately reads the numbers. Take note and correct them if they do not. **"What number goes here?"** (pointing to the blank) **"698 plus what number equals 1,000?"** If the student's solution strategy is not obvious, ask how they solved the problem and allow them to self-correct while explaining their reasoning.

- If student is incorrect, present the card 700 + _____ = 1,000. **"What number goes in the blank here?"** If they don't say 300, tell them. "**700 + 300 = 1000; three hundred goes here."** (see scoring for a 0), **"How can you use that to help you think about this problem?"** Indicating the initial problem.

Grade 4: Spring

Universal Screener for Number Sense

Spanish Quick Script, *print 1 copy/test administrator*

Multiplicación

1. **"Lea esta tarjeta".** Demuestre la tarjeta 37x4 = 148 y asegúrese que el estudiante la leyó correctamente. Deje 37 x 4 = 148 adelante del estudiante y coloque la tarjeta de 36 x 4 con él. **"37 por 4 es igual a 148. ¿Cuánto es 36 por 4?"** Si el estudiante comienza a resolver 36 x 4 sin usar 37 x 4, interrúmpalo y diga: **"¿Puedes usar este (punto 37 x 4 = 148) para ayudarte a resolver 36 x 4?"** Si es necesario, pregúntele al estudiante cómo resolvió el problema.

Valor posicional/Sustracción

2. Presente la tarjeta 20,000 – 10. **"Lea esta tarjeta."** Chequee para asegurarse que el estudiante leyó el problema correctamente. Si estudiante no puede leer el numero 20,000 debe anotarlo. Corrija al estudiante si no leyó el problema correctamente. **¿Cuánto es Veinte mil menos diez?"**

- Si el estudiante no puede resolverlo, presente esta tarjeta 2,000 – 10. **"Lea esta tarjeta."** Asegúrese que el estudiante leyó el problema correctamente y corríjalo si es necesario. **"¿Cuánto es do mil menos 10?"**
- Si el estudiante no puede resolver 2,000 -10 presente la tarjeta que dice 204 – 20. Diga, **"Hagamos una más. Lee esta tarjeta."** Asegúrese que el estudiante leyó el problema correctamente y corríjalo si es necesario. **"¿Cuánto es dos cientos cuatro menos veinte?"**

División/Multiplicación y Valor Posicional

3. "Aquí hay una formación de 310 cuadrados. Hay 10 cuadrados en cada una de esas filas. ¿Cuántos cuadrados hay en cada columna?" o "¿Cuántas filas hay?" Si el estudiante comienza a contar los cuadrados, interrúmpalo, y pregúntele, ¿**"Como puedes resolver esto sin contar los cuadrados?"** Si el estudiante lo resuelve inexactamente pídale que explique su manera de pensar para ver si el corrige su propia respuesta.

Fracciones/Equivalencia

4. Coloque la fracción $\frac{5}{3}$ adelante del estudiante. **"Lee este número."** Chequee para asegurarse que el estudiante lea cinco tercios correctamente. Si el estudiante dice 5 sobre 3 pregúntele si tiene otra manera de leer ese número. Si el estudiante no sabe leerlo como "cinco tercios" tome nota y enséñele al estudiante. Diga, **"Aquí esta una línea numérica con los numeros cero, uno, dos, tres, cuatro, y cinco ya colocados. ¿Dónde corresponde el número cinco tercios en esta línea numérica?"**

- Si el estudiante coloca la fracción en el lugar equivocado, pídale que explique su manera de pensar y permítale cambiar el lugar si desea.
- Si la colocación continua incorrecta, coloque la fracción $\frac{1}{3}$ adelante del estudiante. "**Léeme este número."** De nuevo, chequeen que el estudiante pueda leer correctamente un-tercio y corríjalo si no lo hace. **"¿Dónde va un-tercio en la línea numérica?"**

Adición/Valor Posicional

5. Presente la tarjeta 698 + _____ = 1,000. Diga, **"Lee estos números."** Chequee que el estudiante lea los números correctamente. Tome nota y corríjalo si no lo hace. **"Que numero va aquí?"** (apuntando al blanco) **"698 más que numero resultan en 1,000?"** Si la estrategia de solución del estudiante no es ovia, pregúntele como soluciono el problema y permítale que se auto corrija y mientras, explicando el racionamiento.

- Si el estudiante no contesta 302, presente la tarjeta 700 + _____ = 1,000. **"Que numero va en el espacio vacío?"** Y si no dice 300, dígale. "**700 + 300 = 1000;** tres **cientos va aquí."** (vea calificación para 0), **"Como puedes usar esto para ayudarte a pensar acerca de este problema?"** indicando el problema inicial.

Grade 4: Spring

Universal Screener for Number Sense

Standards Alignment and Scoring Guides for Written Tasks, *print 1 copy/test administrator*

W1. Write Large Numbers – CCSS: 4.NBT.A.2 Number Sense: Numeral Writing

Write this number in standard form:

fourteen thousand eleven 14,011

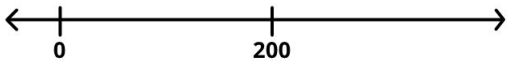
three hundred six thousand twenty-four 306,024

3	2	1
Student writes both numbers correctly:	Student writes one number correctly	Student writes neither number correctly
Commentary: The ability to read and write numerals is a fundamental skill for developing number sense. This task presents two large numbers that can be problematic for students. When students score at a level on this task it is important to follow up with the writing of other numbers to understand the extent of the knowledge of the student and to determine where targeted instruction should start. Most instructional materials will assume that this learning has been completed by the end of 4th grade, and few lessons will be directed toward continuing this learning in 5th grade. For this reason, for students who are still learning this skill, additional targeted instruction is recommended.		

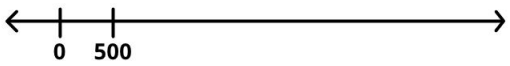
W2. Number Lines - Magnitude Comparisons: 4.NBT.A

Number Sense:Place Value: Magnitude and Comparison & Number Lines

2. Here is a number line. Put the number 109 where it goes on this line.



Here is a number line. Put the number 1,000 where it goes on this line.



3	2	1
Student places 109 close to the halfway point between 0 and 200 and the number 1000 about double the distance that 500 is from zero.	Student places only one of the numbers approximately correctly.	Neither number is placed correctly.
Commentary: This pair of tasks reveals the students' sense of the magnitude of numbers as they are represented on number lines. A critical element of number sense is the idea that the "space" between each number is equivalent, not matter the size of the numbers. On the second task, many students will place 1000 to the far right of the line simply because 1000 is a "big number" without attending to the relative size of 500. Students who are struggling with the number system will get distracted by the 9 in 109 and will place 109 close to 200. This reveals both confusions about the magnitude of numbers, but also confusions about place value.		

Grade 4: Spring

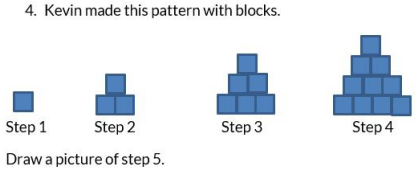
W3. Multi-Step Word problem: - CCSS: 4.OA.A.3

Number Sense:Problem Solving – Two Step

Kris planted a tree that was 9 feet tall. Now the tree has grown, and it is 3 feet more than 4 times as tall as it was when it was planted. How tall is the tree now?

3	2	1
Student has arrived at a correct solution and a correct equation. (39 feet, 9 x 4 + 3 = 39). If the student has broken the equation into two separate, but correct equations, count it as correct. (e.g. 9 x 4 = 36 and 36 + 3 = 39)	Student has either a correct solution or a correct equation, but not both. Or Student has applied a viable strategy (i.e. they attempted to multiply 9 by 4 and add 3), but they did not arrive at the correct answer and their equations has mistakes.	Student has neither the equation(s), nor the solution correct
Commentary: This two-step word problem is written to reveal the ability to make sense of the language "times as tall as" as a multiplicative relationship. The ability of the student to make mathematical sense of this situation as a combination of addition and multiplication is central to this task. If the student creates an erroneous equation like: 9 x 4 = 36 + 3 = 39 this is incorrect and should be scored as a level 2. This is because 9 x 4 ≠ 36 + 3. When teachers notice students making this common mistake it should be addressed directly through instruction.		

W4. Geometric Pattern - CCSS: 4.OA.C.5 Number Sense: Problm Solving - Two Step



How many blocks will he need for step 9?

3	2	1
Student correctly creates step 5, and identifies that step 9 would need 45 blocks.	Student creates step 5 correctly, and identifies but does not correctly solve that he will need 45 blocks for step 9. Or student does get step 9 correct, but does not draw step five correctly.	Student has NEITHER Step 5 nor step 9 correct.
Commentary: The ability to recognize and continue patterns has long been a hallmark of our understanding of number sense. This problem presents a rather straight-forward pattern for students to follow. This ability to recognize and continue patterns lays an important foundation for the algebraic thinking that students will be doing in the middle school years.		

Grade 4: Spring

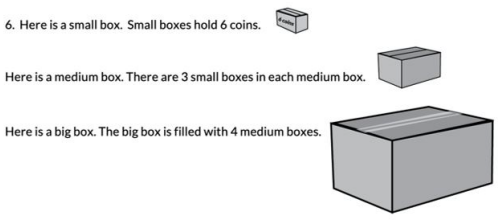
W5. Division With Remainders - CCSS: 4.OA.A.3

Number Sense: Problem Solving: Multiplication and Division

A school is preparing for a large meeting. There will be 87 people at the meeting. The people will be sitting at tables. 8 people can sit at each table. How many tables should be set up so that everyone has a place to sit? Show your work and explain your answer.

3	2	1
Student correctly answers that 11 tables are needed.	Student divides correctly, but gives an answer like 10 r 7, without correctly interpreting that an extra table is necessary for the additional guests. OR Student creates a complete drawing in order to solve the problem and solves the problem without dividing. OR Student attempts to apply division to solve the problem, but makes an error in their division. In this situation it is necessary that the student provides a reasonable solution for the remainder (i.e. an extra table for any remainder.)	Student does not provide a level 2 response.
Commentary: The ability to make sense of division situations is critical. Some students will recognize that this is a division problem, but will then present an answer like 10 r 7 which makes no sense for the context provided. Number sense is making sense of numbers and applying them in situations. This tasks addresses students ability to not only see that this is a situation that is best solved through division, but also the ability to understand what makes sense for the remainder in this case.		

W6. Units Coordination (Boxes) 4.OA.A.3 Number Sense:Problem Solving – Two Step



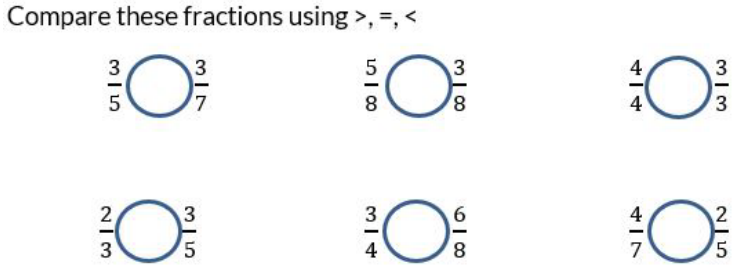
How many coins in the big box?

3	2	1
Student correctly answers 72 coins.	Student applies a viable strategy (either multiplication or repeated addition) but makes a calculation error.	Student does not demonstrate a viable strategy.
Commentary: The ability of students to coordinate units of units is critical at this point. This problem requires the student to coordinate 4 units of 3 units of 6,thus coordinating three separate units. This will be relatively challenging for some students. Students who are unsuccessful with this task might need time working with the coordination of only 2 units (e.g. 6 units of 4), which is basic for multiplicative thinking in general, but which can still be troublesome for students still developing their multiplicative number sense.		

Grade 4: Spring

W7. Compare Fractions : 4.NF.A.2 Number Sense: Fractional Thinking - Comparisons

Compare these fractions using >, =, <



3	2	1	0
Student compares all fractions correctly	Student compares 4 - 5 correctly Or Student applies a rote strategy (e.g. always finding common denominators) in order to compare the fractions.	Students compares 2-3 correctly	Student compares only one or none correctly
Commentary: Students might use a variety of strategies to compare the fractions. As time allows, if the strategy that the student is applying is not obvious, ask the student to clarify their strategies. If the student is finding common denominators for all of these problems, as the student if they have other ways to think about these comparisons. Although that rote methodology will work consistently, it doesn't indicate an understanding of the meaning of the fractions. For example, if a student finds that both 3/3 and 4/4 are equivalent to 12/12 in order to compare those fractions this should be a warning sign.			

Grade 4: Spring

Universal Screener for Number Sense

Interview Note Catcher, *print 1 copy/student*

Name: _____

Date: _____ Teacher: _____

Language: □ English □ Spanish □ Other: _____

Multiplication: 4.OA.A.1, 4.NBT.B.5	*score*
1. Solve 36 x 4 using 37 x 4 = 148. *Notes:* □ *subtracts 4 to solve: 3 pts.* □ *solves problem separately: 2 pts.* □ *unsuccessful: 1 pt.*	
Subtraction/Place Value: 4.NBT.B	*score*
2. 20,000 – 10 (if necessary: 2,000 – 100 or 204 - 20) *Notes:* ☐ *solves: 3 pts.* ☐ *unsuccessful w/20,000–10, solves 2,000-10: 2 pts.* ☐ *solves 204-20 only: 1 pt.* ☐ *:all unsuccessful: 0 pts.*	
Division/Multiplication & Place Value: 4.NBT.A.1	*score*
3. Array of 310 squares. *Notes:* ☐ *solves on first attempt: 3 pts.* ☐ *solves with self-correct: 2 pts.* ☐ *incorrect: 1 pt.*	
Fractions/Equivalence: 4.NF.A	*score*
4. Place fractions on a number line. *Notes:* ☐ *5/3 correct (self-corrects allowed): 3 pts.* ☐ *1/3 but not 5/3: 2 pts.* ☐ *unsuccessful: 1 pt.*	
Addition/Place Value – CCSS: 4.NBT.B; CAS: 4.1.3.a	*score*
5. 698 + ___ = 1,000 (if necessary, 700 + __ = 1,000) *Notes:* ☐ *solves698 + ____ = 1000 w/o prompt 3 pts.* ☐ *solves with700 + ____ = 1,000 prompt: 2 pts.* ☐ *solves 700 + __ = 1,000, not 698: 1 pt.* ☐ *unsuccessful with both: 0 pts.*	

Grade 4: Spring

Universal Screener for Number Sense

Written Component, *print 1 copy/student*

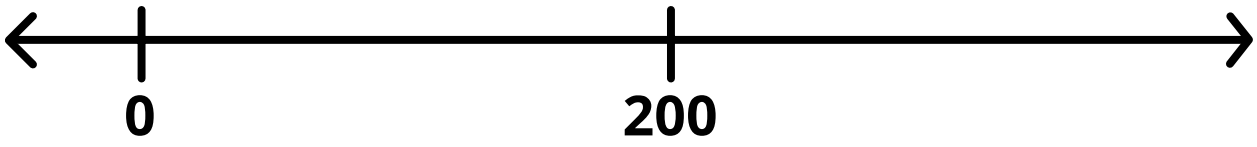
Name _____ Date _____

1. Write this number in standard form:

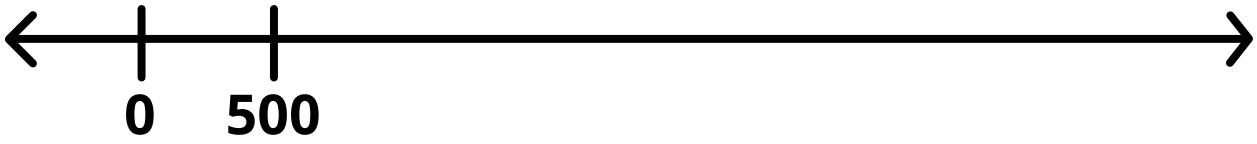
fourteen thousand eleven _____

three hundred six thousand twenty-four _____

2. Here is a number line. Put the number 109 where it goes on this line.



Here is a number line. Put the number 1,000 where it goes on this line.



3. Kris planted a tree that was 9 feet tall. Now the tree has grown, and it is 3 feet more than 4 times as tall as it was when it was planted. How tall is the tree now?

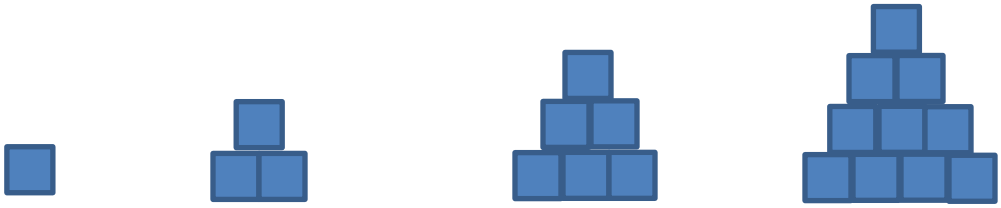
_____ feet

Write an equation that can be used to solve the problem.

_____

Grade 4: Spring

4. Kevin made this pattern with blocks.



Step 1 Step 2 Step 3 Step 4

Draw a picture of step 5.

How many blocks will Kevin need for Step 9? Show how you solve this problem.

_____ blocks

5. A school is preparing for a large meeting. There will be 87 people at the meeting. The people will be sitting at tables. 8 people can sit at each table. How many tables should be set up so that everyone has a place to sit?

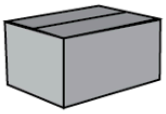
Show your work and explain your answer.

_____ tables.

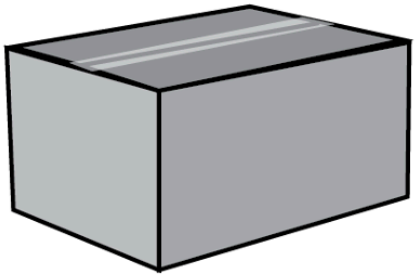
Grade 4: Spring

6. Here is a small box. Small boxes hold 6 coins.

Here is a medium box. There are 3 small boxes in each medium box.



Here is a big box. The big box is filled with 4 medium boxes.



How many coins are in a big box? _____ coins

7. Compare these fractions using >, =, <

$\frac{3}{5} \bigcirc \frac{3}{7}$ $\frac{5}{8} \bigcirc \frac{3}{8}$ $\frac{4}{4} \bigcirc \frac{3}{3}$

$\frac{2}{3} \bigcirc \frac{3}{5}$ $\frac{3}{4} \bigcirc \frac{6}{8}$ $\frac{4}{7} \bigcirc \frac{2}{5}$

Grade 4: Spring

Universal Screener for Number Sense

Spanish Written Component, *print 1 copy/student*

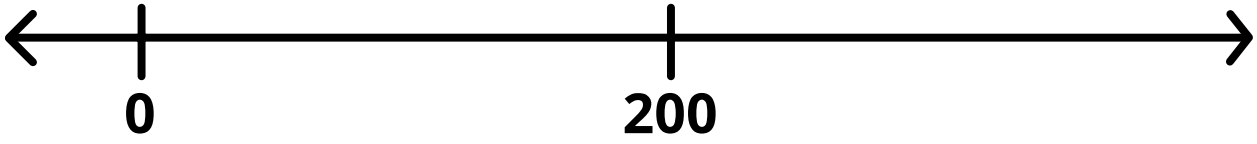
Nombre _____ Fecha _____

1. Escribe este número en una forma estándar:

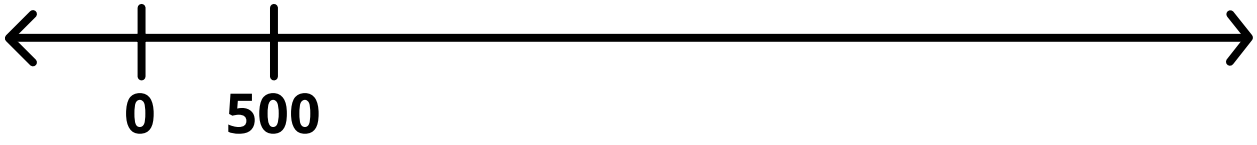
catorce mil once _____

tres cientos seis mil-cuatro _____

2. Aquí está una línea numérica. Pon el numero 109 donde corresponde en esta línea.



Aquí está una línea numérica. Pon el numero 1,000 donde corresponde en esta línea.



3. Kris planto un árbol de 9 pies de altura. Ahora el árbol ha crecido, y es 3 pies más de 4 veces tan alto como era cuando fue plantado. ¿Qué tan alto es el árbol ahora?

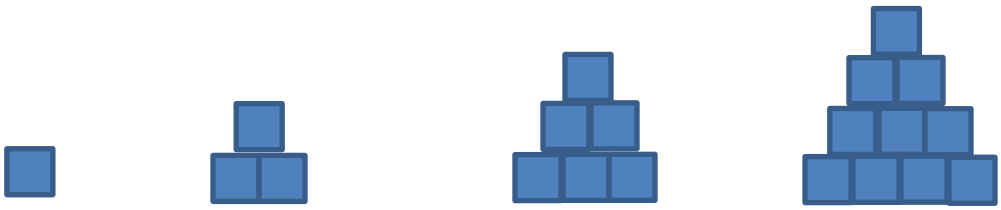
_____ pies

Escribe una ecuación que puede ser usada para resolver el problema.

_____

Grade 4: Spring

4. Kevin hizo este patrón con bloques.



Paso 1 Paso 2 Paso 3 Paso 4

Dibuja una figura del paso 5.

¿Cuántos bloques Kevin necesitara para el paso 9? Demuestra como resolviste este problema.

_____ bloques

5. Una escuela se está preparando para una gran reunión. Van a ver 87 personas en la reunión. La gente se sentará en mesas. 8 personas se pueden sentar en cada mesa. ¿Cuántas mesas deben de ser colocadas para que todos tengan un lugar donde sentarse?

Demuestra tú trabajo y explica tu respuesta.

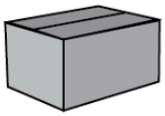
_____ mesas.

Grade 4: Spring

6. Aquí hay una caja pequeña.

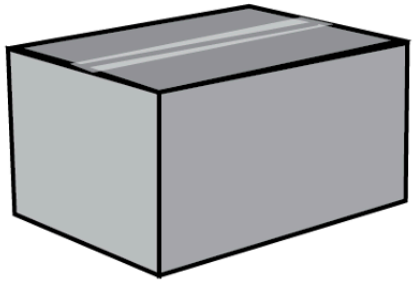
Cajas pequeñas contienen 6 monedas.

Aquí esta una caja mediana. Hay 3 cajas pequeñas en cada caja median.



Aquí hay una caja grande.

La caja grande está llena con 4 cajas medianas.



¿Cuántas monedas hay en una caja grande? _____

7. Compara estas fracciones usando >, =, <

$\frac{3}{5} \bigcirc \frac{3}{7}$ $\frac{5}{8} \bigcirc \frac{3}{8}$ $\frac{4}{4} \bigcirc \frac{3}{3}$

$\frac{2}{3} \bigcirc \frac{3}{5}$ $\frac{3}{4} \bigcirc \frac{6}{8}$ $\frac{4}{7} \bigcirc \frac{2}{5}$

Grade 4: Spring

Universal Screener for Number Sense

Cards for Interview: One set per teacher

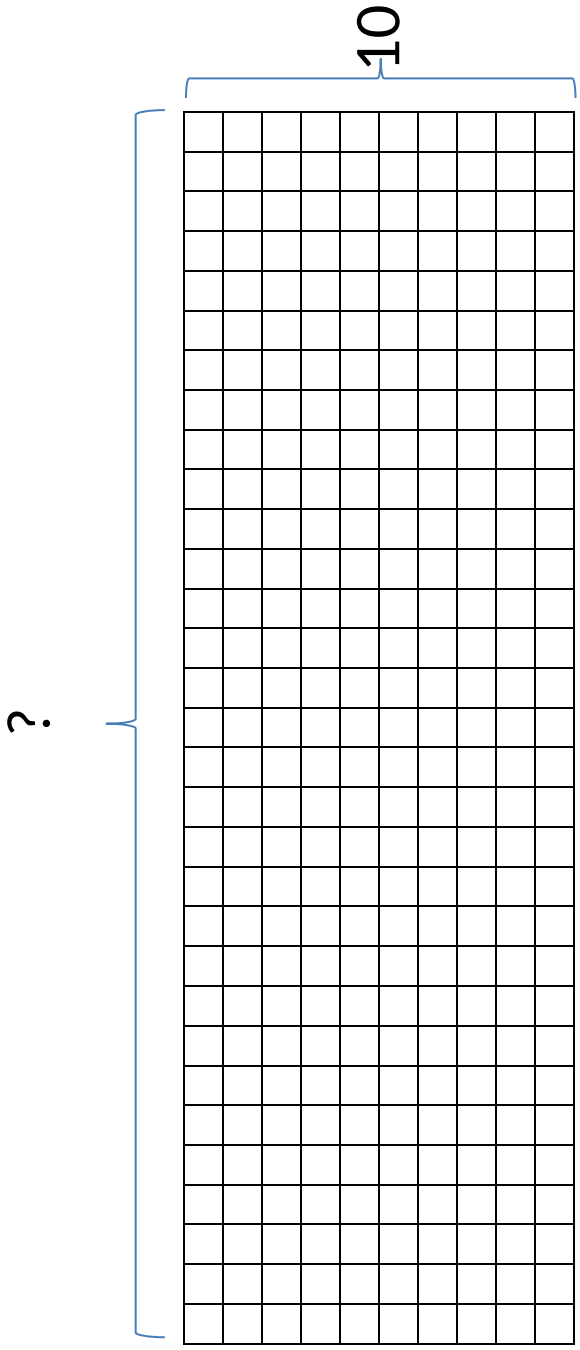
$37 \times 4 = 148$
36×4
$20{,}000 - 10$
$2{,}000 - 10$
$204 - 20$
$698 + \_\_\_ = 1{,}000$
$700 + \_\_\_ = 1{,}000$

$\frac{5}{3}$	$\frac{1}{3}$

Grade 4: Spring

Universal Screener for Number Sense

Array card for Interview: One per teacher



310 Squares

Grade 4: Spring

Universal Screener for Number Sense

Number lines for Interview: Cut into strips, one line per student.

Grade 5: Spring

Universal Screener for Number Sense

Overview

The 5th grade Spring Universal Screener for Number Sense is the last assessment in this series, and is unique in that it is the only assessment in the k-5 series that has no interview.

As students prepare for the transition to 6th grade this assessment is also unique in that the standards alignments for the tasks vary from 1st to 5th grades.

The reasons for this shift in style are to ensure that there is a survey of the critical skills and concepts of elementary school in order to alert teachers and schools to any unfinished learning that will need to be addressed before or during 6th grade. For many districts the end of 5th grade marks the transition to middle school. This assessment is written to help schools identify students who will be in need of significant support in order to have success with mathematics as they transition to middle and high school, and to alert teams of teachers to specific areas of unfinished learning that should be addressed in small or whole groups.

While the 5th Grade Spring USNS assesses some foundational concepts and basic computation skills from the earlier grades, it also provides opportunities for students to demonstrate their understanding of some important 5th grade skills and concepts and overall preparedness for 6th grade content.

While this assessment is intended to help identify students who would benefit from additional supports before or during 6th grade, it is not written to identify students for advanced or accelerated programming. Most students who are being considered for advanced or accelerated programming will perform very well on this assessment, and therefore, adding the results of this assessment to a body of evidence makes sense. However, this assessment alone is not an indicator of readiness for advanced or accelerated coursework.

Grade 5: Spring

Universal Screener for Number Sense

Instructions and Guidance

Do not allow for the use of calculators for this assessment.

Before the assessment begins you may review the use of >, < if you think that there are students who are still confused with this. The assessment intends to assess whether students understand which fractions are greater, and it is assumed that students know how to use the symbols well.

Instructions for Written Question #1

Rulers are not recommended. While using a ruler on the first problem set might make the lines straighter, it will slow down the assessment significantly. **Instructions for**

Written Question #1

Rulers are not recommended. While using a ruler on the first problem set might make the lines straighter, it will slow down the assessment significantly.

At the beginning of the assessment, read the following: **"This is an assessment of some of the things you have learned in math over the past few years. It is an assessment of how you *think* about mathematics. Solve the problems however you want. Check your answers and show your thinking.**

> ***"Esta es una asesoría de algunas de las cosas que has aprendido en matemáticas en el transcurso de los últimos años. Es una asesoría de como tu piensas acerca de matemáticas. Resuelve los problemas como tú desees. Demuestra tus respuestas y comparte tu manera de pensar.***

"I'm going to read the first question aloud for everyone. It says, "24 square tiles can be arranged to make a rectangle like this:""

> ***"Yo voy a leer la primera pregunta en voz alta para todos. Y dice, "24 losas cuadradas pueden ser arregladas para formar un rectángulo como este:"***

Check for understanding.

Continue, **"We can show this rectangle like this…."** Refer to the rectangle and clarify, **"See how the rectangle is drawn quickly. It doesn't need to be perfect, and it does not need to have perfectly straight lines. Just make it clear enough that I can see the rectangle and the numbers."**

> ***"Podemos enseñar este rectángulo así…."*** *Refer to the rectangle and clarify,* ***"Ven como el rectángulo esta dibujado rápidamente. No necesita ser el tamaño exacto, y no necesita tener líneas perfectas derechas. Solamente háganlo claro para que pueda ver el rectángulo y los números."***

"Next it says, "This is called a "two by twelve" rectangle, or two times twelve." Check for understanding. **"What other rectangles (or squares) can you make with twenty-four tiles? Find all the possibilities."**

> ***"A continuación dice, "Esto es llamado un rectángulo de "dos por doce, o dos veces doce."*** *Check for understanding.* ***"Que otros rectángulos (o cuadrados) puedes hacer con veinte y cuatro losas? Busca todas las posibilidades.***

"You don't need to draw all the rectangles; you may write the names like two by twelve." (2 x 12) **"Work through the rest of the assessment on your own. If you need help reading something raise your hand and I can help you to read it.**

> ***"No necesitas dibujar todos los rectángulos; puedes escribir los nombres como dos por doce."*** *(2 x 12)* ***"Trabaja por el resto de la asesoría por ti mismo. Si necesitas ayuda leyendo algo levanta la mano y yo te puedo ayudar a que lo leas."***

When students try to draw all of the 24 squares (some will feel the need to), then encourage them to just draw the whole rectangle. This task should take only a few minutes.

If a student takes more than 5 minutes with question 1, encourage them to move onto the other questions and come back to finish this one later.

Provide manipulatives (e.g. 24 tiles for question 1) only when an accommodation is necessary.

The Written Component - Up to 60 minutes (many will finish in less)

The written component is used to elicit student reasoning and their ability to create visual models to match situations. This is also where fractions are included since those can cause problems in digital assessment and paper and pencil are more efficient.

The Digital Component – Up to 30 minutes

The digital component of this assessment focuses primarily on basic computational skills. Students should be provided with scratch paper to complete the assessment and should be actively encouraged to use it.

The digital component can also be delivered via paper and pencil. The advantage of the digital version is that it auto-scores and also provides a different perspective.

Have the students put their names onto their scratch paper and collect it in order to do error analysis and to see the strategies students are using.

The two components are designed to complement one another. They assess different things. It is intended that both components will be administered.

Grade 5: Spring

An Extension Question

This task is an optional extension to the first question. For students who finish quickly, have this task ready so that they can work on it while others finish.

This task prompt is not included on the screener because it would be the only task that would have the potential for eliciting advanced proficiency. The sky is the limit with this one (never mind the ceiling).

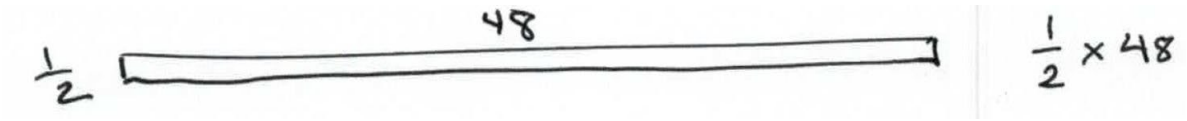
If this question gets some interesting responses, please share them (without any names please) to our Facebook Number Sense Screeners group. Looking forward to seeing what comes of this one.

No rubric is provided for this task (yet).

What if students were allowed to use calculators on this one? Try it and see.

A printable version of this task is available at the end of this document.

Tony says, "I can make other rectangles if I can use fractions and decimals. If this side is only $\frac{1}{2}$ long, and 48 wide, it also makes 24."



What are some other possible rectangles that make 24 when you use fractions and/or decimal numbers?

Grade 5: Spring

Universal Screener for Number Sense

Standards Alignment and Scoring Guides for Written Tasks, *print 1 copy/test administrator*

1. Factors of 24 and 36: 4.OA.B.4

Number Sense: Multiplication and Division – Fact Fluency & Create Representations

3	2	1	0
Student finds all of the factor pairs of 24: 1 x 24, 2 x 12 (given), 3 x 8, and 4 x 6. and Student finds all of the factor pairs of 36: 1 x 36, 2 x 18, 3 x 12, 4 x 9, and 6 x 6 Student does not need to put the commutative of each pair. (e.g., students do not need to put both 4 x 9 and 9 x 4).	Student is missing 1 factor pair from one or both of the sets (i.e., one from each.)	Student has two missing factor pairs, or from one or both sets. OR included one incorrect factor pair.	Student is unable to complete the task OR has more than one incorrect factor pair.
Commentary: The ability to find the factors of whole numbers is a skill that links directly to key conceptual developments later. Students who have facility with finding factor pairs are prepared for working with rational numbers in middle school. Although students are encouraged to draw rectangles for this task, if the factor pairs are given only as an expression (e.g. 4 x 9 or 4 by 9) that is considered correct.			

2. Equivalent fractions: 4.NF.A.1

Number Sense: Fractional Thinking – Magnitude, Comparisons and Equivalence

3	2	1	0
Student finds 3 equivalent fractions to $\frac{4}{8}$ and creates a drawing that clearly shows the equivalence of $\frac{2}{3}$ and $\frac{4}{6}$.	Student finds at least 2 equivalent fractions to $\frac{4}{8}$ and a drawing that demonstrates the equivalence of $\frac{2}{3}$ and $\frac{4}{6}$. OR Student finds 3 equivalent fractions to $\frac{4}{8}$, but the drawing of $\frac{2}{3}$ and $\frac{4}{6}$ does not clearly demonstrate their equivalence.	The student has only found one or two fractions equivalent to $\frac{4}{8}$ and the drawing of $\frac{2}{3}$ and $\frac{4}{6}$ does not clearly demonstrate their equivalence.	Student provides no fractions equivalent to $\frac{4}{8}$ and the drawing of $\frac{2}{3}$ and $\frac{4}{6}$ does not clearly demonstrate their equivalence.
Commentary: An understanding of equivalent fractions is necessary for further development of fraction understanding and is essential for much of the learning that students will do in middle school as they prepare for algebra. The drawings that students make to show the equivalence of $\frac{2}{3}$ and $\frac{4}{6}$ can vary widely from area models, to circles, to number lines. What is critical is that the size of the whole is equal for the two fractions, and that the overall size of the representations of the two fractions is roughly the same. Some students will make only one drawing to represent the two fractions and show how the same shape can be divided into either 3 or 6 equal parts.			

Grade 5: Spring

3. Adding fractions: 5.NF.A.1 Number Sense: Fractional Thinking - Addition

3	2	1	0
The student adds all of the fractions correctly. $\frac{1}{4}+\frac{1}{2}=\frac{3}{4}$ $\frac{2}{3}+\frac{3}{5}=\frac{19}{15}$ *or* $1\frac{4}{15}$ $2\frac{3}{4}+1\frac{3}{8}=4\frac{1}{8}$ *or* $\frac{33}{8}$	Student gets 2 out of 3 of the addition problems correct	Student answers one problem correctly	Student answers none of the problems correctly.
Commentary: The ability to add fractions with unlike denominators is a skill that is critical to 5th grade. Students who have not mastered this skill will need opportunities for targeted instruction and practice. Students who perform at a level 0 on both this and the previous task demonstrate that their understanding of fractions is still in an early stage and further assessment is needed to determine the extent of their understanding and determine appropriate starting points for intervention.			

4. Subtracting Fractions: 5.NF.A.1 Number Sense: Fractional Thinking - Subtraction

3	2	1	0
The student subtracts all of the fractions correctly. $\frac{3}{4}-\frac{1}{2}=\frac{1}{4}$ $1\frac{1}{3}-\frac{2}{3}=\frac{2}{3}$ $2\frac{1}{4}-\frac{3}{8}=1\frac{7}{8}$ *or* $\frac{15}{8}$.	Student gets 2 out of 3 of the problems correct.	Student answers one problem correctly.	Student answers none of the problems correctly.
Commentary: The ability to understand and work with fractions is considered to be a leading indicator of success in middle and high school mathematics. It is also some of the most challenging work of elementary school. Students who struggle with these problems might have also struggled with the addition problems above, but not necessarily. Occasionally, an underlying issue with fraction understanding shows up in subtraction problems but not in addition problems. As small groups are formed for targeted instruction, consider the varying needs of the students involved.			

Grade 5: Spring

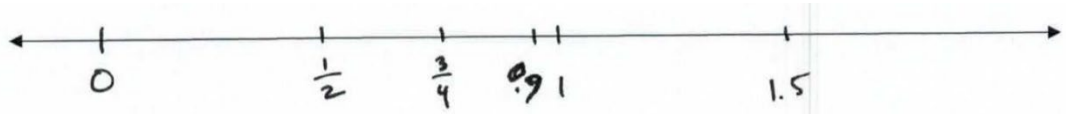
5. Fractions on Number Lines: 3.NF.A.2 Number Sense: Fractional Thinking – Number Lines

3	2	1	0
Student correctly places the numbers on both number lines. *See scoring notes in commentary below.*	Student correctly places all of the numbers on the first number line, but not the second.	Student incorrectly places one number on the first number line.	Student makes more than one error on the first number line.

Commentary: This task serves as an indicator of number sense in a variety of ways. It allows students to demonstrate a basic understanding of fractions and decimals, it shows an understanding of how to use number lines (a foundational skill that will be taken to two dimensions in middle school as coordinate pairs begin to be plotted on coordinate planes), and it also reveals understandings of the magnitude of numbers.

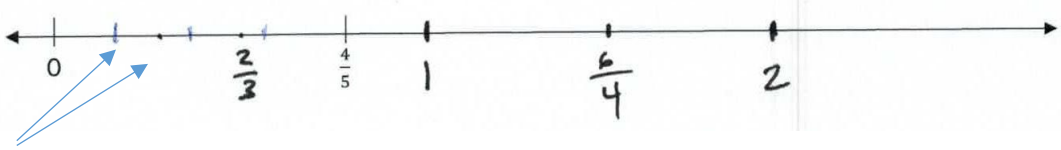
Notes on Scoring:
1st number line:

- 0 is placed furthest left.
  $\frac{1}{2}$ is halfway between 0 and 1.
- $\frac{3}{4}$ is placed roughly halfway between $\frac{1}{2}$ and 1.
- 0.9 is placed between $\frac{3}{4}$ and 1
- 1.5 is half the distance again to the right of 1 and halfway to the distance of where 2 would be.



2nd Number line.
To find the correct placement for 1, students should divide the space between 0 and $\frac{4}{5}$ into approximately 4 equal parts, often making marks but not labelling them. They then take the size of those units and add one more unit of that same size to determine where 1 should be.

- 1 is placed so that when the space between 0 and 1 is divided in fifths, $\frac{4}{5}$ is on the fourth fifth.
- 2 is placed to the right, relative to where 1 is placed.
- 2/3 is placed to the right of center between 0 and 1 and to the left of 4/5
- 6/4 is placed halfway between 1 and 2.



Extra markings are not necessary, but should also not be counted as incorrect.

Grade 5: Spring

6. Dividing by unit fractions: 5.NF.B.7.B

Number Sense: Fractional Thinking Division & Multiplication and Division – Model with Equations

3	2	1
Student correctly answers 8 pieces and creates an equation using the fraction that matches the situation: either $\frac{1}{4}$ x 8 = 2 Or $2 \div \frac{1}{4} = 8$ (students might substitute a letter for the solution to this problem (e.g. $\frac{1}{4}$ x P = 2) Expressions are also acceptable (e.g. $2 \div \frac{1}{4}$)	Student correctly answers 8 pieces and equation is <u>incorrect</u>, or the student has created an equation that does not use the fraction. (e.g. 2 x 4 =8)	Student does not answer 8.
Commentary: While this problem involves the division of a whole number by a unit fraction, which is considered by many teachers to be some of the most advanced work of 5th grade, students who have strong number sense, will be able to solve this problem using a variety of methods. Creating an equation that matches the situation is the key piece of this problem which shows operational sense and preparedness for the work of middle school.		

7. Multiplication with an Area Model: 4.NBT.B.5 Number Sense: Multiplication Procedures

3	2	1	0
Student finds the area of each of the sections of the rectangle and the entire area. 30 x 20= 600 20 x 4 = 80 30 x 6 = 180 6 x 4 = 24 Total area: 884 sq. ft. If the student doesn't put the unit (square feet or an abbreviation thereof) still score as a level 3 response. It is something to take note of, however, and a fully correct answer will include the unit.	Student attempts to find all of the areas, and the total area but makes one or two minor computation error(s). **OR** Student applies a standard algorithm to find the area, but does not demonstration of how it connects to the area model.	Student makes significant omissions in their response and total area is incorrect.	Student provides no response, or there are multiple omissions and errors demonstrating significant misunderstandings.
Commentary: The ability to understand and apply multiplication to solve multi-digit multiplication problems is a fundamental skill. Area models in multiplication are critical for developing an understanding of the distributive property of multiplication and lay a foundation for further learning in middle school and algebra as students begin to learn about quadratics and polynomials.			

Grade 5: Spring

8. Decimal division/multiplication: 5.NBT.B.7

Number Sense: Problem Solving: Mult/Div & Place Value – Decimals & Represent w/ Equations

3	2	1
Student correctly answers 7 jumps and creates an equation that matches the situation: either 1.4 ÷ 0.2 =7 or 0.2 x 7 = 1.4 (students might substitute a letter for the solution to this problem (e.g., 0.2 x J = 1.4) Expressions are also acceptable (e.g., 1.4 ÷ 0.2).	Student correctly answers 7 jumps. But equation is incorrect. OR a correct equation or expression is given, but the answer is not given or is incorrect. OR A correct solution is given, but the equation given shows repeated addition or subtraction. (e.g. 0.2+0.2+0.2+0.2+0.2+0.2 +0.2=1.4)	Student does not answer 7 jumps and the equation does not match the situation.
Commentary: The context that this problem provides will support access for students who have a sense of these basic decimal numbers. While the expectations described in the Common Core state standards for computation with decimal numbers extend well beyond the basic calculations involved in this problem, this problem seeks to assess whether students are making sense of the value of the numbers involved and whether they have developed the operational sense necessary to create an equation which could be used to solve this problem.		

9. Division and decimal place value: 5.NBT.B.7

Number Sense: Place Value – Decimals & Problem Solving Model with Equations

3	2	1
Student answers that the beans each weigh 1.4 g (or about 1.4 g) and creates an equation that matches the situation. (e.g., 14 ÷ 10 = 1.4 or g x 10 = 14)	Student answers 1.4 g, but does not provide an equation that matches, OR student provides an equation that is accurate, but an incorrect solution.	Student's answer is incorrect, and equation does not match the problem.
Commentary: This relatively intuitive context provides students with an opportunity to demonstrate their number sense as it relates to division and decimal numbers. This question is closely related to 5.NBT.A.2 which is about the patterns in the placement of the decimal point when multiplying and dividing by powers of ten. Students who are making sense of that work might apply that knowledge to this situation, however many will not, applying their number sense instead to arrive at the solution.		

Grade 5: Spring

Universal Screener for Number Sense

Standards Alignment and Scoring Guides for Digital Tasks, *print 1 copy/test administrator*

D1 - Add and Subtract: 3.NBT.A.2 Number Sense: Place Value – Solve Written Problems

3	2	1	0
Student solves both problems correctly. 326 + 89 = 415 72 - 38=34	Not a possible score	Student solves one problem correctly	Neither problem correct
Commentary: This basic computation is a third grade standard and if a student's mistakes on these problems are not addressed, it can cause confusion for many years to come. Although it is argued by some that basic computation can be compensated for with calculators in the upper grades, difficulty with basic computation is often a strong indicator of issues with place value, counting, and other concepts. Students who score at level 1 or 0 should be provided with targeted instruction and practice and likely additional assessment to determine the source(s) of confusion.			

D2- Multiply and Divide: 4.NBT.B.5, 4.NBT.B.6

Number Sense: Multiplication and Division – Solve Written Problems

3	2	1	0
Student answers all problems correctly. 354 x 3 = 1,062 65 x 43 = 2,795 96 ÷ 8 = 12 132 ÷ 6 = 22	Student gets 3 of 4 problems correct	Student gets only 1 or 2 problems correct	Student gets none of the problems correct
Commentary: As with the addition and subtraction problems above, multiplication and division are necessary skills for success in middle school. The errors that students make in these areas can be indicators of larger conceptual issues that cause the errors. The ability to divide specifically has been demonstrated to be a strong predictor of success in middle schools. This is likely because of the variety of skills and concepts that are involved in division. Students who score at a level 2 on this set of tasks should be considered for further evaluation. Students who score at level 1 or 0 should be evaluated further to determine the root causes of the mistakes that they are making and be provided with targeted instruction and practice opportunities.			

Grade 5: Spring

D3-Balance the Equations: 1.OA.D.7 Number Sense: Mental Math

3	2	1
Both answers correct: 102 – 32 = 100 – 30 8 x 4 = 16 x 2	One correct answer	No correct answers
Commentary: Although the numbers in these equations extend beyond the work of 1st grade, understanding of the equals sign is a 1st grade standard according to the Common Core and most state standards. This idea that one side of the equation must balance with the other side is critical for success in middle school. This problem is also designed to elicit relationships between numbers in subtraction and multiplication.		

D4 - Decimal Operations: 5.NBT.B.7 Number Sense: Place Value - Decimals

3	2	1
Both answers correct: 33 – 1.06 = 31.94 3.2 x 0.1 = 0.32	One correct answer	No correct answers
Commentary: These two problems are designed so if a student has a good understanding of decimal numbers, they should be able to solve these problems mentally. Many students will still choose to solve the problems using paper and pencil, but it is worth noting which students rely on computational procedures to solve these. An understanding of decimal numbers represents a final phase of place value understanding in elementary school.		

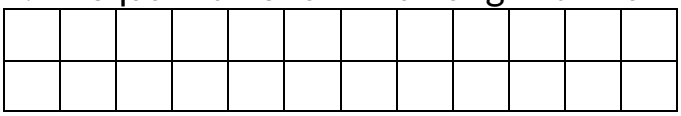
Grade 5: Spring

Universal Screener for Number Sense

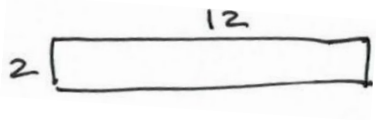
Written Component, *print 1 copy/student*

Name _____ **Date** _____

1. 24 square tiles can be arranged to make a rectangle like this:



We can show this rectangle like this:



This is called a "2 by 12" rectangle, or 2 x 12.

What other rectangles (or squares) can you make with 24 tiles? Find all the possibilities.

What rectangles (or squares) can you make with 36. Find all the possibilities.

Grade 5: Spring

2. List 3 fractions equivalent to $\frac{4}{8}$

_____, _____, _____

Draw a picture to prove $\frac{2}{3} = \frac{4}{6}$

3. Add.

$\frac{1}{4} + \frac{1}{2} =$

$\frac{2}{3} + \frac{3}{5} =$

$2\frac{3}{4} + 1\frac{3}{8} =$

4. Subtract.

$\frac{3}{4} - \frac{1}{2} =$

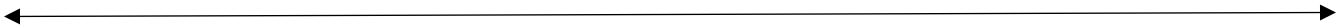
$1\frac{1}{3} - \frac{2}{3} =$

$2\frac{1}{4} - \frac{3}{8} =$

Grade 5: Spring

5. Accurately locate and label these numbers on the number line below.

$\frac{1}{2}$ 0 0.9 1.5 1 $\frac{3}{4}$



Accurately locate and label these numbers on the number line below.

1 2 $\frac{2}{3}$ $\frac{6}{4}$

6. Meg has a string that is 2 feet long. She cuts the whole string into ¼-foot pieces. How many ¼-foot pieces does she have?

_____ pieces

Write an equation or expression that matches the problem.

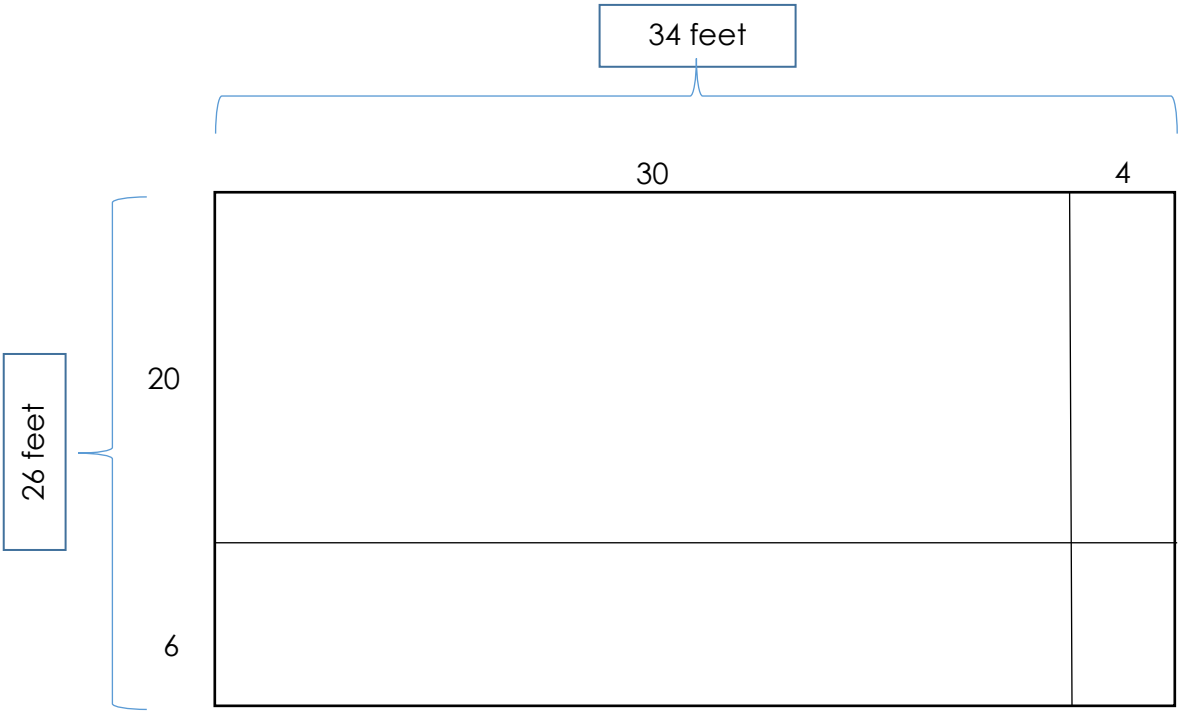
_____

Grade 5: Spring

7. Tina needs to find the area of a room which is 26 x 34 feet.

To find the area she drew a large rectangle for the whole room. Then she drew lines to make smaller rectangles inside.

Find the area for each of the smaller rectangles and the whole rectangle.



What is the area of the whole room? _____

Grade 5: Spring

8. A toad jumps 0.2 meters each jump. How many jumps will it take for the toad to jump 1.4 meters?

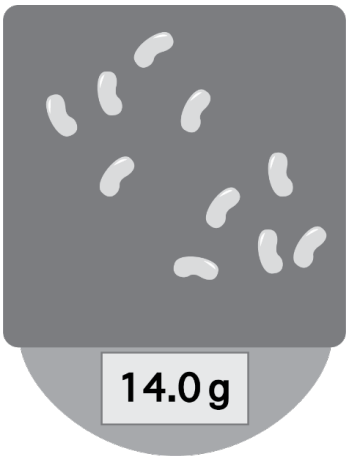
_____ jumps

Write an equation or expression that matches the problem.

_____

9. Joel puts 10 beans onto a scale. The scale reads 14.0 grams.

How much does 1 bean probably weigh? _____



Write an equation or expression that matches the problem.

_____

Grade 5: Spring

Universal Screener for Number Sense

D Tasks, *print 1 copy/student*

Solve. Use scratch paper for your calculations.

1. Add and Subtract

   326 + 89 = _____

   72 - 38 = _____

2. Multiply and Divide

   354 x 3 = _____

   65 x 43 = _____

   96 ÷ 8 = _____

   132 ÷ 6 = _____

3. Complete these equations to make them true.

☐ - 32 = 100 - 30 8 x ☐ = 16 x 2

4. Decimal Operations

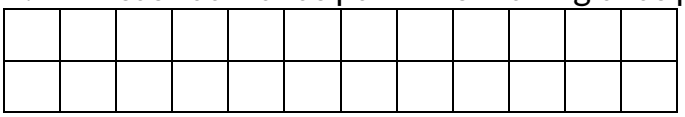
   33 – 1.06 = _____

   3.2 x 0.1 = _____

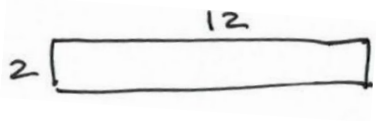
Grade 5: Spring

Nombre _____ **Fecha** _____

1. 24 losas cuadradas pueden ser arregladas para hacer un rectángulo como este:



Podemos demostrar este rectángulo así:



Esto se llama un rectángulo de “2 por 12” o 2 x 12.

¿Qué otros rectángulos (o cuadrados) puedes hacer con 24 losas? Busca todas las posibilidades.

¿Qué rectángulos (o cuadrados) puedes hacer con 36? Busca todas las posibilidades.

Grade 5: Spring

2. Lista 3 fracciones equivalentes a $\frac{4}{8}$

_____, _____, _____

Dibuja una figura para probarlo $\frac{2}{3} = \frac{4}{6}$

3. Suma.

$\frac{1}{4} + \frac{1}{2} =$

$\frac{2}{3} + \frac{3}{5} =$

$2\frac{3}{4} + 1\frac{3}{8} =$

4. Resta.

$\frac{3}{4} - \frac{1}{2} =$

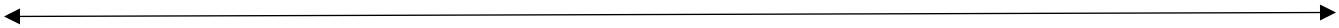
$1\frac{1}{3} - \frac{2}{3} =$

$2\frac{1}{4} - \frac{3}{8} =$

Grade 5: Spring

5. Ubique los números con precisión y nómbrelos en la línea numérica debajo.

$\frac{1}{2}$ 0 0.9 1.5 1 $\frac{3}{4}$



Ubique los números con precisión y nómbrelos en la línea numérica debajo.

1 2 $\frac{2}{3}$ $\frac{6}{4}$

6. Meg tiene una cuerda que es 2 pies de largo. Ella corta la cuerda entre piezas de ¼-de pie. ¿Cuántas piezas de ¼- de pie ella tiene?

_____ piezas

Escribe una ecuación o una expresión que coincide con el problema.

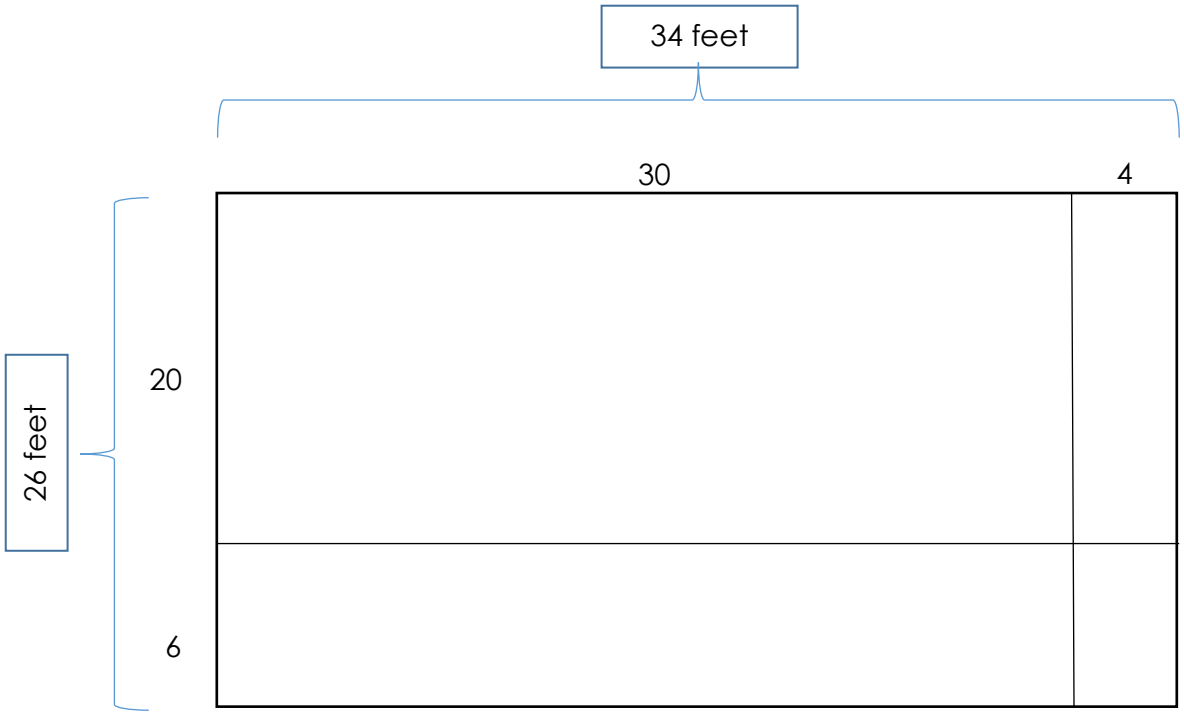
_____

Grade 5: Spring

7. Tina necesita encontrar el área de un cuarto que es 26 x 34 pies.

Para encontrar el área ella dibujo un rectángulo grande para describir el cuarto. Después dibujo líneas para hacer pequeños rectángulos adentro.

Encuentra el área para cada uno de los pequeños rectángulos y el rectángulo total.



¿Cuál es el área total de todo el cuarto? _____

Grade 5: Spring

8. Un sapo salta 0.2 metros por cada salto. Cuantos saltos le tomara al sapo para saltar1.4 metros?

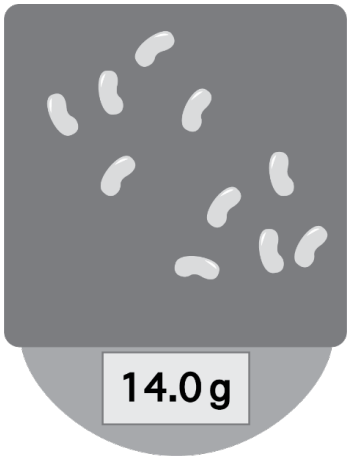
_____ saltos

Escribe una ecuación o una expresión que coincide con el problema.

_____

9. Joel pone 10 frijoles sobre una balanza. La balanza lee 14.0 gramos.

¿Cuál es el peso más probable de un frijol? _____



Escribe una ecuación o una expresión que coincide con el problema.

_____

Grade 5: Spring

Universal Screener for Number Sense

D Tasks, *print 1 copy/student*

Resuelve. Usa un papel borrador para tus cálculos.

1. Suma y Resta

   326 + 89 = _____

   72 - 38 = _____

2. Multiplica y Divide

   354 x 3 = _____

   65 x 43 = _____

   96 ÷ 8 = _____

   132 ÷ 6 = _____

3. Completa estas ecuaciones para hacerlas verdad.

☐ - 32 = 100 - 30 8 x ☐ = 16 x 2

4. Operaciones Decimales

   33 – 1.06 = _____

   3.2 x 0.1 = _____

Grade 6: Spring

Universal Screener for Number Sense

Written Assessment (45-60 minutes)

The 6th grade spring screener is entirely a written assessment.

The written portion of the assessment should be conducted as you would any regular classroom test. Direct the students to work independently on the assessment.

- Proctor actively, moving around the room to ensure the integrity of the assessment.
- Ample space is provided on the assessment for students to show work. No scratch paper should be necessary.
- Do not allow for the use of calculators or multiplication tables.

If you are uncertain of a student's answer to a question, feel free to probe and interact with the student. Notice the gestures that students make as they engage with this task. However, as you work with students in this way, attempt not to provide unnecessary support like reading the numbers to them.

Grade 6: Spring

Universal Screener for Number Sense

Written Portion

1. Numeral Writing

Write these numbers in standard form:

a) Negative twenty-three hundredths

_____

b) six-fourteenths

_____

c) three-hundred two and 10 hundredths

_____

d) six and five eighths

_____

Grade 6: Spring

Universal Screener for Number Sense

2. Unit Rate Concepts

Use this information for Part A and Part B

Tony's lemonade recipe uses 4 lemons for every 9 tablespoons of sugar.

Sal's lemonade recipe 1 lemon for every 2 tablespoons of sugar.

Part A:

Tony is making a large container of lemonade. He uses 100 lemons. How many tablespoons of sugar does he add?

_____tablespoons of sugar

Explain how you know.

_____

_____

_____

Part B: Write the ratio of lemons to tablespoons of sugar for each of the recipes.

Tony's ratio _____

Sal's ratio _____

Whose lemonade would be sweeter? Explain how you know.

_____

_____

_____

Grade 6: Spring

Universal Screener for Number Sense

3. **Ratio and Rate Relationships**

A store sells bags of mixed candies that contain a combination of mints and chocolates. There are different sizes of candy bags, but the ratio of candy in each bag is always 2 mints to 3 chocolates (2:3). For example, in a small candy bag there are 20 mints, and 30 chocolates.

In a large candy bag there are 120 chocolates. How many mints are there?

_____mints

Explain your reasoning with numbers, pictures, and/or words.

Grade 6: Spring

Universal Screener for Number Sense

4. **Apply Operations to Algebraic Expressions**

Write the expression that matches each statement.
Some expressions will be used more than once.

$9x$ $9 + x$ $9 - x$ $9 \div x$

Statement	Expression
Dale has 9 cups of water in a bottle. Jamie put x more cups of water into the same bottle.	
Dale has 9 cups of water. Dale has x cups of water more than Jamie has.	
Dale has 9 cups of water. Jamie pours all the water into x bottles.	
Dale has 9 bottles. Jamie puts x cups of water into each bottle.	
Dale has 9 cups of water. Jamie drinks x of those cups of water.	
Dale has 9 cups of water. Jamie pours x cups into each bottle.	
Dale has 9 cups of water. Jamie has x times as much water.	

Grade 6: Spring

Universal Screener for Number Sense

5. Equivalent Expressions

Provide an equivalent expression for y + y + y.

_____

Explain why the two expressions (your solution and y + y + y) are equivalent.

_____

_____

_____

_____

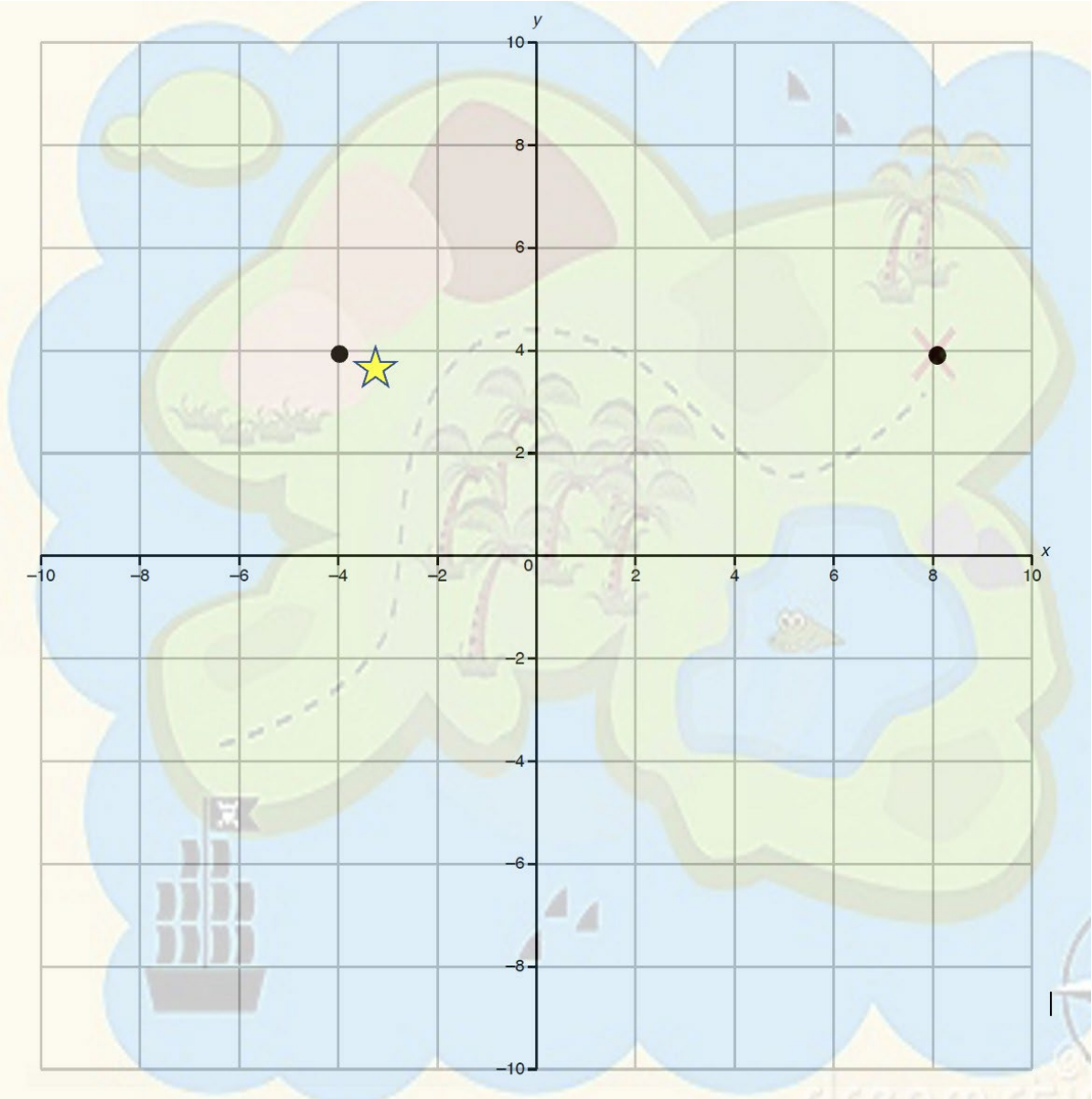
Grade 6: Spring

Universal Screener for Number Sense

6. **Coordinate Plane with Four Quadrants**

<u>Use this information for parts 1 and 2 below:</u>

Below is a treasure map. The star shows the position of a pirate's boat. The X shows where a treasure is. Distances are in miles. There are two groups of pirates who land on the island. They both are looking for something they need or want.



Grade 6: Spring

Universal Screener for Number Sense

Part A: The first group of pirates is thirsty. They need to locate the water hole. As they search for the water hole, they walk from the star to the water hole located at (-4, -2). **Draw a dot where the water hole is located and write the word, "water" here, marking this coordinate location.**

Part B: The second group of pirates wants to find the treasure. They walked the shortest distance from the star to the treasure (marked by the X). How many miles did the pirates walk?

_____

Explain how you solved the problem. Be sure to mention the coordinates of the star and the treasure in your explanation.

_____

_____

_____

_____

Grade 6: Spring

Universal Screener for Number Sense

Written Portion

1. Escritura numérica

Escriba estos números en forma estándar:

1. Veintitrés centesimos negativos

_____

1. Seis-catorces

_____

1. Trescientos dos y 10 centesimos

_____

1. Seis y cinco octavos

_____

Grade 6: Spring

Universal Screener for Number Sense

1. Conceptos de tasa unitaria

Utilice esta información para la Parte A y Parte B

La receta de limonada de Tony utiliza 4 limones por cada 9 cucharadas de azúcar. La receta de limonada de Juan es 1 limón por cada 2 cucharadas de azúcar.

Parte A:

Tony está haciendo un recipiente de limonada grande. Utiliza 100 limones. ¿Cuántas cucharadas de azúcar agregara?

_____cucharadas de

azúcar, Explica cómo lo sabes.

_____

_____

_____

Parte B: Escribe la proporción de limones a cucharadas de azúcar para cada una de las recetas.

Proporción de Tony _____

Proporción de Juan _____

¿De quién sería la limonada más dulce? Explica cómo lo sabes.

_____

_____

_____

Grade 6: Spring

Universal Screener for Number Sense

1. **Relaciones de relación y tasa**

Una tienda vende bolsas de dulces mixtos que contienen una combinación de mentas y chocolates. Hay diferentes tamaños de bolsas de caramelos, pero la proporción de dulces en cada bolsa es siempre de 2 mentas a 3 chocolates (2: 3). Por ejemplo, en una pequeña bolsa de dulces hay 20 mentas y 30 chocolates.

En una bolsa grande de dulces hay 120 chocolates. ¿Cuántas mentas hay?

_____Mentas

Explica tu razonamiento con números, imágenes y / o palabras.

Grade 6: Spring

Universal Screener for Number Sense

1. **Aplicar operaciones a expresiones algebraicas**

Escriba la expresión que coincida con cada instrucción. Algunas expresiones se usarán más de una vez.

$9x$ $9 + x$ $9 - x$ $9 \div x$

Declaración	Expresión
Daniel tiene 9 tazas de agua en una botella. Jaime puso x tazas más de agua en la misma botella.	
Daniel tiene 9 tazas de agua. Jaime tiene x tazas de agua más que Jamie.	
Daniel tiene 9 tazas de agua. Jaime vierte toda el agua en x botellas.	
Daniel tiene 9 botellas. Jaime pone x tazas de agua en cada botella.	
Daniel tiene 9 tazas de agua. Jaime bebe x de esas tazas de agua.	
Daniel tiene 9 tazas de agua. Jaime vierte x tazas en cada botella.	
Daniel tiene 9 tazas de agua. Jaime tiene x veces más.	

Grade 6: Spring

Universal Screener for Number Sense

1. Expresiones equivalentes

Proporcionar una expresión equivalente para $y + y + y$.

_____

Explique por qué las dos expresiones (su solución $y + y + y$) son equivalentes.

_____

_____

_____

_____

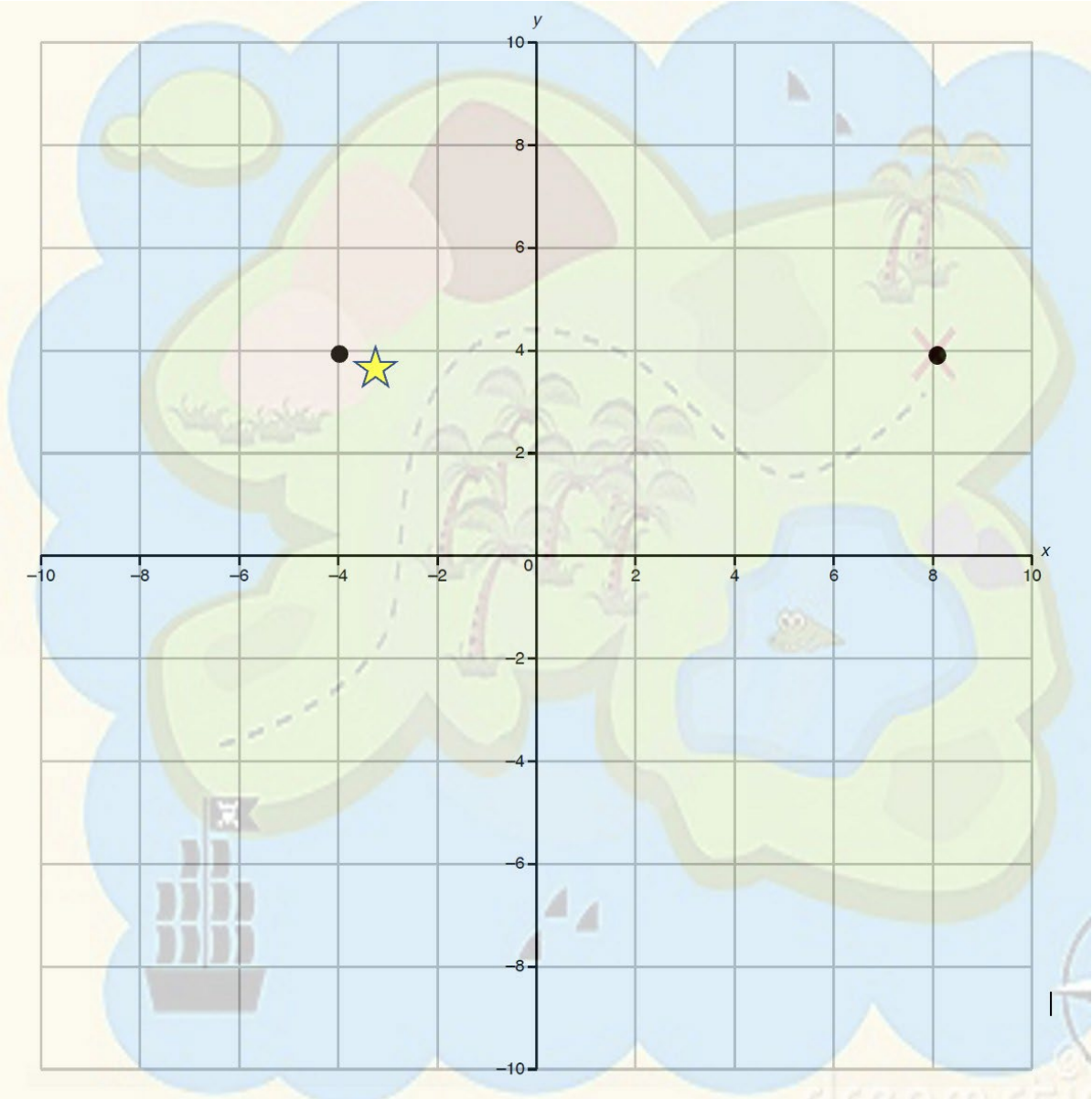
Grade 6: Spring

Universal Screener for Number Sense

1. **Plano de coordenadas con cuatro cuadrantes**

<u>Utilice esta información para las partes 1 y 2 a continuación:</u>

A continuación, se muestra un mapa del tesoro. La estrella muestra la posición del barco de un pirata. La X muestra dónde está el tesoro. Las distancias están en millas. Hay dos grupos de piratas que desembarcan en la isla. Ambos están buscando algo que necesitan o quieren.



Parte A: El primer grupo de piratas tiene sed. Necesitan localizar el pozo de agua. Mientras buscan el pozo de agua, caminan desde la estrella hasta el pozo de agua ubicado en (-4, -2). **Dibuja un punto donde se encuentra el pozo de agua y escribe la palabra "agua" aquí, marcando esta ubicación en coordenadas.**

Parte B: El segundo grupo de piratas quiere encontrar el tesoro. Caminaron la distancia más corta desde la estrella hasta el tesoro (marcado por la X). ¿Cuántas millas caminaron los piratas?

_____

Explica cómo resolviste el problema. Asegúrate de mencionar las coordenadas de la estrella y el tesoro en tu explicación.

_____

_____

_____

_____

Grade 6: Spring

Universal Screener for Number Sense

Scoring Guide

1. Numeral Writing 6.NS.C.6

1	2	3
Student writes fewer than 3 correctly.	Student writes 3 of the 4 numbers correctly.	Student writes all numbers correctly. -0.23 (or -.23) 6/14 302.10 (or 302.1) 6 5/8

2 - Part A: Unit Rate Concepts 6.RP.A.3

1	2	3
Student answers 225, but provides no explanation. OR Student does not answer 225, and explanation does not reveal an understanding of the situation that could have possibly led to a correct answer. OR anything else less than a level 2 response.	Student expresses a formalized understanding of the multiplicative relationships in their work and explanation, but there is a computational error. OR Student answers 225, and work shows an understanding of the relationship of lemons to sugar, but the explanation does not make clear the multiplicative nature of the relationships.	Student answers 225 tablespoons. Explanation reveals a formalized understanding of the multiplicative relationships. For example, 4 x 25 = 100 and 9 x 25 = 225. The use of a ratio table should be scored as a 3.

2 - Part B: Unit Rate Concepts 6.RP.A.1

1	2	3
Not a 2.	Both ratios are written correctly. And Explanation of why Sal's recipe is sweeter does not clearly reveal that 4:9 is less than 1:2. OR Ratios are written incorrectly. (e.g. 4:9 and 2:1 - that is, they are not consistent in terms of lemons to tbsp or tbsp to lemons.) And Sal's lemonade is identified as sweeter and explanation shows understanding that for Sal's recipe there are 2 tbsp of sugar for each lemon, and Tony's recipe has less than 2 tbsp for each lemon	Both ratios are written correctly. Tony - 4:9 Sal - 1:2 (ratios may also be written as 9:4 and 2:1, but should be consistent across both, either lemons:tbsp or tbsp:lemons.) AND Tony's recipe is correctly identified as sweeter. AND Explanation shows understanding that for Sal's recipe there are 2 tbsp of sugar for each lemon, and Tony's recipe has more than 2 tbsp for each lemon

3. **Ratio and Rate Relationships 6.RP.A.2**

1	2	3
Student does not demonstrate an understanding of how to apply the ratios to solve tell how many mints.	Student shows an understanding of the relationships, but confuses the mints and the chocolates (e.g. student answers 160) OR Student shows an understanding of the multiplicative relationships, but makes a computation error.	Student correctly responds 80 mints. Explanation communicates a formalized understanding of the multiplicative relationship. E.g. 3 x 40 = 120 and 2 x 40 = 80

4. **Apply Operations to Algebraic Expressions 6.EE.A.2.A**

1	2	3
4 or fewer correct answers	5 correct answers	6 or 7 correct answers

Statement	Expression
Dale has 9 cups of water in a bottle. Jamie put x more cups of water into the same bottle.	9 + x
Dale has 9 cups of water. Dale has x cups of water more than Jamie has.	9 - x
Dale has 9 cups of water. Jamie pours all the water into x bottles.	9 ÷ x
Dale has 9 bottles. Jamie puts x cups of water into each bottle.	9x
Dale has 9 cups of water. Jamie drinks x of those cups of water.	9 - x
Dale has 9 cups of water. Jamie pours x cups into each bottle.	9 ÷ x
Dale has 9 cups of water. Jamie has x times as much.	9x

5. **Equivalent Expressions 6.EE.A.4**

1	2	3
Student does not write an equivalent expression.	Student writes an equivalent expression (see 3). But the explanation fails to communicate an understanding that repeatedly adding the same number is also expressed as multiplication. E.g. the student answers something like, "That is how you do it."	Student answers 3y or 3*y or y*3 or other equivalent. Student provides an answer that indicates if you add the same number repeatedly that is the same as multiplication.

6. **Coordinate Plane with Four Quadrants 6.NS.C.6, 6.NS.C.8**

1	2	3
Both Part A and Part B incorrect.	Student provides a correct answer for Part A or Part B but not both. If student answers something like, "I counted," and/or does not mention the coordinates, score as a level 2 response.	Student correctly places the point for the water hole at (-4, -2) AND Student answers that the pirates walked 12 miles. AND Students explanation shows an understanding that the distance from -4 to 8 is 12.

Appendix A

Notes from the 2020 Revisions

The format of the entire series has changed from it's former structure in the BVSD Math Screeners to encourage more note-taking and careful observation. Detailed descriptions have been added to help use the tasks formatively and increase scoring consistency. Each Fall Screener now contains the following elements:

- **Note Catcher:** Each of the assessments now has a note catcher which includes fewer details about the script, condensed scoring guides, and more space for notes.
- **Quick Script:** Provides teachers familiar with the assessments enough guidance to administer the assessment efficiently.
- **Detailed Guide:** For each of the assessments in the series a detailed guide has been written to help clarify the purpose, administration, and scoring of each of the tasks.
- **Cards:** For the administration of the tasks.

In general, counting tasks have been shortened wherever possible. The counting tasks remain central to the entire series; however, they were also some of the most time-consuming tasks of the series. Teachers are encouraged to allow students to count longer as time allows when they feel that it continues to provide valuable information.

Several tasks include visual supports and contexts that were not there before. This is a result of experiences with students over the past seven years. When students have been unable to provide responses to bare number problems, contexts and visual supports sometimes provide insights into student thinking that otherwise goes unnoticed. These changes primarily reflect learning that has come from working with students, from the US Math Recovery Council, and from Realistic Math Education and the Freudenthal Institute.

Place value tasks were added to both 1st and 2nd grades. Given that place value understanding is critical, and especially in 2nd grade, it felt important to add these tasks to help teachers hear the understanding of tens and ones that students bring with them.

Using the results that have been collected in the Forefront Global Cohort, some questions have been calibrated in order to get a better full spectrum understanding of student thinking. These changes, most of which meant making tasks a bit easier, should also help to improve the efficiency of the assessment.

Kindergarten:

Task #2 from the 2013 Screeners has been removed. This was a numeral recognition task that simply asked students to identify which was a number from a series of symbols. Although some teachers found this task to be helpful in identifying students who had very little exposure to numerals, it did little to enhance the information that was already being gathered in task 3, which is to read the numerals to 10.

Task #7 Is a new task to ask students to show five fingers and three fingers. Finger knowledge has been repeatedly shown to be a strong indicator of number sense. The ability to use fingers to represent numbers is also critical for the work of kindergarten where every student should become adept with using fingers to not only show numbers, but also to solve addition and subtraction tasks.

First Grade:

Task #4 which previously suggested that teachers present 8 counters of one color and 7 of another has been changed to just have the teacher give the student 15 counters to count. This helps the task to focus on one-to-one correspondence and the ability to count a set of objects.

Task #10 was added to help teachers see students' emerging understanding of place value and their ability to use 10 as a unit.

Second Grade:

Aggregate scores of the 2nd Grade Fall Screener were consistently higher than any of the other Screeners year after year and across the many districts using the Screeners. Meanwhile, there were no questions relating to place value, which is a critical concept of 2nd grade.

Tasks #9 and **#10** were added to provide a context for a student to solve 10 + 6 and then 16 + 10. This will help teachers to better understand the readiness of the students for the place value work of the grade.

The Second Grade Fall Screener has fewer changes than other grade levels in part because of an interest in maintaining consistency with the assessment that was used for this recently published research which demonstrated that this Screener is highly predictive of overall math performance in 3rd, 4th, and 5th grades. (Wilkins, J., Woodward, D., Norton, A. 2020)

Third Grade:

Tasks #1 & #2: The verbal number sequence tasks were shortened substantially to make the assessment take significantly less time, while still providing critical information. These tasks also now include a card to help support the student in understanding where to start the count.

Task #7 asks the student to solve 50 – 24. This has proven to be a difficult task for students everywhere. While the numbers for this task will not change, the delivery will. A visual model has been added to support the thinking of students who are incorrect in their first attempt. This change will help teachers better understand how to best serve students who might be unable to solve a task when presented symbolically, but who, when provided with a visual support, are able to solve the problem.

Fourth Grade:

Questions #1 and #2: As with third grade, the verbal number sequences have been shortened considerably to streamline the assessment. These tasks also now include a card to help support the student in understanding where to start the count.

Question #3: a fraction has been added to the numeral identification task.

Question #6 was a question about 132 pencils that need to be put into boxes with 10 pencils each. Many teachers questioned whether this task was beyond the expectations for fall of 4th grade. Results over the years in the Forefront Global Cohort showed that about 40% of students were unable to solve this task. Therefore, the number of pencils has been changed to 82. This calibration is intended to better inform starting points for instruction.

Question #8: 400 – 198 has been a question that has been the topic of much discussion. Many teachers love this task and feel that it reveals a lot about student thinking, however, historically fewer than 50% of students in the Forefront Global Cohort score 3 points on this task. In order to calibrate this task, so that it will reveal a broader spectrum of understanding a follow-up prompt, 400 – 102, has been added for students who are unsuccessful with the first task.

Question #9: The number line task has consistently returned disappointing results. Although the task is clearly in the realm of what students are expected to learn in 3rd grade according to the Common Core and most state standards, in practice, students have demonstrated considerable difficulty with this task and fewer than 20% of students in the Global Cohort have demonstrated success over the years. Understanding how fractions are represented on number lines is critical. In order to better understand student thinking on this task, the task has been rewritten to place it into the context of a race. This has made the task slightly more accessible and so helps teachers to recognize the emerging understanding of fractions. About 30% of students were successful with this task, leaving plenty of room for improvement.

Fifth Grade

Task #1: Verbal number sequence shortened, and card for starting number for count was added.

Task #2: Fractions have been added to the numeral ID task.

Task #3: The prior version of this tasks was designed to ask for a memorized fact. It has been adjusted to help teachers understand student thinking related to multiplication. This task was changed from 8 x 7 to 6 x 4, and a visual model is now provided to help teachers understand students' methods for solving the task.

Task #4: Like the multiplication task, the division task has been redesigned to better understand student thinking related to division. This task now is supplemented with an array to help illustrate student thinking.

Task: #7: Previously this task asked, "How many tens in 132?" This caused significant confusion. To get at the idea of place value that the original question had intended to target this task has been changed to match the 4^{th} grade pencil problem. The context will provide a better access point for student thinking. Meanwhile the number has been increased to 213 to help teachers better understand how students are dealing with the relationship between tens and hundreds.

Task #8: This money task also was adjusted to help teachers better target students who might need additional support. The cost of the object to be purchased was changed from $16.97 to $12.25. This is also intended to improve the efficiency of the assessment. However, in actuality, the initial results from 2020 indicate that this attempt to make this task easier fell short and still only about 20% of students answered this question correctly.