

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.

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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
<i>scoring: correct & fluent: 3 pts, correct on 2nd attempt or uncertain: 2 pts, unsuccessful: 1 pt</i>	
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 ____ <input type="checkbox"/> correct and fluent: 3 pts <input type="checkbox"/> correct but uncertain: 2 pts <input type="checkbox"/> any unsuccessful: 1 pt Notes:	
AVMR Number Words and Numerals Assessment recommended? _____	
Multiplication and Division	score
<i>scoring: correct on the first attempt: 3 pts, correct on second attempt: 2 pts, unsuccessful: 1 pt</i>	
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. <input type="checkbox"/> correct and fluent: 3 pts <input type="checkbox"/> correct but uncertain: 2 pts <input type="checkbox"/> incorrect: 1 pt Notes:	
6. $45 + 19$ <input type="checkbox"/> correct w/o counting by ones: 3 pts <input type="checkbox"/> correct: counts by ones: 2 pts <input type="checkbox"/> incorrect: 1 pt Notes:	
7. $50 - 24$ <input type="checkbox"/> correct w/o counting by ones: 3 pts <input type="checkbox"/> correct: counts by ones: 2 pts <input type="checkbox"/> incorrect: 1 pt Notes:	
8. Difference in two lines (64 and 58) <input type="checkbox"/> correct: 3 pts <input type="checkbox"/> attempts counting: 2 pts <input type="checkbox"/> doesn't see where the difference is found 1 pt Notes:	
AVMR Place Value and Addition and/or Subtraction Assessments recommended? _____	
Structuring Number	score
<i>scoring: correct and automatic: 3 pts, correct/works out: 2 pts, incorrect: 1 pt</i>	
9. ____ + ____ = 13 Notes:	
10. ____ + ____ = 13 Notes:	
AVMR Structuring Number recommended? _____	



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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.
2. **“Count backward from 303.”** (stop at 298) Allow for 2 attempts if necessary.
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.



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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.
2. **“Cuenta hacia atrás desde el 303.”** (Stop at 298) Allow for 2 attempts if necessary.
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.”**



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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 496**” (stop at 502). If the student makes an error on the first attempt that you think might be corrected with a second attempt, say, “**OK. Let me hear that one more time.**” 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.
<p>Commentary: Counting in the higher ranges reveals an understanding of the number system more than an ability to <i>memorize</i> 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.</p> <p>For students who are unsuccessful with this task, consider using the Add+Vantage Math Recovery Number Words and Numerals assessment.</p>		

Count Back from 303 to 298

Number Sense: Backward Number Word Sequence (BNWS)

2. “**Count backward from 303**” (stop at 298) If the student makes an error on the first attempt that might be corrected with a second attempt, ask the student to start again.

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.
<p>As with counting forward, counting back is a skill that reveals understanding of the number system more than an ability to <i>memorize</i> a sequence of numbers. Because counting backward is significantly harder than counting forward allow for think time as necessary.</p> <p>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.</p>		



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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



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Task #4 Commentary Continued:

successful on a second attempt.

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.” <u>Or</u> 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.



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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
<p>Correct: Student recognizes the difference is 6. Student can use a variety of methods. Count by 1s is ok.</p>	<p>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. <u>Or</u> Student attempts to use the numbers to find the difference, but calculates incorrectly.</p>	<p>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.</p>
<p>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.</p>		

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
<p>Correct/fluent: The student demonstrates ready access to combinations of numbers that add to 13.</p>	<p>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.</p>	<p>Incorrect: Student does not accurately identify numbers that add to 13</p>
<p>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.</p>		



577

496

1,000

303

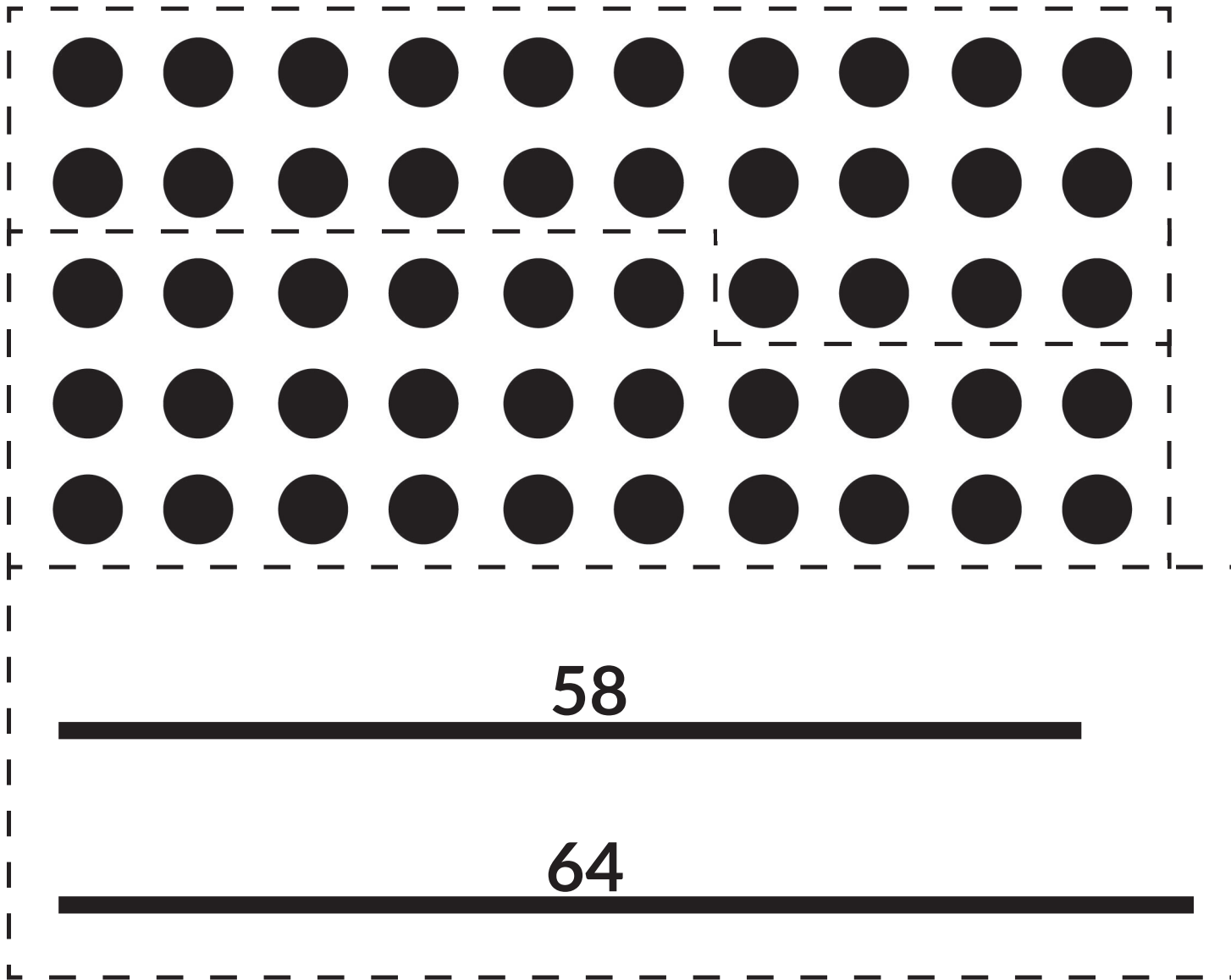
$45 + 19$

106

50 - 24

212





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 Overall Performance Bands

Kindergarten



First Grade



Second Grade



Third Grade



Fourth Grade



Fifth Grade



Sixth Grade

