



Core Knowledge[®] MATHEMATICS

Length Measurements Within 120 Units



Teacher Guide



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Length Measurements Within 120 Units

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Length Measurements Within 120 Units
Teacher Guide
Core Knowledge Mathematics™

Unit 6: Length Measurements Within 120 Units

At a Glance

Unit 6 is estimated to be completed in 18-19 days including 2 days for assessment.

This unit is divided into four sections including 16 lessons and 1 optional lesson.

- Section A—From Direct to Indirect Comparisons (Lessons 1-4)
- Section B—Measure by Iterating up to 120 Length Units (Lessons 5-11)
- Section C—All Kinds of Story Problems (Lessons 11-17)

On pages 5-7 of this Teacher Guide is a chart that identifies the section each lesson belongs in and the materials needed for each lesson.

This unit uses seven student centers.

- Target Numbers
- Five in a Row: Addition and Subtraction
- Get Your Numbers in Order
- How Close?
- Estimate and Measure
- Write Numbers
- Counting Collections

Unit 6: Length Measurements Within 120 Units

Unit Learning Goals

- Students measure length and count up to 120 length units. They solve addition and subtraction story problems with unknowns in all positions.

In this unit, students extend their knowledge of linear measurement while continuing to develop their understanding of operations, algebraic thinking, and place value.

In kindergarten, students identified attributes of objects that can be compared, such as length, weight, and capacity. In this unit, students compare the length of objects by lining them up at their endpoints, and explore ways to compare lengths of two objects that cannot be lined up.



From there, they transition to the idea of iterating length units, or using the same length unit allows us to measure the lengths of objects and to communicate measurements clearly.

Students begin by using the length of a connecting cube as a unit of measurement. Because connecting cubes snap together, students can focus on counting the length of the cubes without worrying about any gaps or overlaps in the units.

Later, students measure with length units that don't connect together, such as paper clips and base-ten cubes (centimeter cubes), but do not refer to formal units of length. They develop precision as they make sure that there are no gaps or overlap in the units used to measure.

Some objects that students measure by iterating small units yield measurements of over 100 length units. Students consider how to count and represent these larger groups of objects—up to 120—with a written number. They use familiar representations (connecting cubes and base-ten drawings) to recognize 100 as 10 tens, but do not consider the unit of a hundred until grade 2.

Later in the unit, students solve problems in various contexts, including measurement. They revisit Compare, Difference Unknown story problems and learn to solve Compare, Bigger Unknown and Smaller Unknown problems about lengths. Next, students are introduced to a new problem type: Take From, Start Unknown. They practice solving all story problems types with unknowns in all positions.

Section A: From Direct to Indirect Comparisons

Standards Alignments

Building On	K.MD.A.2
Addressing	1.MD.A.1, 1.NBT.B.3, 1.NBT.C.4, 1.NBT.C.5, 1.OA.C.5, 1.OA.C.6
Building Towards	1.MD.A.1

Section Learning Goals

- Compare the lengths of objects indirectly.
- Order objects by length.

In this section, students transition from direct comparison of lengths to indirect comparison. They reason about how they can compare the length of objects that cannot be easily lined up.

Students begin this transition by ordering the length of three objects directly. Next, they compare two objects by using the length of a third object.

For example, students may compare the pencil and the pen directly by lining them up and see that the pencil is shorter than the pen. Then, they may compare the pen and highlighter directly and see that the highlighter is longer than the pen.

Without comparing the pencil and highlighter directly, students could say that:

- The pencil is shorter than the highlighter because it is shorter than the pen.
- The highlighter is longer than the pencil because it is also longer than the pen.



At the end of the section, students practice using a third object as a tool to compare the length of objects that are very difficult to line up. For example, they use a string to compare the length of one side of a desk and the length of one of its legs.

The work here prepares students to iterate length units to measure objects in the next section.

Section B: Measure by Iterating up to 120 Length Units

Standards Alignments

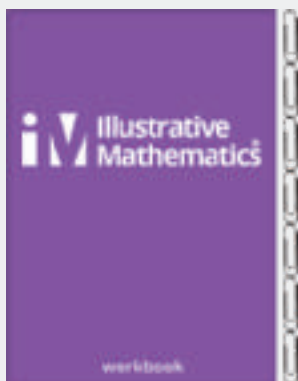
Addressing 1.MD.A.1, 1.MD.A.2, 1.NBT.A.1, 1.NBT.C.4, 1.NBT.C.5, 1.OA.C.5, 1.OA.C.6

Building Towards 1.MD.A.2

Section Learning Goals

- Count groups of up to 120 objects and write a number to represent them.
- Lay length units end-to-end with no gaps or overlaps and count the units to determine length.

In this section, students measure the length of objects by iterating length units. They learn the conventions of length measurement and represent their measurements with a number and the name of the length unit. They understand that the length measurement of an object is the number of same-size length units that span it without gaps or overlaps.



Students use manipulatives such as connecting cubes, paper clips, and base-ten cubes as length units. Other units of measurement that would yield a whole number of length units are also suggested.

It is important for students to measure lengths in whole units as they are developing the idea that the number of units for the same length would not change when measured by different people.

Students expand their counting and number-writing skills to 120 as they use base-ten cubes to measure lengths that are longer than 99 length units. Along the way, students consider groups of 10 and see that 10 tens is 100. A hundred is not discussed as a unit in grade 1, but the written notation is introduced so students can read and write the numbers 100–120.

   PLC: Lesson 8, Activity 1, Long Lengths with Small Cubes

Section C: All Kinds of Story Problems

Standards Alignments

Addressing	1.MD.A.2, 1.NBT.A.1, 1.NBT.C.4, 1.OA.A.1, 1.OA.A.2, 1.OA.B.4, 1.OA.C.6
Building Towards	1.NBT.C.4, 1.OA.A.1

Section Learning Goals

- Solve addition and subtraction story problems with unknowns in all positions.

In this section, students solve all types of story problems with unknowns in all positions. They interpret and write addition and subtraction equations that represent the problems.

Students begin by building and comparing concrete objects to solve Compare problems in the context of measurement. These problems involve Bigger or Smaller Unknown, a new problem type for students, and can be represented by diagrams such as shown here.



Next, students solve Take From problems with unknowns in all positions with a focus on Start Unknown, another new problem type. These problems can be challenging because the action can be represented with subtraction, but solving the problem may involve adding. For example:

*Elena has some beads in a box.
She uses 5 of them to make a bracelet.
She has 10 beads left.
How many beads were in Elena's box?*

An equation that represents the situation is $? - 5 = 10$. However, students might write $10 + 5 = ?$ to find the answer to the question.

Regardless of the equation they write, students should focus on explaining how their equation matches the story problem.

PLC: Lesson 14, Activity 1, Sort Story Problems

Throughout the Unit

Throughout the unit, Notice and Wonder and Estimation Exploration warm-ups allow students to consider lengths of objects using different units. In Number Talks and True and False, students add within 100.

Students are introduced to new centers that support the work of this unit. Centers to revisit from previous units are also suggested in each section. Feel free to incorporate other centers that have been previously introduced based on student need and interest.

Materials Needed

LESSON	GATHER	COPY
A.1	<ul style="list-style-type: none"> • Connecting cubes • Materials from a previous activity • Materials from previous centers • Objects of various lengths 	<ul style="list-style-type: none"> • none
A.2	<ul style="list-style-type: none"> • Materials from a previous lesson • Pencils • Scissors • String 	<ul style="list-style-type: none"> • none
A.3	<ul style="list-style-type: none"> • Connecting cubes in towers of 10 and singles • Materials from a previous activity • Pencils • Scissors • String 	<ul style="list-style-type: none"> • none
A.4	<ul style="list-style-type: none"> • Materials from previous centers • Number cards 0–10 	<ul style="list-style-type: none"> • How Close? Stage 3 Recording Sheet (groups of 1)
B.5	<ul style="list-style-type: none"> • Connecting cubes • Materials from previous centers 	<ul style="list-style-type: none"> • Lengths of Creepy, Crawly Things (groups of 1) • More Creepy, Crawly Things (groups of 1)
B.6	<ul style="list-style-type: none"> • Paper clips (1-inch) • Tape (painter's or masking) 	<ul style="list-style-type: none"> • Measure with Paper Clips (groups of 1)

B.7	<ul style="list-style-type: none"> ● Base-ten blocks ● Connecting cubes ● Paper clips (1-inch) ● Paper clips (2-inch) ● Tape (painter's or masking) 	<ul style="list-style-type: none"> ● none
B.8	<ul style="list-style-type: none"> ● Base-ten blocks ● Scissors ● String 	<ul style="list-style-type: none"> ● Representations of Numbers Over 80 (groups of 2)
B.9	<ul style="list-style-type: none"> ● Base-ten blocks ● Tape (painter's or masking) ● Tools for creating a visual display 	<ul style="list-style-type: none"> ● none
B.10	<ul style="list-style-type: none"> ● Base-ten blocks ● Connecting cubes ● Materials from previous centers ● Objects of various lengths ● Paper clips (2-inch) 	<ul style="list-style-type: none"> ● Estimate and Measure Stage 1 Recording Sheet (groups of 1)
C.11	<ul style="list-style-type: none"> ● Connecting cubes in towers of 10 and singles 	<ul style="list-style-type: none"> ● none
C.12	<ul style="list-style-type: none"> ● Connecting cubes in towers of 10 and singles ● Dry erase markers ● Sheet protectors 	<ul style="list-style-type: none"> ● Write the Number Stage 3 Gameboard (groups of 2)
C.13	<ul style="list-style-type: none"> ● Connecting cubes in towers of 10 and singles 	<ul style="list-style-type: none"> ● none
C.14	<ul style="list-style-type: none"> ● Connecting cubes in towers of 10 and singles 	<ul style="list-style-type: none"> ● Story Problem Cards, Unknowns in All Positions (groups of 2)
C.15	<ul style="list-style-type: none"> ● Connecting cubes in towers of 10 and singles ● Tools for creating a visual display 	<ul style="list-style-type: none"> ● none

C.16	<ul style="list-style-type: none">● 10-frames● Collections of objects● Cups● Materials from previous centers● Paper plates	<ul style="list-style-type: none">● Counting Collections Stage 3 Recording Sheet (groups of 1)
C.17	<ul style="list-style-type: none">● Colored pencils, crayons, or markers● Connecting cubes● Construction paper● Glue● Materials from a previous activity	<ul style="list-style-type: none">● Origami Triangles: Puppies and Tulips (groups of 1)

Center: Target Numbers (1–5)

Stage 1: Add Ones

Activities

- Grade1.6.A1.3 (supporting)
- Grade1.6.A4.2 (supporting)
- Grade1.6.B5.3 (supporting)
- Grade1.6.B10.2 (supporting)

Stage Narrative

Before playing, students remove the cards that show 0 and 10 and set them aside.

Students add a one-digit number to a two-digit number with composing a ten in order to get as close to 95 as possible. Students start their first equation with 55 and turn over a number card and add it to their starting number for the round. The sum becomes the first addend in the next round. The player who gets closest to 95 in 6 rounds, without going over, is the winner.

Standards Alignments

Addressing 1.NBT.C.4

Materials to Gather

Connecting cubes in towers of 10 and singles,
Number cards 0–10

Materials to Copy

Target Numbers Stage 1 Recording Sheet (groups of 1)

Stage 2: Add Tens or Ones

Activities

- Grade1.6.A1.3 (supporting)
- Grade1.6.A4.2 (supporting)
- Grade1.6.B5.3 (supporting)
- Grade1.6.B10.2 (supporting)

Stage Narrative

Before playing, students remove the cards that show 0 and 10 and set them aside.

Students add tens or ones to get as close to 95 as possible. Students start their first equation with 25. Students take turns flipping a number card and choosing whether to add that number of tens or ones and write an equation. The sum becomes the first addend in the next round. The player who gets closest to 95 in 6 rounds, without going over, is the winner.

Standards Alignments

Addressing 1.NBT.C.4

Materials to Gather

Connecting cubes in towers of 10 and singles,
Number cards 0–10

Materials to Copy

Target Numbers Stage 2 Recording Sheet (groups
of 1)

Stage 3: Add Two-digit Numbers

Activities

- Grade1.6.A1.3 (supporting)
- Grade1.6.A4.2 (supporting)
- Grade1.6.B5.3 (supporting)
- Grade1.6.B10.2 (supporting)

Stage Narrative

Students add two-digit numbers to get as close to 95 as possible. Students start by rolling two number cubes to get a starting number. Then, they take turns rolling the three cubes to get a number to add. They choose one of the numbers on the cubes to represent the tens and a different number to represent the ones. Students add their tens and ones to the starting number. The sum becomes the first addend in the next round. The player who gets closest to 95 in 6 rounds, without going over, is the winner.

Standards Alignments

Addressing 1.NBT.C.4

Materials to Gather

Connecting cubes in towers of 10 and singles,
Number cubes

Materials to Copy

Target Numbers Stage 3 Recording Sheet (groups
of 1)

Additional Information

Each group of 2 needs three number cubes.

Center: Five in a Row: Addition and Subtraction (1–2)

Stage 1: Add 1 or 2

Activities

- Grade1.6.A1.3 (supporting)
- Grade1.6.A4.2 (supporting)
- Grade1.6.B5.3 (supporting)
- Grade1.6.B10.2 (supporting)

Stage Narrative

Students choose a number card 0-10 and choose to add 1 or 2 to the number on their card and then place their counter on the sum.

Standards Alignments

Addressing 1.OA.C.5

Materials to Gather

Number cards 0–10, Two-color counters

Materials to Copy

Five in a Row Addition and Subtraction Stages 1 and 2 Gameboard (groups of 2)

Additional Information

Each group of 2 needs 25 counters.

Stage 2: Subtract 1 or 2

Activities

- Grade1.6.A1.3 (supporting)
- Grade1.6.A4.2 (supporting)
- Grade1.6.B5.3 (supporting)
- Grade1.6.B10.2 (supporting)

Stage Narrative

Students choose a number card 0-10 and choose to subtract 1 or 2 from the number on their card and then place their counter on the difference.

Variation:

Students can choose to add or subtract 1 or 2.

Standards Alignments

Addressing 1.OA.C.5

Materials to Gather

Number cards 0–10, Two-color counters

Materials to Copy

Five in a Row Addition and Subtraction Stages 1 and 2 Gameboard (groups of 2)

Additional Information

Each group of 2 needs 25 counters.

Stage 3: Add 7, 8, or 9

Activities

- Grade1.6.A1.3 (supporting)
- Grade1.6.A4.2 (supporting)
- Grade1.6.B5.3 (supporting)
- Grade1.6.B10.2 (supporting)

Stage Narrative

Students choose a number card 0–10 and choose to add 7, 8, or 9 to the number on their card and then place their counter on the sum.

Standards Alignments

Addressing 1.OA.C.5, 1.OA.C.6

Materials to Gather

Number cards 0–10, Two-color counters

Materials to Copy

Five in a Row Addition and Subtraction Stage 3 Gameboard (groups of 2)

Additional Information

Each group of 2 needs 25 counters.

Stage 4: Add or Subtract 10

Activities

- Grade1.6.A1.3 (supporting)
- Grade1.6.A4.2 (supporting)
- Grade1.6.B5.3 (supporting)
- Grade1.6.B10.2 (supporting)

Stage Narrative

Students choose a card that shows a multiple of 10. They choose whether to add or subtract 10 from the number on their card and then place their counter on the sum or difference.

Standards Alignments

Addressing 1.NBT.C.5

Materials to Gather

10-frames, Connecting cubes in towers of 10 and singles, Two-color counters

Materials to Copy

Five in a Row Addition and Subtraction Stage 4 Gameboard (groups of 2), Number Cards, Multiples of 10 (0-90) (groups of 2)

Additional Information

Each group of 2 needs 25 counters.

Stage 5: Add within 100 without Composing

Activities

- Grade1.6.A1.3 (supporting)
- Grade1.6.A4.2 (supporting)
- Grade1.6.B5.3 (supporting)
- Grade1.6.B10.2 (supporting)

Stage Narrative

Partner A chooses two numbers and places a paper clip on each number. They add the numbers and place a counter on the sum. Partner B moves one of the paper clips to a different number, adds the numbers, and places a counter on the sum. Students take turns moving one paper clip, finding the sum, and covering it with a counter.

Two gameboards are provided, one where students add a one-digit and a two-digit number and one where they add a two-digit and a two-digit number.

Standards Alignments

Addressing 1.NBT.C.4

Materials to Gather

Paper clips, Two-color counters

Materials to Copy

Five in a Row Addition and Subtraction Stage 5 Gameboard (groups of 2)

Additional Information

Each group of 2 needs 25 counters and 2 paperclips.

Stage 6: Add within 100 with Composing

Activities

- Grade1.6.A1.3 (supporting)
- Grade1.6.A4.2 (supporting)
- Grade1.6.B5.3 (supporting)
- Grade1.6.B10.2 (supporting)

Stage Narrative

Partner A chooses two numbers and places a paper clip on each number. They add the numbers and place a counter on the sum. Partner B moves one of the paper clips to a different number, adds the numbers, and places a counter on the sum. Students take turns moving one paper clip, finding the sum, and covering it with a counter.

Standards Alignments

Addressing 1.NBT.C.4, 2.NBT.B.5

Materials to Gather

Paper clips, Two-color counters

Materials to Copy

Five in a Row Addition and Subtraction Stage 6
Gameboard (groups of 2)

Additional Information

Each group of 2 needs 25 counters and 2 paper clips.

Center: Get Your Numbers in Order (1–5)

Stage 1: Two-digit Numbers

Activities

- Grade1.6.A1.3 (supporting)
- Grade1.6.A4.2 (supporting)

Stage Narrative

Students remove the cards that show 10 before they start. Then they choose two number cards and make a two-digit number. Students write their number in any space on the board, as long as the numbers from left to right go from least to greatest. If students cannot place their number, they get a point. The player with the fewest points when the board is filled is the winner.

Standards Alignments

Addressing 1.NBT.B.3

Materials to Gather

Dry erase markers, Number cards 0–10, Sheet protectors

Materials to Copy

Get Your Numbers in Order Stage 1 Gameboard (groups of 2)

Center: How Close? (1–5)

Stage 1: Add to 20

Activities

- Grade1.6.B5.3 (supporting)
- Grade1.6.B10.2 (supporting)

Stage Narrative

Before playing, students remove the cards that show 10 and set them aside.

Each student picks 5 cards and chooses 3 of them to write an addition expression with 3 addends. The student whose sum is closest to 20 wins a point for the round. Students pick new cards so that they have 5 cards in their hand and then start the next round.

Standards Alignments

Addressing 1.OA.C.6, 2.OA.B.2

Materials to Gather

Number cards 0–10

Materials to Copy

How Close? Stage 1 Recording Sheet (groups of 1)

Stage 2: Subtract from 20

Activities

- Grade1.6.B5.3 (supporting)
- Grade1.6.B10.2 (supporting)

Stage Narrative

Before playing, students remove the cards that show the number 10 and set them aside.

Each student picks 4 cards and chooses 2 or 3 to subtract from 20 to get close to 0. The student whose difference is closest to 0 wins a point for the round. Students pick new cards so that they have 4 cards in their hand and then start the next round.

Standards Alignments

Addressing 1.OA.C.6, 2.OA.B.2

Materials to Gather

Number cards 0–10

Materials to Copy

How Close? Stage 2 Recording Sheet (groups of 1)

Stage 3: Add to 100

Activities

- Grade1.6.A4.1 (addressing)
- Grade1.6.B5.3 (addressing)
- Grade1.6.B10.2 (addressing)

Stage Narrative

Before playing, students remove the cards that show the number 10 and set them aside.

Each student picks 7 cards and chooses 4 of them to create 2 two-digit numbers. Each student adds the numbers and the student whose sum is closest to 100 wins a point for the round. Students pick new cards so that they have 7 cards in their hand and then start the next round.

Standards Alignments

Addressing 1.NBT.C.4, 2.NBT.B.5

Materials to Gather

Number cards 0–10

Materials to Copy

How Close? Stage 3 Recording Sheet (groups of 1)

Center: Estimate and Measure (1–4)

Stage 1: Choose Your Unit

Activities

- Grade1.6.B10.1 (addressing)
- Grade1.6.C16.2 (addressing)

Stage Narrative

Students choose an object and a familiar unit to measure it with. They estimate the length of the object and then measure to see the actual length to the nearest whole unit.

Variation:

Students may use base-ten cubes and add the length of two objects to practice adding within 100.

Standards Alignments

Addressing 1.MD.A.2, 1.NBT.C.4

Materials to Gather

Base-ten blocks, Connecting cubes, Paper clips (2-inch)

Materials to Copy

Estimate and Measure Stage 1 Recording Sheet (groups of 1)

Additional Information

Gather or identify objects of various lengths that are less than 20 units (pencils, markers, books, glue, scissors, shoe, tape dispenser, side of desk).

Center: Write Numbers (1–2)

Stage 1: Numbers to 99 by 1

Activities

- Grade1.6.C16.2 (supporting)

Stage Narrative

Students count by 1 and choose whether to count forward or backward. Gameboards go from 39–60, 69–90, and 78–99.

Standards Alignments

Addressing 1.NBT.A.1

Materials to Gather

Dry erase markers, Sheet protectors

Materials to Copy

Write the Number Stage 1 Gameboard (groups of 2)

Stage 2: Numbers to 99 by 10

Activities

- Grade1.6.C16.2 (supporting)

Stage Narrative

Students count by 10 and choose whether to count forward or backward. Gameboards go from 3–93, 5–95, and 8–98.

Standards Alignments

Addressing 1.NBT.A.1

Materials to Gather

Dry erase markers, Sheet protectors

Materials to Copy

Write the Number Stage 2 Gameboard (groups of 2)

Stage 3: Numbers to 120 by 1

Activities

- Grade1.6.C12.3 (addressing)
- Grade1.6.C16.2 (addressing)

Stage Narrative

Students count by 1 and choose whether to count forward or backward. Gameboards go from 89–110, 95–116, and 99–120.

Standards Alignments

Addressing 1.NBT.A.1

Materials to Gather

Dry erase markers, Sheet protectors

Materials to Copy

Write the Number Stage 3 Gameboard (groups of 2)

Center: Counting Collections (K–1)

Stage 3: Estimate and Count Up to 120

Activities

- Grade1.6.C16.1 (addressing)

Stage Narrative

Students are given a collection of up to 120 objects. They record an estimate for how many objects they think are in their collection. Then, they work with a partner to figure out how many objects are in their collection and each partner records how many. Students may draw pictures, write numbers or equations, or use base-ten representations to represent their collection.

Standards Alignments

Addressing 1.NBT.A.1

Materials to Gather

10-frames, Collections of objects, Cups, Paper plates

Materials to Copy

Counting Collections Stage 3 Recording Sheet (groups of 1)

Additional Information

Create a collection of up to 120 objects per group of 2 students (buttons, two-color counters, linking cubes, paper clips, pattern blocks, square tiles, paper placemats).

Stages used in Kindergarten

Stage 1

Addressing

- Kindergarten.3.A

Supporting

- Kindergarten.4.B
- Kindergarten.5.C
- Kindergarten.7.B

Section A: From Direct to Indirect Comparisons

Lesson 1: Compare Lengths

Standards Alignments

Building On	K.MD.A.2
Addressing	1.MD.A.1, 1.NBT.B.3, 1.NBT.C.4, 1.NBT.C.5, 1.OA.C.5, 1.OA.C.6
Building Towards	1.MD.A.1

Teacher-facing Learning Goals

- Compare the length of objects by lining up the endpoints.
- Order three objects by length and use language such as “shorter than” and “longer than” to describe the relationship between the lengths.

Student-facing Learning Goals

- Let’s compare and order objects by length.

Lesson Purpose

The purpose of this lesson is for students to compare the length of objects by lining up the endpoints and order objects by length.

In kindergarten, students compared the length of two objects directly by lining up the endpoints. They described the objects using language such as longer and shorter. In this unit the words “longer than” and “shorter than” are encouraged, although students may use “taller than” in certain contexts related to height.

In this lesson, students compare the length of objects and consider how they know which is longer or shorter. Then, they order three objects by length.

The materials used in this lesson will be used again in the next lesson.

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR2 (Activity 1)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes: Activity 1
- Materials from a previous activity: Activity 2
- Materials from previous centers: Activity 3
- Objects of various lengths: Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

Reflect on how you can reinforce the work done in today's lesson outside of math class. When can you ask students to compare the length of objects around them?

Cool-down (to be completed at the end of the lesson)

 0 min

Unit 6, Section A Checkpoint

Standards Alignments

Addressing 1.MD.A.1

Student-facing Task Statement

Lesson observations

Student Responses

- Compare objects directly by lining them up at an endpoint.
- Use precise language ("longer than", "shorter than") to describe and compare lengths of objects.
- Order three objects by length.

Begin Lesson

Warm-up

🕒 10 min

Notice and Wonder: Pencils

Standards Alignments

Building On K.MD.A.2

Building Towards 1.MD.A.1

The purpose of this warm-up is to elicit the idea that it is important to line up the endpoints of objects in order to compare their length, which will be useful when students compare lengths in a later activity. While students may notice and wonder many things about these images, comparing the length using is the important discussion point.

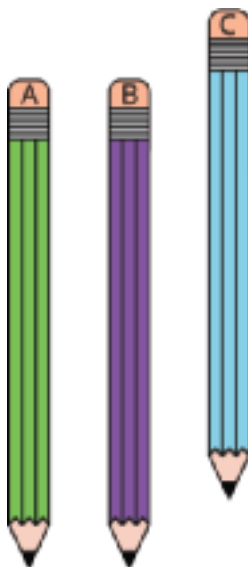
Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?

What do you wonder?

**Student Responses**

Students may notice:

Launch

- Groups of 2
- Display the image.
- “What do you notice? What do you wonder?”
- 1 minute: quiet think time

Activity

- “Discuss your thinking with your partner.”
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- “Which pencil do you think is the longest? Why?” (It looks like they are all the same, but it’s hard to know.)

- There are three pencils that all look the same.
- Pencils A and B are the same length.
- Pencil C is not lined up with the other two.
- Pencil C looks longer.

Students may wonder:

- Why is Pencil C raised up higher than the others?
- Are they all the same length?

Activity 1

🕒 15 min

Is it Longer or Shorter?

Standards Alignments

Building On K.MD.A.2

Building Towards 1.MD.A.1

The purpose of this activity is for students to compare the length of two objects directly. In the launch, students share statements comparing a pencil and a crayon. Students may share different observations (about color or other attributes) before focusing on the attribute of length. Students individually choose two objects, compare them and describe their lengths using complete sentences (for example, the pencil is longer than the crayon). It may be helpful to organize the materials in bags or buckets because they will be used in other activities. In the lesson synthesis, students discuss why it is important to line objects up at their endpoints when comparing their length and they make comparisons using precise language (MP3, MP6).

Access for English Learners

MLR2 Collect and Display. Circulate, listen for and collect the language students use as they compare the lengths of objects. On a visible display, record words and phrases such as: longer than, shorter than, long, line up. Invite students to borrow language from the display as needed, and update it throughout the lesson.

Advances: Speaking, Conversing

Access for Students with Disabilities

Representation: Access for Perception. Provide appropriate reading accommodations and supports to ensure student access to written directions and written questions.

Supports accessibility for: Language; Social-Emotional Functioning

Materials to Gather

Connecting cubes, Objects of various lengths

Required Preparation

- Each group of 4 needs 10-12 objects to measure (thin classroom objects like pencils, crayons, paper clips, toothpicks, markers) including connecting cube towers of 3, 5, and 8.

Student-facing Task Statement

Share your thinking with your partner.

- Choose 2 objects and compare their lengths.
- Choose 2 *different* objects and compare their lengths.

Write down your answers.

- Choose an object that you could write with and find the tower of 3 connecting cubes.

Which is longer?

Draw the 2 objects to show which is longer.

- Choose a different object and find the tower of 8 connecting cubes.

Which is shorter?

Launch

- Groups of 4
- Give each group 10–12 objects.
- Display a pencil and a crayon.
- “What comparison statement can you make about the pencil and the crayon?” (The pencil is longer than the crayon because I put them side by side. The crayon is shorter than the pencil. They are different colors. The pencil is made of wood and the crayon is wax.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- If needed, “When we compare the length of two objects, we can make a statement about which object is longer or shorter. The

Draw the 2 objects to show which is shorter.

- Find an object from the collection that is shorter than your foot.

Fill in the blank.

The _____ is shorter than my foot.

- Find an object from the collection that is longer than your pointer finger.

Fill in the blank.

The _____ is longer than my pointer finger.

Student Responses

Sample responses:

- Crayon
- Marker
- The tower of 5 is shorter than my foot.
- The pencil is longer than my pointer finger.

pencil is longer than the crayon. What other statement can we make?" (The crayon is shorter than the pencil.)

Activity

- "For the first two questions, share your thinking with a partner. After that, you will draw or write down your answers."
- 10 minutes: group work time
- Monitor for students who line up the endpoints to compare the length.

Synthesis

- Invite previously identified students to show how they lined up objects to compare them.
- "What would happen if the objects were not lined up?" (One might look longer even though it wasn't.)
- "What statement can we make to compare the length of ____ and ____? Use the phrases 'longer than' and 'shorter than.' (The ____ is longer than the _____. The ____ is shorter than the ____."

Activity 2

🕒 10 min

Order Objects

Standards Alignments

Addressing 1.MD.A.1

The purpose of this activity is for students to order three objects by length. Students line up objects from shortest to longest and longest to shortest. Students need to attend to the language in the question to know which way to order the objects. The language and reasoning students use in this activity helps prepare them to compare the length of objects indirectly in future lessons.

Materials to Gather

Materials from a previous activity

Required Preparation

- Each group of 4 needs the collection of objects from the previous activity.

Student-facing Task Statement

1. Pick 3 objects.

With your partner, put the objects in order from *shortest to longest*.

Trace or draw your objects.

2. Pick 3 new objects.

With your partner, put them in order from *longest to shortest*.

Write the names of the objects in order from longest to shortest.

Student Responses

1. Sample response: toothpick, crayon, marker
2. Sample response: pencil, toothpick, eraser

Launch

- Groups of 4
- Give each group 10–12 objects.

Activity

- Read the task statement.
- 5 minutes: small-group work
- Monitor for students who line up the endpoints of the objects.

Synthesis

- Invite previously identified students to demonstrate how they ordered three objects from shortest to longest.
- Display the three objects with the endpoints lined up so all students can see.
- “What statements can you make to compare the length of their objects?” (The ___ is longer than the ___ and ___.)
- As time permits, repeat by inviting a previously identified students to demonstrate how they ordered three objects from longest to shortest.

Advancing Student Thinking

If students appear to order their objects correctly without lining them up, consider asking:

- “How did you order your objects from ___ (shortest to longest or longest to shortest)?”
- “How could you prove to someone that your objects are ordered correctly?”

Activity 3

🕒 15 min

Centers: Choice Time

Standards Alignments

Addressing 1.NBT.B.3, 1.NBT.C.4, 1.NBT.C.5, 1.OA.C.5, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice working with two-digit numbers. Students choose from any stage of previously introduced centers.

- Target Numbers
- Five in a Row
- Get Your Numbers in Order

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from:
 - Target Numbers, Stages 1–3
 - Five in a Row, Stages 1–6
 - Get Your Numbers in Order, Stage 1

Student-facing Task Statement

Choose a center.

Target Numbers



Five in a Row

Launch

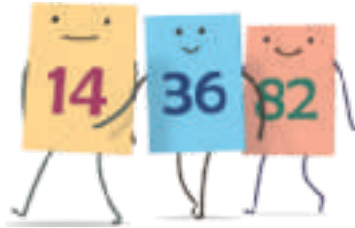
- Groups of 2
- “Now you are going to choose from centers we have already learned.”
- Display the center choices in the student book.
- “Think about what you would like to do.”
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of



Get Your Numbers in Order



their choice.

- 10 minutes: center work time

Synthesis

- Display numbers 2, 1, and 6.
- “Mai is playing Target Numbers. Her last sum was 78. These are the numbers she rolled on her last round. Which number should she choose as her tens and which should she choose as her ones in order to get as close to 95 as possible? Why?”

Lesson Synthesis

🕒 10 min

“Today we compared the length of objects and put objects in order from shortest to longest or longest to shortest. If we pulled six objects from our collection, what could we do to order them by length? What if we pulled one hundred objects?” (We would need to line them up at their endpoints.)

Lesson 2: Compare the Length of Objects Indirectly

Standards Alignments

Addressing 1.MD.A.1, 1.NBT.C.4

Teacher-facing Learning Goals

- Compare the length of two objects indirectly by using a third object.

Student-facing Learning Goals

- Let's compare 2 objects using a third object.

Lesson Purpose

The purpose of this lesson is for students to compare the length of two objects indirectly by comparing each with the length of a third object.

In the previous lesson, students ordered three objects by length by lining them up at their endpoints. Students used complete sentences to describe the relative length of objects.

The purpose of this lesson is for students to compare the length of two objects indirectly by comparing them with the length of a third object. Indirect comparison allows students to compare the length of objects that are difficult to compare by lining them up. The ideas in this lesson lead to the understanding that iterated length units can be used to measure and compare the length of objects. Students may intuitively understand the concept of indirect comparison and this lesson provides an opportunity for them to develop language to communicate that understanding (MP6).

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR8 (Activity 1)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Materials from a previous lesson: Activity 1
- Pencils: Activity 1
- Scissors: Activity 2
- String: Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

How did students explain how they used a tool (like the pencil or the string) to compare lengths indirectly? What did their explanations show they understand about comparing attributes like length?

Cool-down (to be completed at the end of the lesson)

⌚ 5 min

Compare the Pencil and Marker

Standards Alignments

Addressing 1.MD.A.1

Student-facing Task Statement

The pencil is longer than the pen.



The marker is shorter than the pen.

Use the words **pencil** and **marker** to complete this sentence:

The _____ is shorter than the _____.

Student Responses

The marker is shorter than the pencil.

Begin Lesson

Warm-up

⌚ 10 min

Number Talk: Add within 100

Standards Alignments

Addressing 1.NBT.C.4

The purpose of this Number Talk is to elicit strategies and understandings students have for adding within 100. These understandings help students develop fluency and will be helpful later in the unit when students add two-digit numbers within 100. When students share methods based on adding tens and tens and ones and ones, they show they are looking for and making use of the base-ten structure of two-digit numbers (MP7).

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $35 + 20$
- $35 + 25$
- $30 + 45$
- $37 + 45$

Student Responses

- 55: Add 2 tens. 45, 55
- 60: It's adding $35 + 20 + 5$. $55 + 5 = 60$
- 75: Add 3 tens. 55, 65, 75
- 82: It's the same as $30 + 40 + 7 + 5$.
 $30 + 40 = 70$. $7 + 5 = 5 + 5 + 2 = 12$.
 $70 + 12 = 82$.

Launch

- Display one expression.
- "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

Activity

- Record answers and strategies.
- Keep expressions and work displayed.
- Repeat with each expression.

Synthesis

- "Did anyone have the same method but would explain it differently?"
- "Did anyone approach the problem in a different way?"

Activity 1

🕒 15 min

Which is Longer? Which is Shorter?

Standards Alignments

Addressing 1.MD.A.1

The purpose of this activity is for students to identify objects that are longer or shorter than a given object. Students find two objects that are longer and two objects that are shorter than an unsharpened pencil. The students use the language of “longer than” and “shorter than” and record their findings in complete sentences so that indirect comparison can be discussed during the activity synthesis.

🌐 Access for English Learners

MLR8 Discussion Supports. Think aloud and use gestures to emphasize the language used for comparison. For example, use hands further or closer apart to accompany the words “longer” and “shorter”.

Advances: Listening, Representing

Materials to Gather

Materials from a previous lesson, Pencils

Required Preparation

- Each group of 4 students needs access to the materials from the previous lesson and one unsharpened pencil.
- Create a two-column chart with the headings “longer” and “shorter” for the synthesis.

Student-facing Task Statement

Find 2 objects that are longer and 2 objects that are shorter than the unsharpened pencil.

Write a sentence that compares each object to the pencil.

Example: The bulletin board is longer than the pencil.

Launch

- Groups of 4
- Give each group an unsharpened pencil and access to the objects from the previous lesson.
- Display two objects that are not the same length (for example, a crayon and a marker).

- 1.
- 2.
- 3.
- 4.

Student Responses

Sample responses:

1. The tower of 10 is longer than the pencil.
2. The ruler is longer than the pencil.
3. The toothpick is shorter than the pencil.
4. The marker cap is shorter than the pencil.

- “How do the lengths of these objects compare?” (The crayon is shorter than the marker. The marker is longer than the crayon.)
- 30 seconds: quiet think time
- Share responses.

Activity

- “You are going to compare the length of objects to the length of the unsharpened pencil. Find two objects that are longer than the pencil and two that are shorter than the pencil. Write a sentence for each comparison.”
- 8 minutes: independent work time
- Monitor for two objects that are close in length but one is found to be longer than the unsharpened pencil and one is found to be shorter.

Synthesis

- Display the T-chart with headings “longer” and “shorter.”
- “What objects are longer than an unsharpened pencil?” (a book, the ruler, the height of the desk)
- Record responses.
- What objects are shorter than an unsharpened pencil?” (a marker cap, a crayon, a toothpick)
- Record responses.
- Display previously identified objects that are close in length.
- “How do the lengths of the two objects compare?” (The book that is shorter than the pencil is also shorter than the block because the block is longer than the pencil.)
- “Because we compared the length of objects to the pencil, we know that some

objects are longer or shorter than others without lining them up.”

Activity 2

🕒 20 min

Measure Your Desk

👤 ↔ 👤 PLC Activity

Standards Alignments

Addressing 1.MD.A.1

The purpose of this activity is for students to use a third object to compare two lengths that can't be lined up by endpoints. Students compare the length of a side of their desk to the length of one of the legs of their desk indirectly using a string. This lesson helps students use a familiar object in their classroom and encourages them to mathematize their environment (MP4).

Since the side of the desk can not be easily compared to the leg of a desk directly, students need to determine how to use the string to compare. For example, they may mark where the length of the side reaches on the string and then compare that to the length of the leg. They may cut the string to be the length of the leg and then lay the string on the side of the desk to compare. Throughout the activity, when students reflect on the language they use and revise it to describe the attributes of objects, the lengths they measure, and how they use tools, they attend to precision (MP6).

If students sit at furniture that is significantly different than the desk pictured in the task, the teacher can adjust what students measure. For example, if students sit a table, identify one side of the table that is near the same length as one of the table legs for students to measure.

🕒 Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan how they will use the string to compare the length and height of their desk. Invite students to share their plan with a partner before they begin.

Supports accessibility for: Attention; Visual-Spatial Processing

Materials to Gather

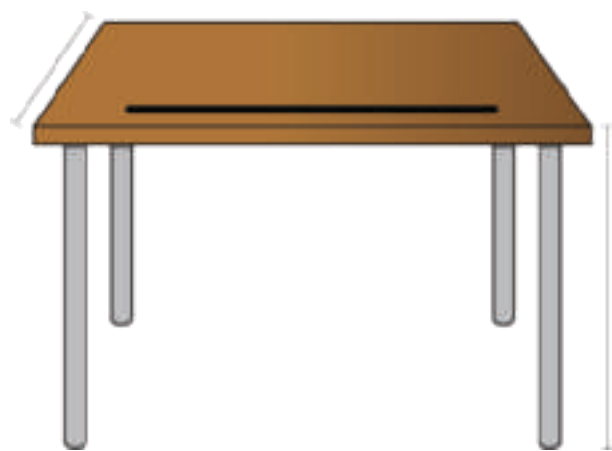
Scissors, String

Required Preparation

- Each group of 2 needs a piece of string longer than the length of the side of the students' desks shown in the activity.

Student-facing Task Statement

Compare the length of the side of your desk and the length of one of the legs of your desk using the string.



Use a drawing or words to explain how you know which is longer.

Student Responses

Sample response: I lined the string up with the length of the side of my desk and cut it. Then I moved the string to the one of the legs of my desk and it wasn't long enough so I know the leg is longer.

Launch

- Groups of 2
- Give each group a piece of string and scissors.
- "We saw that sometimes we can compare length without lining up the objects. Now, you are going to compare the length of a side of your desk to the length of one of the legs of your desk."
- Display the image.
- "This image shows which side we will be measuring. Trace the length of the side you will measure with your finger."
- "Why is it important that everybody knows which side of the desk we should measure? Does it matter which leg of the desk you measure?" (One side is longer than the other, so we need to make sure we are measuring the same thing. All the legs are the same length, so it shouldn't matter which one we measure.)

Activity

- "Compare the length of the side and the length of one of the legs of your desk using the string. Then, show how you know which is longer using words or drawings."
- 10 minutes: partner work time
- Monitor for students who compare indirectly by marking or cutting the string to match one length and then comparing the string to the other length.

Synthesis

- Invite previously identified students to share.

- “How was the string useful in comparing the lengths?” (You could put the string next to each part of the desk to see which one is longer.)

Advancing Student Thinking

If students say that both the side and the leg of the desk are shorter than the string, but do not say which part is longer, consider asking:

- “How did you use the string to compare the length of the side of the desk and the length of the leg?”
- “How could you use the string to tell whether the side or the leg is longer?”

Lesson Synthesis

🕒 10 min

Display three objects and the statements:

“The pencil is longer than the crayon.”

“The pencil is shorter than the tower.”

“Jada says that the crayon is shorter than the tower. Do you agree? Why or why not?” (Yes, if the crayon is shorter than the pencil and the pencil is shorter than the tower, then the crayon is shorter than both.)

“What other statements could we say about the objects?” (The crayon is shorter than the pencil. The tower is longer than the crayon and pencil.)

----- Complete Cool-Down -----

Response to Student Thinking

Students write “The pencil is shorter than the marker.”

Next Day Support

- During the launch of the next day's activity, have students use objects or drawings to represent the problem in the cool-down.

Lesson 3: Choose Objects to Compare Length Indirectly

Standards Alignments

Addressing 1.MD.A.1

Teacher-facing Learning Goals

- Choose and use objects to compare lengths of other objects indirectly.

Student-facing Learning Goals

- Let's compare the length of objects that can't be moved.

Lesson Purpose

The purpose of this lesson is for students to compare the length of two objects that cannot be compared directly.

In the previous lesson, students used a string to compare two lengths indirectly.

In this lesson, students choose their own object to compare the length of two other objects indirectly. Throughout the lesson, students make their own choices about what objects to use and how to use them to compare two other objects (MP5). Students also have opportunities to see and compare the different choices that their peers make. These conversations help prepare students for iterating same-sized length units to measure length in future lessons.

Access for:



Students with Disabilities

- Engagement (Activity 2)



English Learners

- MLR8 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1
- Materials from a previous activity: Activity 2
- Pencils: Activity 1
- Scissors: Activity 1

- String: Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	25 min
Lesson Synthesis	10 min

Teacher Reflection Question

How does indirect comparison prepare students to measure length by iterating length units in future lessons?

Cool-down (to be completed at the end of the lesson)

 0 min

Unit 6, Section A Checkpoint

Standards Alignments

Addressing 1.MD.A.1

Student-facing Task Statement

Lesson observations

Student Responses

- Compare objects directly by lining them up at an endpoint.
- Use precise language (“longer than,” “shorter than”) to describe and compare lengths of objects.
- Compare the length of two objects indirectly using a third object.
- Choose an object to compare the lengths of other objects indirectly.

Begin Lesson

Warm-up

 10 min

Notice and Wonder: More Pencils

Standards Alignments

Addressing 1.MD.A.1

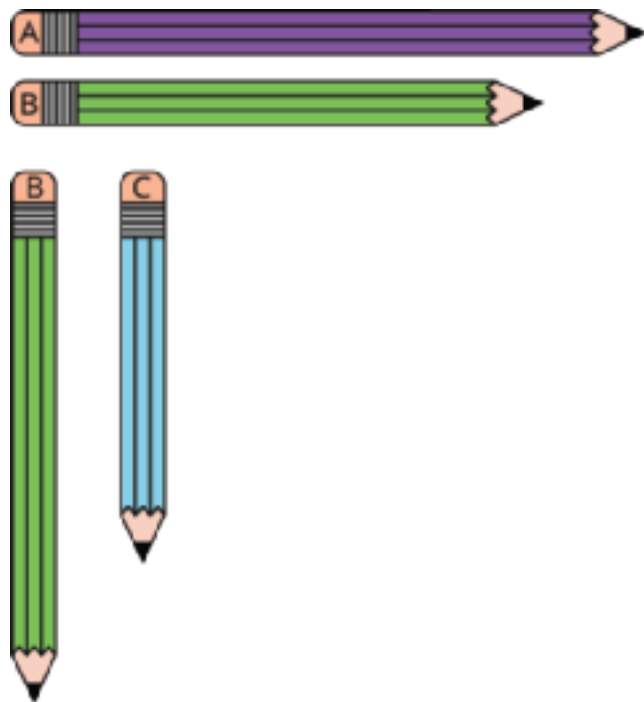
The purpose of this warm-up is to elicit the idea that we can compare objects when they are not aligned by using a third object, which will be useful when students compare the lengths of objects in a later activity. While students may notice and wonder many things about these images, comparing using a third object is the important discussion point.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?



Student Responses

Students may notice:

- The pencils are different lengths.
- Two pencils are lined up at their endpoints.

Students may wonder:

Launch

- Groups of 2
- Display the image.
- "What do you notice? What do you wonder?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- "Which pencil is longer, A or C? How do you know?" (A is longer than B and C is shorter than B, so C is shorter than A.)

- Which pencil is the longest?
- Which pencil is the shortest?

Activity 1

⌚ 15 min

Mai and Clare Walk to School

Standards Alignments

Addressing 1.MD.A.1

The purpose of this activity is for students to compare two lengths indirectly. Since a third object is not given, students choose a third object strategically and share different ways to use a third object to compare (MP5).

Students choose from a variety of objects: connecting cubes towers, pieces of string, and unsharpened pencils. As students compare the length of the paths, students may use a single tool, such as a piece of string to compare the two paths. They may mark or cut the string. Some students may choose the tower of connecting cubes and determine that breaking off or counting the cubes is a way to determine whether one length is shorter or longer than the other. Others may select and try different tools until they find one that has a length that is in between the length of the two paths.

Materials to Gather

Connecting cubes in towers of 10 and singles,
Pencils, Scissors, String

Required Preparation

- Each group of 2 needs:
 - Connecting cubes in singles and towers of 10
 - 6-inch and 10-inch piece of string
 - Unsharpened pencil
 - Scissors

Student-facing Task Statement

Who has a shorter walk to school, Clare or Mai?

Launch

- Groups of 2

How do you know?

Be ready to explain your thinking in a way that others will understand.



Student Responses

Sample response: Mai has a shorter walk to school. I made a tower of cubes that is the length of the path from Mai's house to school. Then I turned the tower so I could measure from Claire's house to school and I saw that the path was longer than my tower.

- Give students access to connecting cubes in towers of 10 and singles, string, unsharpened pencils, and scissors.
- "Clare and Mai walk to school every day. You can see their paths on the map. Who has the shorter walk? Choose a tool to use. Be ready to explain your thinking so that others will understand."

Activity

- 5 minutes: independent work time
- "Share your thinking with a partner."
- 2 minutes: partner discussion
- Monitor for students who use a single tool to compare the two paths and mark the tool to show one length, such as bending string or breaking off cubes to compare the other length.

Synthesis

- Invite previously identified students to share.
- "How was using a tool helpful to compare the lengths of the paths?" (We couldn't put the paths next to each other so it was helpful to have a tool that could be moved from one path to the other to compare.)

Advancing Student Thinking

If students use one object to match the length of Clare's path and a different object to match Mai's path, consider asking:

- "Tell me more about how you are using tools to figure out who has the shorter path."
- "How could you use one tool to figure out who has the shorter path?"

Activity 2

🕒 25 min

Will It Fit?

Standards Alignments

Addressing 1.MD.A.1

The purpose of this activity is for students to compare the length of two objects using a third object. When students decide if the teacher's desk will fit through the door or compare other large pieces of furniture, they will need to be precise about which lengths they are measuring as objects like the teacher's desk, a rug, and a bookcase, have a length, width, and in some cases a height (MP6). Next, they will need to select an appropriate third object to use to compare the lengths they have chosen. Teachers may choose to assign different questions for different groups to start with to facilitate student movement around the room. Teachers may also change any question that does not apply to their classroom.

🌐 Access for English Learners

MLR8 Discussion Supports. Synthesis: For each observation that is shared, invite students to turn to a partner and restate what they heard using precise mathematical language.

Advances: Listening, Speaking

♿ Access for Students with Disabilities

Engagement: Provide Access by Recruiting Interest. Provide choice. Invite students to decide which problem to start with and the order to complete the task.

Supports accessibility for: Attention, Social-Emotional Functioning

Materials to Gather

Materials from a previous activity

Required Preparation

- Each group needs measuring materials from the previous activity.

Student-facing Task Statement

- Will the teacher's desk fit through the door?
Show your thinking using drawings,

Launch

- Groups of 2
- Give students access to measuring

numbers, or words.

2. Will a student desk fit through the door?
Show your thinking using drawings, numbers, or words.
3. Which is longer, the bookshelf or the rug?
Show your thinking using drawings, numbers, or words.
4. Which is longer, the file cabinet or the bookshelf?
Show your thinking using drawings, numbers, or words.
5. Which is shorter, the bookshelf or the teacher's desk?
Show your thinking using drawings, numbers, or words.
6. Will the teacher's desk fit next to the bookshelf?
Show your thinking using drawings, numbers, or words.

Student Responses

Sample responses:

1. No. Even if the desk is turned it will not fit. The desk is longer than the door.
2. Yes. The string is as long as the desk and it fits through the door.
3. The bookshelf is longer than the rug. The bookshelf is longer than the string and the rug is shorter than the string.
4. The bookshelf is longer than the file cabinet. The bookshelf is longer than the string and the file cabinet is shorter than the string.
5. The teacher's desk is shorter than the bookshelf. The bookshelf is longer than the tower and the desk is shorter than the tower.
6. No. The string is the length of the space next to the bookshelf. The desk is longer than the string.

materials.

- "Have you ever seen someone move a large piece of furniture, like a couch, from one room to another? Is it easy to move big pieces of furniture? Why or why not?"
- 30 seconds: quiet think time
- Share responses.
- "I have been thinking about getting a new desk. If I do, I will have to move this desk out of the room. I am not sure if this desk will fit through the door. How can we check to see if it will fit?" (We could measure with a string.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- "You are all going to check to see if my desk will fit through the door. You are also going to compare the length of some other objects in the room."

Activity

- 15 minutes: partner work time
- Monitor for a group that measures the width of the teacher's desk and one that measures the length.

Synthesis

- Invite previously identified students to share.
- For each student, ask: "How did they compare the length of the objects? What tool did they use? What part of each object did they measure?"

Lesson Synthesis

🕒 10 min

"Today we used objects to compare other objects that could not be lined up. What was your method for picking an object to help you compare in both activities?" (I found an object in between the lengths of the objects. I found an object close to the length of one of the objects. I used string so I could make it any length.)

Lesson 4: Center Day 1

Standards Alignments

Addressing 1.NBT.B.3, 1.NBT.C.4, 1.NBT.C.5, 1.OA.C.5, 1.OA.C.6

Teacher-facing Learning Goals

- Add within 100.
- Compare addition and subtraction expressions to 20.

Student-facing Learning Goals

- Let's practice adding and subtracting.

Lesson Purpose

The purpose of this lesson is to practice adding and subtracting within 100.

In the first activity, students learn stage 3 of the How Close center. In this new stage, students add 2 two-digit numbers, trying to get as close to 100 as possible. In the second activity, students choose from previously introduced centers focused on two-digit numbers.

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Materials from previous centers: Activity 2
- Number cards 0–10: Activity 1

Materials to Copy

- How Close? Stage 3 Recording Sheet (groups of 1): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

Identify something you thought was going to go well in math class recently, but did not. What can you do to make it a success next time?

----- Begin Lesson -----

Warm-up

🕒 10 min

Number Talk: Use Tens to Add

Standards Alignments

Addressing 1.NBT.C.4

The purpose of this Number Talk is to elicit strategies and understandings students have for making ten to find sums within 50. When students notice how they can make a ten when finding the value of each expression or when they use one sum to find the value of the next sum, they look for and make use of structure and express regularity in repeated reasoning (MP7, MP8).

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $9 + 6$
- $29 + 6$
- $39 + 7$
- $39 + 9$

Student Responses

- 15: 9 and 1 is 10, and then 5 more is 15.
- 35: I used the same method as before. 29 and 1 is 30, and then 5 more is 35.
- 46: 39 and 1 is 40. $40 + 6 = 46$
- 48: It's just 2 more than the last one.

Launch

- Display one expression.
- "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

Activity

- Record answers and strategies.
- Keep expressions and work displayed.
- Repeat with each expression.

Synthesis

- "Did anyone have the same method but would explain it differently?"
- "Did anyone approach the problem in a different way?"

Activity 1

⌚ 20 min

Introduce How Close? Add to 100

Standards Alignments

Addressing 1.NBT.C.4

The purpose of this activity is for students to learn stage 3 of the How Close center. Each student picks seven cards and chooses four of them to create 2 two-digit numbers. Each student adds the numbers and the student whose sum is closest to 100 wins a point for the round.

Materials to Gather

Number cards 0–10

Materials to Copy

How Close? Stage 3 Recording Sheet (groups of 1)

Launch

- Groups of 2
- Give each group a set of number cards and recording sheets.
- “We are going to learn a new way to play How Close? Let’s play one round together.”
- Demonstrate removing any card that shows the number 10.
- “First we each take seven cards.”
- Display seven cards for you and seven for the class.
- “Then we each choose four numbers to make 2 two-digit numbers. We want to choose numbers that will have a sum as close to 100 as possible without going over.”
- Demonstrate making two-digit numbers and invite students to share what numbers they would make from the student set of cards.
- “Now we both add our numbers so we can see who has a sum closer to 100.”

- Demonstrate adding and comparing the numbers.
- “The person with the sum closer to 100 gets one point. Then you each choose four more cards so that you have seven cards to start your next round. The person who gets more points wins.”

Activity

- 10 minutes: partner work time

Synthesis

- Display seven cards.
- “What numbers would you make to get as close as possible to 100?”

Activity 2

🕒 20 min

Centers: Choice Time

Standards Alignments

Addressing 1.NBT.B.3, 1.NBT.C.4, 1.NBT.C.5, 1.OA.C.5, 1.OA.C.6

The purpose of this activity is for students to choose from activities that focus on two-digit numbers.

Students choose from any stage of previously introduced centers.

- Target Numbers
- Five in a Row
- Get Your Numbers in Order

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from:
 - Target Numbers, Stages 1–3
 - Five in a Row, Stages 1–6
 - Get Your Numbers in Order, Stage 1

Student-facing Task Statement

Choose a center.

Target Numbers



Five in a Row



Get Your Numbers in Order



Launch

- Groups of 2
- “Now you will choose from centers we have already learned.”
- Display the center choices in the student book.
- “Think about what you would like to do first.”
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 8 minutes: center work time
- “Choose what you would like to do next.”
- 8 minutes: center work time

Synthesis

- “What did you practice and get better at in your center?” (I worked on adding numbers by composing a ten.)

Lesson Synthesis

🕒 10 min

“How did you and your partner work together during centers? What went well? What can we continue to work on?”

Section B: Measure by Iterating up to 120 Length Units

Lesson 5: Measure with Connecting Cubes

Standards Alignments

Addressing	1.MD.A.1, 1.MD.A.2, 1.NBT.C.4, 1.NBT.C.5, 1.OA.C.5, 1.OA.C.6
Building Towards	1.MD.A.2

Teacher-facing Learning Goals

- Measure objects in connecting cube side lengths using connecting cube towers.
- Understand that a connecting cube tower with x cubes in it can be described as being “ x cubes long.”

Student-facing Learning Goals

- Let’s use connecting cubes to measure length.

Lesson Purpose

The purpose of this lesson is to understand that a connecting cube tower with x cubes in it can be described as being “ x cubes long” and to measure objects in connecting cube side lengths using connecting cube towers.

In previous lessons, students ordered a set of three objects by length. Students also compared lengths of objects indirectly by using a third object.

The purpose of this lesson is for students to describe lengths of objects in terms of connecting cubes. Students measure by using connecting cube towers because the units are lined up without gaps or overlaps, a concept they will explore in future lessons. In the first activity, students use connecting cube towers to measure the length of different animals. Students build towers that are exactly the same length as the animals and make a comparison statement (“The grasshopper is the same length as a tower of 7 cubes”). In the second activity, students use connecting cube towers to measure the length of more animals and describe the length as “___ cubes long.” Even though the side-length of the cube is the unit, it’s appropriate for students to describe length in terms of “ x cubes long.” This transition in language helps students understand that the length of objects can be described as a number of length units (MP6). In this lesson, the length unit is the length of a single connecting cube.

Access for:**Students with Disabilities**

- Engagement (Activity 2)

**English Learners**

- MLR8 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes: Activity 1, Activity 2
- Materials from previous centers: Activity 3

Materials to Copy

- Lengths of Creepy, Crawly Things (groups of 1): Activity 1
- More Creepy, Crawly Things (groups of 1): Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

Reflect on who participated in math class today. What assumptions are you making about those who did not participate? How can you leverage each of your students' ideas to support them in being seen and heard in tomorrow's math class?

Cool-down (to be completed at the end of the lesson)

 0 min

Unit 6, Section B Checkpoint

Standards Alignments

Addressing 1.MD.A.2

Student-facing Task Statement

Lesson observations

Student Responses

- Measure length by iterating length units.

Begin Lesson

Warm-up

⌚ 10 min

Notice and Wonder: Measure a Pencil

Standards Alignments

Addressing	1.MD.A.1
Building Towards	1.MD.A.2

The purpose of this warm-up is for students to compare lengths of objects and notice when they are longer, shorter, or equal to each other in length. While students may notice and wonder many things about these images, comparing the length is an important discussion point.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?



Launch

- Groups of 2
- Display the image.
- "What do you notice? What do you wonder?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Share and record responses.

Student Responses

Students may notice:

- The yellow tower is shorter than the pencil.
- The purple tower is longer than the yellow tower.
- The pencil and purple tower are the same length.

Students may wonder:

- How long is the pencil?
- How much longer is the purple tower than the yellow tower?

Synthesis

- “How can you describe the length of the pencil?” (The pencil is longer than the yellow cubes. The pencil is the same length as the purple cubes.)

Activity 1

🕒 15 min

Lengths of Creepy, Crawly Things

Standards Alignments

Addressing 1.MD.A.2

The purpose of this activity is for students to create a connecting cube tower that is the same length as a given image. In the activity synthesis, students transition from describing the length of an object by comparing it to another object ("The earthworm is the same length as a tower of 8 cubes.") to describing the length of an object as a measurement ("The earthworm is 8 cubes long.").

Materials to Gather

Connecting cubes

Materials to Copy

Lengths of Creepy, Crawly Things (groups of 1)

Student Responses

1. 3
2. 8
3. 4

Launch

- Groups of 2
- Give each student connecting cubes and a copy of the Instructional master.

4. 2

5. 5

Activity

- “We just saw a picture that showed a pencil that was the same length as the purple tower. Use connecting cubes to build a tower that is the same length as each creepy, crawly thing.”
- 10 minutes: partner work time
- Monitor for students who carefully line up the cubes with the endpoints of the images.

Synthesis

- Invite previously identified students to share.
- Display the image of the caterpillar.
- “How did you measure the caterpillar?” (I lined the first cube up with the end of the caterpillar. Then I added cubes until I got all the way to the other end of the caterpillar.)
- “Since the tower of 4 cubes is the same length as the caterpillar and each cube has the same length, we can say the caterpillar is 4 cubes long.”
- For each animal, invite students to say, “The _____ is ___ cubes long.”

Activity 2

⌚ 10 min

Measure More Creepy, Crawly Things

Standards Alignments

Addressing 1.MD.A.2

The purpose of this activity is for students to measure the length of images using connecting

cubes. Although students have compared the lengths of objects in previous activities, **length** is defined in this activity since it is the first time students measure and describe the length of objects as a number of same-size length units. Students determine how many connecting cube sides long each image is. They make statements such as “The grasshopper is five cubes long.” Some students may disagree on how to measure with their partner based on where they start and end the measurement, which is the focus of the activity synthesis. When students disagree with each other and explain how they decided to measure each image, they critique the reasoning of others (MP3).

Access for English Learners

MLR8 Discussion Supports. During partner work, invite students to take turns sharing their responses. Ask students to restate what they heard using precise mathematical language and their own words. Display the sentence frame: “I heard you say . . .” Original speakers can agree or clarify for their partner.

Advances: Listening, Speaking

Access for Students with Disabilities

Engagement: Provide Access by Recruiting Interest. Synthesis: Invite students to generate a list of additional examples of objects that can be measured with connecting cubes.

Supports accessibility for: Conceptual Processing, Visual-Spatial Processing

Materials to Gather

Connecting cubes

Materials to Copy

More Creepy, Crawly Things (groups of 1)

Student Responses

1. 7
2. 10
3. 9
4. 3
5. 5
6. 12

Launch

- Groups of 2
- Give each student connecting cubes and a copy of the Instructional master.
- “In the previous activity, we found the length of animals using connecting cubes. **Length** is the measure of how long an object is in same-size units without gaps or overlaps.”

Activity

- “Use connecting cubes to find the length of more creepy, crawly things. First, measure on your own. Then compare your thinking

with your partner. If you and your partner don't agree on the length, work together to come to an agreement. Complete each statement with the number that makes it true."

- 6–8 minutes: partner work time
- As students work, consider asking:
 - "How long is the ____? How do you know?"

Synthesis

- Display answers.
- "Check your measurements with these. Did you find the same measurements of length?"
- Consider asking:
 - "If you found the same measurements, what did you and your partner do to make sure you found the right measurement of the length?"
 - "If you found a different measurement, what do you think happened when you measured?"

Activity 3

🕒 15 min

Centers: Choice Time

Standards Alignments

Addressing 1.NBT.C.4, 1.NBT.C.5, 1.OA.C.5, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice adding two-digit numbers within 100. Students choose from any stage of previously introduced centers.

- How Close?

- Target Numbers
- Five in a Row

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from:
 - How Close? Stages 1–3
 - Target Numbers, Stages 1–3
 - Five in a Row, Stages 1–6

Student-facing Task Statement

Choose a center.

How Close?

$$\boxed{}\boxed{} + \boxed{}\boxed{} = \underline{}$$

Target Numbers



Five in a Row



Launch

- Groups of 2
- “Now you are going to choose from centers we have already learned.”
- Display the center choices in the student book.
- “Think about what you would like to do.”
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time

Synthesis

- “Diego and Elena are playing How Close. Diego has a sum of 91. Elena has a sum of 89. Who gets a point for being closer to 100? How do you know?”

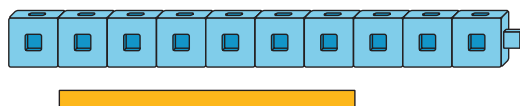
Lesson Synthesis

🕒 10 min

Display an item from the classroom with connecting cubes lined up from endpoint to endpoint or use the image from the warm-up.

“Today we measured length with connecting cubes. What is the length of the pencil? How do you know?” (It is 6 cubes long. I know because the cubes are lined up with the top of the pencil and go to the end of the pencil and I counted 6 cubes.)

Display the same item from the classroom, using a connecting cube tower with extra cubes on each end of the item. For example:



“What is the length of the rectangle? How do you know?” (It is 6 cubes long. There are extra cubes before it and after it, but those aren’t counted because they are not starting or ending on the rectangle.)

As needed, “Even though there are some extra cubes before and after the rectangle, we can still measure the length by counting the cube that begins where the rectangle begins. We can stop counting when we get to the end of the rectangle.”

Lesson 6: Measure with Paper Clips

Standards Alignments

Addressing 1.MD.A.2

Teacher-facing Learning Goals

- Measure length by iterating same-size length units without gaps or overlaps.

Student-facing Learning Goals

- Let's measure length with a new tool.

Lesson Purpose

The purpose of this lesson is to measure length by iterating same-size length units with no gaps or overlaps.

In the previous lesson, students used connecting cube towers to measure length. In this lesson, students use paper clips to measure. Since these length units are not connected, students need to make sure that there are no gaps or overlaps when they line them up. In the first activity, students use paper clips to measure the length of a rectangle and discuss how measuring with paper clips is the same and different as measuring with connecting cubes. In the second activity, students analyze three measurements of the same object and determine which is correct and why. This discussion helps deepen students understanding of length as a continuous measure of length units, not merely a count of objects in a line. In the third activity, students practice measuring different lengths using paper clips.

Access for:



Students with Disabilities

- Representation (Activity 3)



English Learners

- MLR8 (Activity 1)

Instructional Routines

Estimation Exploration (Warm-up)

Materials to Gather

- Paper clips (1-inch): Activity 1, Activity 3
- Tape (painter's or masking): Activity 3

Materials to Copy

- Measure with Paper Clips (groups of 1): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	10 min
Activity 3	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

As students measured with length units that do not connect, what evidence did you see that students understand why leaving gaps or overlapping units results in an inaccurate measurement of an object's length?

Cool-down (to be completed at the end of the lesson)

⌚ 0 min

Unit 6, Section B Checkpoint

Standards Alignments

Addressing 1.MD.A.2

Student-facing Task Statement

Lesson observations

Student Responses

Measure length by iterating length units.

----- **Begin Lesson** -----**Warm-up**

⌚ 10 min

Estimation Exploration: Length of the Desk

Standards Alignments

Addressing 1.MD.A.2

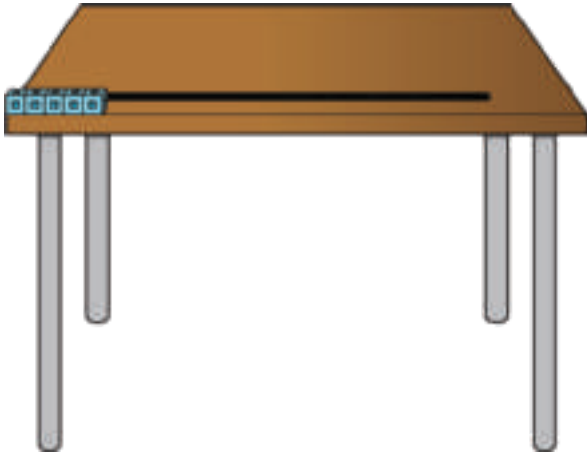
The purpose of an Estimation Exploration is to practice the skill of estimating a reasonable answer based on experience and known information.

Instructional Routines

Estimation Exploration

Student-facing Task Statement

How long is the desk?



Record an estimate that is:

too low	about right	too high

Student Responses

Sample responses:

- Too low: 6–20
- About right: 25–35
- Too high: 40–100

Launch

- Groups of 2
- Display the image.
- “What is an estimate that’s too high?” “Too low?” “About right?”
- 1 minute: quiet think time

Activity

- “Discuss your thinking with your partner.”
- 1 minute: partner discussion
- Record responses.

Synthesis

- “How do you know that 15 is an estimate that is too low?” (If we add two more towers of 5, it still won’t reach the end of the desk.)

Activity 1

🕒 10 min

Measure with Paper Clips

Standards Alignments

Addressing 1.MD.A.2

The purpose of this activity is for students to measure length by physically lining up length units that do not connect. Students discuss how measuring with paper clips is the same and different as measuring with connecting cube towers.

Access for English Learners

MLR8 Discussion Supports. Display sentence frames to support whole-class discussion comparing measuring with connecting cubes and paper clips: “____ and ____ are the same/alike because . . .”, “____ and ____ are different because . . .”

Advances: Speaking, Conversing

Materials to Gather

Paper clips (1-inch)

Materials to Copy

Measure with Paper Clips (groups of 1)

Required Preparation

- Each group of 2 needs about 30 1-inch paper clips.

Student Responses

The rectangle is 9 paper clips long.

Launch

- Groups of 2
- Give each student a copy of the Instructional master and a handful of 1-inch paper clips.

Activity

- “We have been measuring length with connecting cubes. Now we are going to use a different object to measure. Measure the length of this rectangle using paper clips. When each partner has measured, compare your thinking with your partner.”
- 4 minutes: partner work time
- Monitor for a student who measures without gaps or overlaps.

Synthesis

- Invite previously identified students to share.
- “How is measuring with paper clips the same and different as measuring with

connecting cubes?” (Paper clips don’t connect. You need to be careful about laying paper clips down, they move easily. You still start at one endpoint and end at the other endpoint.)

Advancing Student Thinking

If both partners agree on a measurement other than 9 paper clips, have them compare their thinking with another group and consider asking:

- “Why do you think your number of paper clips is different?”
- “What is different about the way you used the paper clips to measure?”

Activity 2

🕒 10 min

Measure Our Workbook

Standards Alignments

Addressing 1.MD.A.2

The purpose of this activity is for students to analyze representations of length measurements. Students determine that two of the measurements are inaccurate because there are gaps between length units or some length units overlap. Students identify that in order to measure accurately, they need to lay the length units directly next to each other, touching, but not overlapping (MP6).

Student-facing Task Statement

Circle whether you agree or disagree with each student.

Explain why you agree or disagree.

1.

Launch

- Groups of 2

Activity

- Read the task statement.
- 5 minutes: partner work time

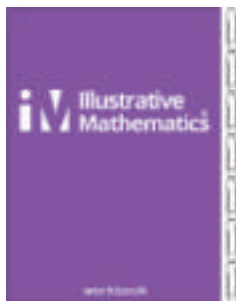


Andre says that his student workbook is 5 paper clips long.

Agree Disagree

I _____ because

2.



Tyler says the workbook is 7 paper clips long.

Agree Disagree

I _____ because

3.



Clare says the workbook is 8 paper clips

- Monitor for students who disagree with Andre's and Clare's measurement and can explain why they are inaccurate.

Synthesis

- "What advice would you give Andre and Clare the next time they measure?" (Place each paper clip end to end. Make sure they do not overlap and that there are no gaps between them.)

long.

Agree Disagree

I _____ because

Student Responses

Sample responses:

1. I disagree because Andre has spaces between his paper clips.
2. I agree because Tyler laid the paper clips next to each other in a neat line. He measured from one end of the book to the other.
3. I disagree because Clare had paper clips bunched up in some places. They overlapped.

Activity 3

🕒 20 min

Measure Strips of Tape

Standards Alignments

Addressing 1.MD.A.2

The purpose of this activity is for students to measure the length of tape strips using paper clips as the length unit. Students apply what they have learned in the previous two activities to measure accurately.

Set up tape strips of the designated lengths around the classroom, labeled with letters (A-F). Assign each group a tape to start with and then have them rotate to a new tape, as time allows.

Access for Students with Disabilities

Representation: Internalize Comprehension. Synthesis: Invite students to identify which details were most important in accurately measuring the strips of tape. Display the sentence frame, “The next time I measure an object, I will pay attention to . . .”

Supports accessibility for: Memory, Attention

Materials to Gather

Paper clips (1-inch), Tape (painter's or masking)

Required Preparation

- Put strips of tape of the designated lengths on the floor. Label each strip. There should be one strip of tape per group.
 - Tape A: 18 inches
 - Tape B: 16 inches
 - Tape C: 12 inches
 - Tape D: 20 inches
 - Tape E: 22 inches
 - Tape F: 25 inches

Student-facing Task Statement

Use paper clips to measure each strip of tape.

1. The length of Tape A is _____ paper clips.
2. The length of Tape B is _____ paper clips.
3. The length of Tape C is _____ paper clips.
4. The length of Tape D is _____ paper clips.
5. The length of Tape E is _____ paper clips.
6. The length of Tape F is _____ paper clips.

Student Responses

1. 18
2. 16
3. 12
4. 20

Launch

- Groups of 2–4
- Give each group paper clips.

Activity

- “There are strips of tape around the classroom. Work with your partner to measure the length of each strip using paper clips. Complete each statement with the number of paper clips that make it true.”
- 10 minutes: partner work
- Monitor for groups who measure Tape C without gaps or overlaps.

5. 22

6. 25

Synthesis

- Invite previously identified students to share.
- “How do you know that you measured Tape C precisely?” (The paper clips had no gaps and no overlaps, the paper clips started at the beginning of the tape and went to the end of the tape.)
- “Both groups made sure there were no gaps or overlaps with their paper clips. Both groups said Tape C is 12 paper clips long.”

Advancing Student Thinking

If students find measurements other than the precise measurement for each tape, consider asking:

- “Can you show me how you used the paper clips to measure this tape strip?”
- “How did you use the advice we gave Andre and Clare when you were measuring?”

Lesson Synthesis

⌚ 10 min

Display Tape C.

“Today we measured length with paper clips. We just heard two groups explain how they used their paper clips to measure Tape C. Priya also measured Tape C and says it is 10 paper clips long. Do you think Priya can be correct? Why or why not?” (No. We measured Tape C and we all got a length of 12 paper clips. The line can’t be 12 paper clips long for us and 10 for her.)

Lesson 7: Measure Length with Different Length Units

Standards Alignments

Addressing 1.MD.A.2

Teacher-facing Learning Goals

- Measure lengths of objects using different length units.
- Understand that the number associated with a length depends on the chosen length unit.

Student-facing Learning Goals

- Let's measure the same object using different length units.

Lesson Purpose

The purpose of this lesson is for students to measure lengths of objects using different length units and understand that the number associated with a length depends on the chosen unit.

In previous lessons, students were given a length unit to use to measure the lengths of different objects. In this lesson, students choose different length units to measure the same object and describe what they notice about the measurement of an object when different length units are used. In the first activity, students measure a strip of tape on the floor with three different length units. They see that they get different measurements depending on the unit they use. In the second activity, students are presented with examples of how different students measured the length of a shoe. Students determine if the shoe was measured correctly or incorrectly and why. Students learn that in order to describe the length, one needs to choose a single length unit. In the lesson synthesis, students evaluate the appropriateness of different units to measure different objects.

Access for:



Students with Disabilities

- Engagement (Activity 1)



English Learners

- MLR8 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Base-ten blocks: Activity 1

- Connecting cubes: Activity 1
- Paper clips (1-inch): Activity 1
- Paper clips (2-inch): Activity 1
- Tape (painter's or masking): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

Who got to do math today in class and how do you know? Identify the norms or routines that allowed those students to engage in mathematics. How can you adjust these norms and routines so all students do math tomorrow?

Cool-down (to be completed at the end of the lesson)

🕒 5 min

The Length of a Shoe

Standards Alignments

Addressing 1.MD.A.2

Student-facing Task Statement



Priya says that the length of the shoe is 5 paper clips.

Is her measurement accurate? Why or why not?

Student Responses

Sample responses:

- No because there are gaps in between the paper clips.
- No because the edges of the paper clips are not touching.

Begin Lesson

Warm-up

🕒 10 min

Notice and Wonder: Large Cubes and Small Cubes

Standards Alignments

Addressing 1.MD.A.2

This warm-up prompts students to consider the same object being measured with different length units to set students up to measure with different units in the next activity.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?

What do you wonder?



Launch

- Groups of 2
- Display the image.
- "What do you notice? What do you wonder?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Share and record responses.

Student Responses

Students may notice:

- I notice that there are cubes that are different sizes.
- I notice that the black marker is 6 connecting cubes long.
- I notice that the green marker is 12 small cubes long.

Students may wonder:

- Are the markers the same length?
- How can the markers be both 6 and 12?

Synthesis

- “Can anyone restate ____’s idea?”

Activity 1

🕒 20 min

Measure With Different Objects

Standards Alignments

Addressing 1.MD.A.2

The purpose of this activity is for students to measure the same length using three different length units. Students choose which units they would like to use. When groups compare their measurements, they notice that although they measured the same length, they got different measurements. They consider why this could be and determine that when they use a different size length unit, they get a different number to describe the length. Some students may notice that the number of units needed depends on the size of each individual length unit, but this is not a discussion point until grade 2.

🕒 Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Invite students to generate a list of shared expectations for group work. Record responses on a display and keep visible during the activity.

Supports accessibility for: Social-Emotional Functioning, Organization

Materials to Gather

Base-ten blocks, Connecting cubes, Paper clips (1-inch), Paper clips (2-inch), Tape

(painter's or masking)

Required Preparation

- Create sets of 30 connecting cubes, 50 base-ten cubes (centimeter cubes), twenty 2-inch paper clips, and twenty 1-inch paper clips for each group.
- Put 18-inch strips of tape on the floor for each group.

Student-facing Task Statement

Circle the **3** objects you will use:

connecting cubes small cubes
small paper clips large paper clips

Measure the length of Jeison's foot with each object you chose and fill in the table.

object	length

Student Responses

Sample response:

object	length
connecting cubes	24 connecting cubes
small cubes	45 small cubes
small paper clips	18 small paper clips
large paper clips	9 large paper clips

Launch

- Groups of 2–4
- Give each group access to the different length units.
- “Who wears the biggest shoes in your family?”
- Share responses.
- “How long do you think your shoes will be when you are grown up?”
- Share responses.
- “A man named Jeison Orlando Rodriguez Hernandez holds the record for having the longest feet in the world. He has to have his shoes specially made because stores don't sell shoes big enough.”

Activity

- “There are strips of tape on the floor that show the length of Jeison's foot. You will measure the length of his foot using different objects.”
- Read the task statement.
- 12 minutes: partner work time
- “Compare your measurements with another group. What do you notice?”
- 2 minutes: small group discussion

Synthesis

- “What did you notice when you measured the length of Jeison's foot using different objects?”

- If needed, ask, “Why did we get different numbers when we used different objects?” (The objects we used had different lengths. Some were shorter and some were longer. We used more small cubes to measure the length than any other object.)

Activity 2

🕒 15 min

Measure the Teacher’s Shoe

Standards Alignments

Addressing 1.MD.A.2

The purpose of this activity is for students to use what they have learned about measuring length to determine whether measurements are accurate. Students understand that they need to use same-size units to be precise in their measurements (MP6).

🌐 Access for English Learners

MLR8 Discussion Supports. Activity: Display sentence frames to support partner discussion: “I think the measurement is accurate because...” and “I think the measurement is not accurate because...”
Advances: Speaking, Conversing

Student-facing Task Statement

1. Andre measured his teacher’s shoe and said it was 15 connecting cubes long.



Launch

- Groups of 2

Activity

- Read the task statement.
- 8–10 minutes: partner work time
- Monitor for students who can explain whose measurements are accurate and whose are not accurate and why.

Is his measurement accurate?

Why or why not?

2. Jada measured her teacher's shoe and said it was 12 connecting cubes long.



Is her measurement accurate?

Why or why not?

3. Clare measured her teacher's shoe and said it was 30 small cubes long.



Is her measurement accurate?

Why or why not?

4. Kiran measured his teacher's shoe and said it was 19 cubes long.



Is his measurement accurate?

Synthesis

- Display the image for Jada's measurement.
- "Is Jada's measurement accurate? Why or why not?" (It is not accurate because there are gaps between some of the cubes.)
- Display the image for Kiran's measurement.
- "Is Kiran's measurement accurate? Why or why not?" (Kiran's measurement is not accurate because the cubes are different sizes.)
- "What could Kiran change to make his measurement accurate?" (He could use all connecting cubes or all the little cubes, instead of using some of each.)
- "When we measure a length with objects it is important that each object has the same length."

Why or why not?

Student Responses

Sample responses:

1. Yes. Andre used connecting cubes to measure the shoe. He used the same size cubes and measured accurately.
2. No. Jada used connecting cubes to measure, but she has gaps between her units. Her measurement is not accurate.
3. Yes. Clare used small cubes to measure. She used all the same size cubes. Her measurement is accurate.
4. No. Kiran used different size cubes so he did not get an accurate measurement.

Advancing Student Thinking

If students say that Clare's measurement is inaccurate because she did not use connecting cubes or because the measurement is not 15, encourage students to tell you more about what they mean. Consider asking:

- "How is the way Clare measured like how we measured objects in the last activity?"
- "Did Clare measure the entire length of the shoe with the small blocks?"
- "How are the small blocks the same? How are they different?"

Lesson Synthesis

🕒 10 min

Display the images that show Andre's measurement of his teacher's shoe from the previous activity.

"Today we looked at how other students measured their teacher's shoe. We decided that Kiran's measurement of 19 cubes was not accurate because he used some connecting cubes and some small cubes."

"Kiran says that Andre's measurement must not be accurate either because he used two different cubes."

"What do you think Kiran means? Do you agree with his argument about Andre's measurement?" (I think he means there are 2 different colors. I disagree. The different colors do not matter. Each

connecting cube has the same length. Each cube is the same size and Andre did not have any gaps or overlaps.)

As time permits, display Clare's measurement and ask, "What about Clare's measurement? She used many different colors of small cubes. Is her measurement of 30 small cubes accurate?" (Yes, it's accurate. The color isn't what matters. What matters is that each cube has the same length and that there are no gaps or overlaps.)

Complete Cool-Down

Response to Student Thinking

Students say Priya's measurement is accurate.

Next Day Support

- Launch Warm-up or Activity 1 by highlighting important ideas from previous lessons.

Lesson 8: Groups Up to 110

Standards Alignments

Addressing 1.MD.A.2, 1.NBT.A.1

Teacher-facing Learning Goals

- Measure length and count the number of length units for quantities up to 110.
- Read numbers to 110.

Student-facing Learning Goals

- Let's measure lengths that are longer than 100 cubes.

Lesson Purpose

The purpose of this lesson is to measure length and count and read numbers to 110.

In previous units, students counted quantities and read and wrote numbers up to 99. In previous lessons, students measured the length of objects.

The purpose of this lesson is for students to count a quantity between 100 and 110. In the first activity, students measure how tall they are using base-ten cubes and represent their work in a way that makes sense to them. In the second activity, students make sense of representations of larger numbers. In the lesson synthesis, students learn that 10 tens is 100.

Access for:

Students with Disabilities

- Action and Expression (Activity 1)

English Learners

- MLR8 (Activity 1)

Instructional Routines

Choral Count (Warm-up)

Materials to Gather

- Base-ten blocks: Activity 1
- Scissors: Activity 1
- String: Activity 1

Materials to Copy

- Representations of Numbers Over 80 (groups of 2): Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	25 min
Activity 2	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

Reflect on times you observed students listening to one another's ideas today in class. What norms would help each student better attend to their classmates' ideas in future lessons?

Cool-down (to be completed at the end of the lesson)

⌚ 0 min

Unit 6, Section B Checkpoint

Standards Alignments

Addressing 1.MD.A.2, 1.NBT.A.1

Student-facing Task Statement

Lesson observations

Student Responses

- Measure length by iterating length units.
- Read and write numbers 100–120.
- Count a group of 100–120 objects and represent it with a written number.

----- **Begin Lesson** -----**Warm-up**

⌚ 10 min

Choral Count: Above 100

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this Choral Count is to invite students to practice counting by 1 from 80 to 110 to prepare them to count large groups of objects later in the lesson. Students will develop an understanding of three-digit numbers and a hundred as a unit in grade 2.

Instructional Routines

Choral Count

Student Responses

Record the count in columns, with the first number in each column being a multiple of 10.

Sample responses:

- The number in the ones place in each column goes 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.
- After 99 there are three digits in the numbers.
- We counted 31 numbers because there are three columns of 10 and one more number.

Launch

- "Let's count from 80 to 110."
- Record as students count.
- Stop counting and recording at 110.

Activity

- "What patterns do you see?"
- 1–2 minutes: quiet think time
- Record responses.

Synthesis

- "What do you notice about this choral count?" (When we get to 100, there are 3 digits. Counting starts all over again at 1, but now it's with 100.)

Activity 1

🕒 25 min

Long Lengths with Small Cubes

👤 ↔ 👤 PLC Activity

Standards Alignments

Addressing 1.MD.A.2, 1.NBT.A.1

The purpose of this activity is to measure a length that is over 100 length units long and count the number of units using grouping methods. Some students may count by 1, others may organize

their cubes into groups of 10. Although some students may attempt to represent their counts with a written number, the emphasis is representing the length of the string with a drawing. Students will identify written numbers in the next activity and practice writing them in the next lesson.

When students look for efficient ways to count the cubes, such as grouping them by tens, they look for and make use of base-ten structure (MP7).

Access for English Learners

MLR8 Discussion Supports. Synthesis: For each method that is shared, invite students to turn to a partner and restate what they heard using precise mathematical language.

Advances: Listening, Speaking

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan a method with their groups, for measuring the length of the string and counting the cubes.

Supports accessibility for: Organization, Attention, Social-Emotional Functioning

Materials to Gather

Base-ten blocks, Scissors, String

Required Preparation

- Each group needs 120 base-ten cubes.

Student-facing Task Statement

Represent your measurement using drawings, numbers, or words.

Student Responses

Sample response:

Student draws 11 tens and 2 ones.

Launch

- Groups of 3–4
- Give each group 120 base-ten cubes, string, and scissors.
- “Today we are going to measure the height of one of your group members. Choose whose height you will measure and cut a piece of string that is the same length as their height.”
- 2 minutes: small-group work

Activity

- “Measure the length of the string using

small cubes. Represent the measurement using drawings, numbers, or words.”

- 15 minutes: partner work time
- Monitor for groups who:
 - have measurements between 100–110 cubes
 - created groups of ten to organize the cubes

Synthesis

- Invite previously identified students to share.
- “How did you count the cubes?” (We organized them into groups of 10. When we couldn’t make any more groups of 10 we left the singles. Then we counted the groups by 10 and counted the singles last.)

Advancing Student Thinking

If students try to draw each cube in a straight line to represent their count and begin to run out of space, consider asking:

- “How are you planning to represent your measurement?”
- “How was this activity like counting collections? How do you represent your count when it’s a large collection?”

Activity 2

🕒 15 min

Representations of Large Numbers

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this activity is for students to match representations of tens and ones to written

numbers up to 100. Students may count by tens and ones. Some students may see that 10 tens can be grouped to make 100. After they count, they match the written number to the picture.

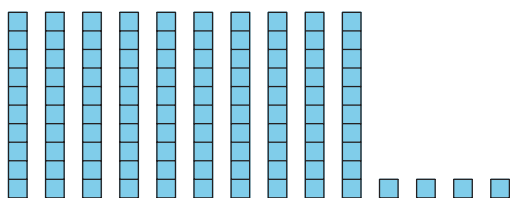
Materials to Copy

Representations of Numbers Over 80 (groups of 2)

Required Preparation

- Create a set of cards from the backline master for each group of 2.

Student-facing Task Statement



Student Responses

Cards A and K

Cards B and I

Cards C and L

Cards D and O

Cards E and P

Cards F and J

Cards G and M

Cards H and N

Launch

- Groups of 2
- Give each group a set of cards.
- Display the student workbook page.
- “This is how many cubes it took to measure Jada’s height. What do you notice about this representation?” (There are groups of ten and singles. There are 10 groups of 10 and 4 singles. There are 104 cubes.)
- “Jada’s height is 104 small cubes. This is how we write 104.”
- Display the numeral 104.

Activity

- “You are going to look at more representations of cubes used to measure students’ height. Match each picture to the number that represents it.”
- 8 minutes: partner work time

Synthesis

- Display all cards that show 100 or more.
- “What do you notice about these representations?” (They all have 10 tens. There are more than 100 cubes.)

Lesson Synthesis

🕒 10 min

"Today we learned that after measuring a long length with cubes, you can group the cubes to make counting the length easier."

Display the card that shows 10 tens.

"How many cubes are there?" (100, 10 tens, 10 towers of ten)

"Let's count the towers by ten. When we count 10 tens, we get 100."

Lesson 9: Write Numbers to 120

Standards Alignments

Addressing 1.MD.A.2, 1.NBT.A.1

Teacher-facing Learning Goals

- Measure length and determine an efficient way to count the number of length units up to 120.
- Read and write numbers to 120.

Student-facing Learning Goals

- Let's count, write, and read numbers up to 120.

Lesson Purpose

The purpose of this lesson is to count, read, and write numbers up to 120 in a measurement context.

In previous lessons, students learned how to count up to 110 objects and connected written numbers to quantities.

In this lesson, students measure a length between 95 and 120 length units long and represent their count using numbers. Then, students create a poster to show a drawing of their count, without including the written number. When students participate in a gallery walk to view each poster, they record the numbers represented.

Access for:



Students with Disabilities

- Representation (Activity 1)



English Learners

- MLR2 (Activity 1)

Instructional Routines

Choral Count (Warm-up), MLR7 Compare and Connect (Activity 2)

Materials to Gather

- Base-ten blocks: Activity 1
- Tape (painter's or masking): Activity 1
- Tools for creating a visual display: Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

What connections did students make between towers of ten and singles or base-ten diagrams and the written numbers up to 120? What questions did you ask to help make the connections more visible?

Cool-down (to be completed at the end of the lesson)

⌚ 5 min

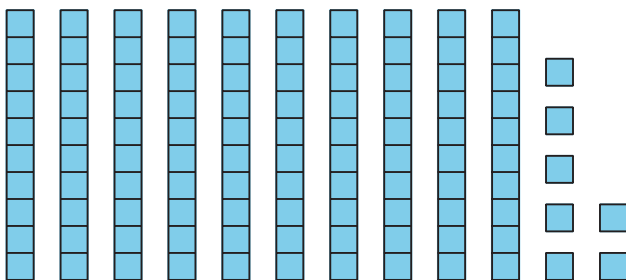
How Many Cubes?

Standards Alignments

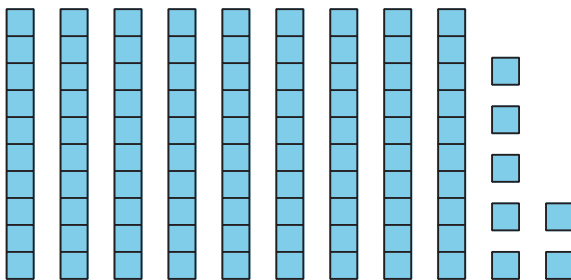
Addressing 1.NBT.A.1

Student-facing Task Statement

How many cubes are there?

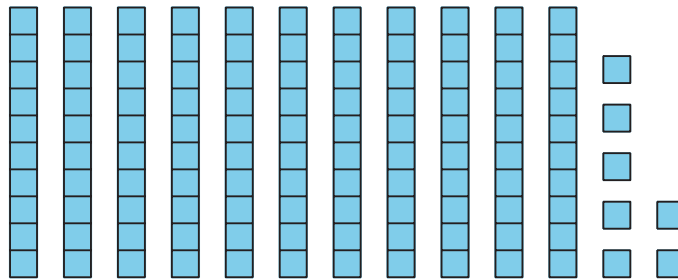


1.



2.

3.



Student Responses

1. 107
2. 97
3. 117

Begin Lesson

Warm-up

🕒 10 min

Choral Count: Numbers Up to 120

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this Choral Count is to invite students to practice counting by 1 from 90 to 120 and notice patterns in the count. Keep the record of the count displayed for students to reference throughout the lesson. When students notice the patterns in the digits after counting beyond 99 and explain the patterns based on what they know about the structure of the base-ten system, they look for and express regularity in repeated reasoning (MP7, MP8). Students will develop an understanding of a hundred as a unit and three-digit numbers in grade 2.

Instructional Routines

Choral Count

Student Responses

Record the count in columns, with the first number in each column being a multiple of 10.

Sample responses:

- The digits in the ones place in each column goes up from 0 (0, 1, 2, 3, 4, 5, 6, 7, 8, 9).
- There are 2 digits up to 99 and there are 3 digits starting at 100.
- There's a 1 as the first digit when we count over 100.

Launch

- "Count by 1, starting at 90."
- Record as students count.
- Stop counting and recording at 120.

Activity

- "What patterns do you see?"
- 1-2 minutes: quiet think time
- Record responses.

Synthesis

- "What do you notice about the numbers we counted?" (Some only have two digits and some have three. After 100, I see the numbers 1–20 again.)

Activity 1

🕒 15 min

Measure Animal Lengths

Standards Alignments

Addressing 1.MD.A.2, 1.NBT.A.1

The purpose of this activity is to count groups of between 95 and 120 length units and represent the count using representations of tens and ones. Each group measures a strip of tape using base-ten cubes. They determine how to count the cubes and create a representation. Students may group their cubes and count by tens and ones. Some students may group 10 tens as 100.

Access for English Learners

MLR2 Collect and Display. Circulate, listen for and collect the language students use as they measure their animals. On a visible display, record words and phrases such as: lengths, tower, cubes, measure, long. Invite students to borrow language from the display as needed, and update it throughout the lesson.

Advances: Speaking, Reading

Access for Students with Disabilities

Representation: Internalize Comprehension. Begin by asking, “Does this situation remind anyone of something we have done before? How so?”

Supports accessibility for: Conceptual Understanding, Memory, Attention

Materials to Gather

Base-ten blocks, Tape (painter's or masking)

Required Preparation

- Put strips of tape on the floor, 2–3 of each length. Label with the animal name. There should be one length of tape for each group of 3.
 - Beaver: 95 centimeters
 - Snake: 105 centimeters
 - Giant Anteater: 120 centimeters
 - Dog: 110 centimeters
 - Raccoon: 100 centimeters
 - Red Fox: 115 centimeters
- Make bags or buckets of about 125 base-ten cubes per group of 3.

Student-facing Task Statement

Animal: _____

Length: _____

Show your thinking using drawings, numbers, or words.

Student Responses

Sample response: Draws 11 towers of 10 and 5

Launch

- Groups of 3
- Give each group base-ten cubes.
- Assign each group to a strip of tape.

Activity

- “Around the classroom are strips of tape that show the lengths of different animals. Each group will measure one animal and

singles. Circles 10 of the towers.

determine how to count the cubes. Show your thinking using drawings, numbers, or words."

- 8 minutes: small-group work time

Synthesis

- Display 11 towers of 10 and 3 single cubes.
- "These are the cubes used to measure a different animal. How can we figure out the length of this animal?"

Advancing Student Thinking

If students write the measurement as a number of tens and ones (10 tens 5 ones), consider asking:

- "How could you write this number just using digits?"
- "How would you say the number that matches the total number of cubes?"
- "Which number from our choral count matches the number of cubes?"

Activity 2

🕒 20 min

Write Numbers to Represent Animal Lengths

Standards Alignments

Addressing 1.MD.A.2, 1.NBT.A.1

The purpose of this activity is for students to write numbers between 95 and 120. Groups create posters that show a drawing of how they counted their animal measurements from the last activity. Groups should not write a number for the final measurement on the poster. Students do a gallery walk to interpret each representation and record the count with a number in their workbooks. Group members then compare their counts and written numbers.

When students look at the different representations and determine the length of each animal, they may notice that the representation may help to accurately find the value. For example,

students may draw groups of 10 cubes rather than every individual cube (MP7).

This activity uses *MLR7 Compare and Connect*. Advances: *representing, conversing*.

Instructional Routines

MLR7 Compare and Connect

Materials to Gather

Tools for creating a visual display

Student-facing Task Statement

For each animal, write the number of cubes that represent its length.

1. The beaver is _____ long.
2. The dog is _____ long.
3. The giant anteater is _____ long.
4. The raccoon is _____ long.
5. The red fox is _____ long.
6. The snake is _____ long.



Student Responses

1. Beaver: 95 cubes
2. Dog: 110 cubes
3. Giant Anteater: 120 cubes
4. Raccoon: 100 cubes
5. Red Fox: 115 cubes
6. Snake: 105 cubes

Launch

- Groups of 3
- Give each group tools for creating a visual display.

Activity

MLR7 Compare and Connect

- "Create a poster to show how you counted the cubes you used to measure the length of the animal in the measuring animals activity. Do not write the number of cubes your animal measured on your poster."
- 5 minutes: group work time
- "Now we will do a gallery walk to see different representations of your measurements. As you look at each poster, use the representation to determine the length of the animal. Write the number of cubes that represents its length in your book."
- 7 minutes: gallery walk

Synthesis

- Display the snake and giant anteater posters.
- "How do I write the number that represents the length of the snake?"

- “Where do you see 100 in this poster?
Where do you see 5?”
- Repeat for giant anteater.

Lesson Synthesis

🕒 10 min

“Today we wrote numbers up to 120. Let’s count by one. Start at 100. I will write each number we say.”

Record the count.

“How would you explain writing numbers from 100 to 120 to a friend?” (There are 3 digits. The first digit is a 1. The pattern of writing numbers from 1–20 is the same.)

----- Complete Cool-Down -----

Response to Student Thinking

Students write numbers other than 107, 97, and 117.

Next Day Support

- Create a poster of numbers 100–120 for students to reference.

Lesson 10: Center Day 2

Standards Alignments

Addressing 1.MD.A.2, 1.NBT.C.4, 1.NBT.C.5, 1.OA.C.5, 1.OA.C.6

Teacher-facing Learning Goals

- Add within 100.
- Measure length by iterating same-size length units without gaps or overlaps.

Student-facing Learning Goals

- Let's measure the length of objects.

Lesson Purpose

The purpose of this lesson is for students to practice measuring and adding within 100.

Students learn a new center called Estimate and Measure, where they choose an object and a length unit to measure it with. They estimate the length of the object before measuring to find the actual length. Students then choose from previously introduced centers focusing on adding within 100.

Access for:



Students with Disabilities

- Action and Expression (Activity 2)



English Learners

- MLR8 (Activity 2)

Instructional Routines

True or False (Warm-up)

Materials to Gather

- Base-ten blocks: Activity 1
- Connecting cubes: Activity 1
- Materials from previous centers: Activity 2
- Objects of various lengths: Activity 1
- Paper clips (2-inch): Activity 1

Materials to Copy

- Estimate and Measure Stage 1 Recording Sheet (groups of 1): Activity 1

Lesson Timeline

Warm-up

10 min

Teacher Reflection Question

As students worked together today, where did you see evidence of the mathematical

Activity 1	20 min	community established over the course of the school year?
Activity 2	20 min	
Lesson Synthesis	10 min	

----- Begin Lesson -----

Warm-up

⌚ 10 min

True or False: Adding within 100

Standards Alignments

Addressing 1.NBT.C.4

The purpose of this True or False is to elicit strategies students have for using place value understanding to add. These understandings help students deepen their understanding of the properties of operations and will be helpful later when students add within 100.

Instructional Routines

True or False

Student-facing Task Statement

Is each statement true or false?
Be prepared to explain your reasoning.

- $24 + 30 = 44$
- $24 + 40 = 64$
- $30 + 45 = 75$
- $32 + 45 = 76$

Student Responses

- False: 2 tens and 3 tens would be 5 tens. That's more than 44.

Launch

- Display one statement.
- "Give me a signal when you know whether the statement is true and can explain how you know."
- 1 minute: quiet think time

Activity

- Share and record answers and strategies.
- Repeat with each equation.

- True: $20 + 40 = 60$, $4 + 0 = 4$
- True: $30 + 40 = 70$, $0 + 5 = 5$
- False: $30 + 40 = 70$, $2 + 5 = 7$

Synthesis

- “Some students said they added the tens to the tens and the ones to the ones. Think about using this method when you add during center time today.”

Activity 1

🕒 20 min

Introduce Estimate and Measure, Choose Your Unit

Standards Alignments

Addressing 1.MD.A.2

The purpose of this activity is for students to learn a new center called Estimate and Measure, Choose Your Unit. Students choose an object and a familiar unit to measure it with. They estimate the measurement of the object and then measure to find the actual length to the nearest whole length unit.

Materials to Gather

Base-ten blocks, Connecting cubes, Objects of various lengths, Paper clips (2-inch)

Materials to Copy

Estimate and Measure Stage 1 Recording Sheet (groups of 1)

Required Preparation

- Gather or identify objects of various lengths that are less than 20 connecting cubes long (pencils, markers, books, glue, scissors, shoe, tape dispenser).

Launch

- Groups of 2
- Give each group access to objects they can measure as well as various measuring units.
- “We are going to learn a new center called Estimate and Measure, Choose Your Unit. In this activity, you choose an object that you will measure. Then you choose the unit you would like to use to measure the object.

Record the object and the unit you will use to measure. Before measuring the object, make an estimate of the object's length. Record your estimate. Then measure the object and record the actual measurement."

Activity

- 15 minutes: partner work time

Synthesis

- Display an object measured with gaps between some of the length units.
- "What feedback could you give to someone who measured like this?" (There should not be any gaps.)
- Display an object measured with different length units such as base-ten cubes and connecting cubes.
- "What feedback could you give to someone who measured like this?" (You have to use the same object to measure the entire length of the object. You can't use small and big cubes, you have to choose one.)

Activity 2

🕒 20 min

Centers: Choice Time

Standards Alignments

Addressing 1.NBT.C.4, 1.NBT.C.5, 1.OA.C.5, 1.OA.C.6

The purpose of this activity is for students to choose from activities that focus on adding within 100. Students choose from any stage of previously introduced centers.

- How Close?

- Target Numbers
- Five in a Row

Access for English Learners

MLR8 Discussion Supports. Synthesis: Provide students with the opportunity to rehearse what they will say with a partner before they share with the whole class.

Advances: Speaking

Access for Students with Disabilities

Action and Expression: Develop Expression and Communication. Provide access to a variety of tools such as connecting cubes in towers of 10 and singles and mini-whiteboards.

Supports accessibility for: Attention, Organization

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from:
 - How Close? Stages 1–3
 - Target Numbers, Stages 1–3
 - Five in a Row, Stages 1–6

Student-facing Task Statement

Choose a center.

How Close?

$$\begin{array}{|c|c|} \hline \square & \square \\ \hline \end{array} + \begin{array}{|c|c|} \hline \square & \square \\ \hline \end{array} = \underline{\quad}$$

Target Numbers



Launch

- Groups of 2
- “Now you will choose from centers we have already learned.”
- Display the center choices in the student book.
- “Think about what you would like to do first.”
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.

Five in a Row



- 8 minutes: center work time
- "Choose what you would like to do next."
- 8 minutes: center work time

Synthesis

- "What method of adding did you use most today?" (I added tens to tens and ones to ones. I composed a ten.)

Lesson Synthesis

🕒 10 min

"How did you and your partner work together during centers? What went well? What can we continue to work on?"

Section C: All Kinds of Story Problems

Lesson 11: How Long Are Our Shoes?

Standards Alignments

Addressing 1.MD.A.2, 1.OA.A.1, 1.OA.A.2, 1.OA.B.4, 1.OA.C.6

Teacher-facing Learning Goals

- Use addition and subtraction to solve story problems about measurement.

Student-facing Learning Goals

- Let's solve story problems about measurement.

Lesson Purpose

The purpose of this lesson is for students to use addition and subtraction to solve story problems about measurement.

In previous units, students solved Add To, Take From, Put Together, Take Apart, and Compare story problems with unknowns in different positions and represented their thinking using drawings, numbers, or words. Students also wrote equations. In a previous section, students iterated length units to measure the length of objects.

In this lesson, students solve story problems about measurement. Students revisit familiar Put Together Result Unknown, Take Apart Result Unknown, and Compare Difference Unknown story problems in measurement contexts. When they make sense of measurements to solve different kinds of problems, students reason abstractly and quantitatively (MP2).

Access for:



Students with Disabilities

- Representation (Activity 2)



English Learners

- MLR6 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and

singles: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

Think about which students haven't shared their methods in class lately. Were there missed opportunities to highlight their thinking during recent lessons? How can you take advantage of those opportunities when they arise?

Cool-down (to be completed at the end of the lesson)

🕒 5 min

Measure Shoes

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Priya's shoe is 6 cubes long.

Her teacher's shoe is 13 cubes long.

How much longer is the teacher's shoe than Priya's shoe?

Show your thinking using drawings, numbers, words, or equations.

Student Responses

7 cubes. Sample responses:

- $13 - 6 = 7$, $10 - 3 = 7$
- counts back 6 from 13

----- Begin Lesson -----

Warm-up

🕒 10 min

Notice and Wonder: Length of a Shoe

Standards Alignments

Addressing 1.MD.A.2

The purpose of this warm-up is to elicit the idea of measuring length with connecting cubes, which prepares students to measure their own shoes and solve story problems about their measurements in the next activity.

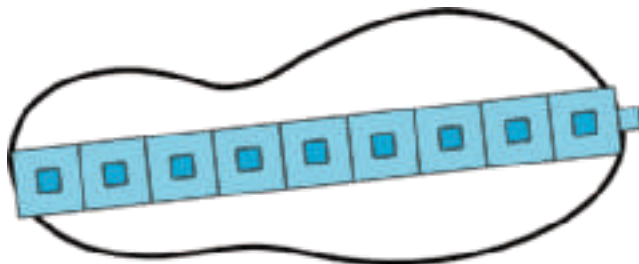
Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?

What do you wonder?



Student Responses

Students may notice:

- It's the outline of a shoe.
- The cubes measure the longest part of the shoe, from toe to heel.
- The length of the shoe is 9 connecting cubes.

Students may wonder:

- Whose shoe is that?
- How many cubes long is my shoe?
- Are any of our shoes the same length?

Launch

- Groups of 2
- Display the image.
- "What do you notice? What do you wonder?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- "Now you are going to get a chance to measure the length of your own shoe."

Activity 1

🕒 20 min

The Length of Our Shoes

Standards Alignments

Addressing 1.MD.A.2, 1.OA.A.1, 1.OA.B.4, 1.OA.C.6

The purpose of this activity is for students to measure the length of their shoe using connecting cubes and solve a Put Together, Result Unknown problem and a Compare, Difference Unknown problem about their measurements. To solve the Put Together problem, students may put the connecting cube towers together and count all, count on, use known facts, or use methods such as making a ten. To solve the Compare problems, students may draw a diagram directly comparing the lengths then count up or count back or use known facts to determine the difference. When students find sums and distances using their measurements they reason abstractly and quantitatively (MP2).

It is likely that students' shoes will not be the length of an exact number of connecting cubes. Encourage students to write the closest number of whole units. There is no need to check students' measuring techniques in this activity because the focus of the activity is solving story problems.

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

My teacher's shoe is _____ connecting cubes long.

My shoe is _____ connecting cubes long.

My partner's shoe is _____ connecting cubes long.

Solve these problems about the length of your group's shoes.

Show your thinking using drawings, numbers, words, or equations.

1. What is the length of your shoe and your

Launch

- Groups of 2
- Give each group connecting cubes in towers of 10 and singles and paper.
- "A few days ago we measured the length of the biggest foot in the world. Today we are each going to measure the length of our own shoe and solve some problems using the length. First we will trace our shoe on a piece of paper and then use connecting cubes to measure the length of our shoe."
- Demonstrate tracing or have a student trace your shoe and measure the length.

partner's shoe together?

2. Whose shoe is longer, yours or your partner's?

How much longer?

3. Whose shoe is shorter, your teacher's shoe or your shoe?

How much shorter?

Student Responses

Sample responses:

1. 12 cubes. Starts with 7, counts on 8, 9, 10, 11, 12.
2. 1 cube. 8 is one more than 7.
3. My shoe is 5 cubes shorter. Draws a tower 12 cubes long to represent the teacher's shoe. Draws a tower 7 cubes long underneath it. Counts the 5 extra cubes in the tower that represents the teacher's shoe.

- "Record the length of my shoe in your book."
- "Now your partner will trace your shoe on a piece of paper and then you will use connecting cubes to measure the length of your own shoe. Measure from the tip of the toe to the back of the heel. Your shoe might not line up with the end of a connecting cube. Find the closest number of cubes to the length of your shoe. Record the length of your shoe and your partner's shoe."
- 5 minutes: partner work time

Activity

- "Solve the problems using your measurements."
- 3 minutes: independent work time
- 2 minutes: partner discussion
- Monitor for a student who represents the third problem with:
 - two towers of cubes, one to represent the length of their shoe and one to represent the length of the teacher's shoe
 - a drawing that directly compares shoe lengths
 - an addition equation
 - a subtraction equation

Synthesis

- Invite previously identified students to share.
- "What is the same about these representations? What is different?" (The first two show the length of the shoes but the others just use numbers. They all find the difference between the length of the shoes.)

Activity 2

🕒 15 min

Shoe Stories

Standards Alignments

Addressing 1.OA.A.1, 1.OA.A.2, 1.OA.B.4, 1.OA.C.6

The purpose of this activity is for students to solve familiar story problem types in a measurement context. Students represent their thinking using drawings, numbers, words, or equations (MP2). Students may use the cubes or drawings to make sense of the problems if they choose. The activity synthesis focuses on a problem that can be represented as either addition or subtraction.

🌐 Access for English Learners

MLR6 Three Reads. Keep books or devices closed. To launch this activity, display only the first problem stem, without revealing the question. "We are going to read this story problem three times." After the 1st Read: "Tell your partner what happened in the story." After the 2nd Read: "What are all the things we can count in this story?" Reveal the question. After the 3rd Read: "What are different ways we can solve this problem?"

Advances: Reading, Representing

♿ Access for Students with Disabilities

Representation: Access for Perception. Provide appropriate reading accommodations and supports to ensure student access to all the word problems.

Supports accessibility for: Language, Social-Emotional Functioning

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

Show your thinking using drawings, numbers, words, or equations.

1. Clare's shoe is 9 cubes long.
Han's shoe is 7 cubes long.
How many cubes long are Clare's and Han's shoes together?

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.
- "Let's solve more problems about the length of different shoes."

2. Kiran's shoe is 7 cubes long.
His older brother's shoe is 9 cubes long.
His younger brother's shoe is 4 cubes long.
What is the total length of their shoes?
3. Diego's shoe is 8 cubes long.
His father's shoe is 13 cubes long.
How many cubes longer is his father's shoe than his shoe?
4. Jada's shoe is 8 cubes long.
She put her shoe together with Elena's shoe.
Together the shoes are 17 cubes long.
How long is Elena's shoe?

Student Responses

1. 16 cubes. Sample response: $9 + 1 = 10$,
 $10 + 6 = 16$
2. 20 cubes. Sample response: $7 + 9 = 16$,
 $16 + 4 = 20$
3. 5 cubes. Sample response: $13 - 8 = 5$
4. 9 cubes. Sample response: Draws a picture of 17 cubes. Circles 8 to represent Jada's shoe. Sees 9 cubes left.

Activity

- Read the task statement.
- 6 minutes: independent work time
- "Discuss your work with your partner."
- 3 minutes: partner discussion
- Monitor for a student who uses addition, and another who uses subtraction, for the story about Diego and his father.

Synthesis

- Invite previously identified students to share.
- Consider asking:
 - "How do both methods show the length of Diego's shoe, his father's shoe, and the difference between the two shoes?"
 - "How are the methods the same? How are they different?"

Advancing Student Thinking

If students find the sum of the lengths in the problems about Diego and Jada, consider asking:

- "What does the story problem ask you to find?"
- "How does your representations match the story?"
- "How could you use your tools or a diagram to solve the problem?"

Lesson Synthesis

🕒 10 min

Display the story problem and equations:

Jada's shoe is 8 cubes long.
She put her shoe together with Elena's shoe.

Together the shoes are 17 cubes long.
How long is Elena's shoe?

$$8 + \boxed{9} = 17 \text{ and } 17 - 8 = \boxed{9}$$

"Today we solved story problems about measurement. Some problems were solved using addition or subtraction. What do the numbers in these equations represent?" (8 is the length of Jada's shoe. 17 is the length of their shoes together. 9 is the length of Elena's shoe.)

Complete Cool-Down

Response to Student Thinking

Students add $6 + 13$.

Next Day Support

- Create a poster with a diagram that represents the cool-down from this lesson.

Lesson 12: Compare Measurements

Standards Alignments

Addressing 1.NBT.A.1, 1.OA.A.1, 1.OA.C.6

Teacher-facing Learning Goals

- Solve Compare story problems with unknowns in all positions.

Student-facing Learning Goals

- Let's solve story problems in which we compare lengths.

Lesson Purpose

The purpose of this lesson is for students to solve Compare story problems about measurement.

In the previous lesson, students solved Compare, Difference Unknown story problems about length measurements. Students used connecting cubes, drawings, numbers, words, or equations to solve and represent these problems. They discussed how some problems can be solved using either addition or subtraction.

In this lesson, students solve two new problem types, Compare, Bigger Unknown and Compare, Smaller Unknown, through the context of measurement and consider how a representation can be used to solve different story problems. Due to language demands of these types of problems, students will focus on Bigger Unknown versions with "more" and Smaller Unknown versions with "fewer." Students are reintroduced to a diagram that may be helpful for Compare problems and prepares them for working with tape diagrams in grade 2.

Access for:



Students with Disabilities

- Representation (Activity 1)



English Learners

- MLR8 (Activity 2)

Instructional Routines

MLR6 Three Reads (Activity 1), Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2
- Dry erase markers: Activity 3

Materials to Copy

- Write the Number Stage 3 Gameboard (groups of 2): Activity 3

- Sheet protectors: Activity 3

Required Preparation

- Create a poster for the Lesson Synthesis with the problems from Activity 1 and Activity 2 and this unlabeled diagram shown two times:



Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

How did the Three Reads routine support your students in making sense of a story problem? What can you do to encourage students to use this method for themselves to make sense of a problem?

Cool-down (to be completed at the end of the lesson)

🕒 0 min

Unit 6, Section C Checkpoint

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Lesson observations

Student Responses

- Retell the story.
- Represent the story with objects or drawings.
- Explain how their representation matches the story.

Begin Lesson

Warm-up

🕒 10 min

Notice and Wonder: 6, 8, and 14

Standards Alignments

Addressing 1.OA.C.6

The purpose of this warm-up is to elicit the idea that addition and subtraction are related operations, which will be useful when students solve subtraction story problems with unknown addends.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?

$$6 + 8 = 14$$

$$8 + 6 = 14$$

$$14 - 6 = 8$$

$$14 - 8 = \square$$

Student Responses

Students may notice:

- There are four equations.
- They all use the same numbers.
- The last equation is missing a number.

Students may wonder:

- Why is the 6 missing in the last equation?
- Can we make four more related equations using different numbers?
- Does this always work?

Launch

- Groups of 2
- Display the image.
- "What do you notice? What do you wonder?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- "Use these equations to explain how addition can help with subtraction." (If you know an addition fact like $6 + 8 = 14$, then you also know two subtraction facts, $14 - 8 = 6$ and $14 - 6 = 8$.)

Activity 1

🕒 15 min

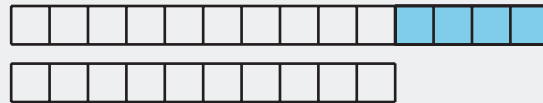
Friendship Bracelets

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

The purpose of this activity is for students to make sense of and solve a new type of story problem, Compare, Smaller Unknown, using the Three Reads instructional routine. The routine helps students make sense of the quantities in the problem and their relationship before they try to represent and solve the problem (MP2).

In the activity synthesis, students make sense of different representations of the problem. They may use connecting cubes or drawings to represent their thinking as they solve the problem. Since this is a Compare problem, monitor for representations in which each bracelet length is represented, similar to what students will see in the lesson synthesis.



This activity uses *MLR6 Three Reads*. Advances: reading, listening, representing

♿ Access for Students with Disabilities

Representation: Develop Language and Symbols. Synthesis: Maintain a visible display to record vocabulary relating to comparing lengths such as: fewer than, less than, longer, more than. Invite students to suggest details (words or pictures) that will help them remember the meaning of the words or phrases.

Supports accessibility for: Language, Memory

Instructional Routines

MLR6 Three Reads

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

Priya and Han are comparing the lengths of their friendship bracelets.

Han's bracelet is 14 cubes long.

The length of Priya's bracelet is 4 cubes fewer than Han's bracelet.

How long is Priya's bracelet?

Show your thinking using drawings, numbers, or words.



Student Responses

10 cubes long. Sample responses:

- Draws or makes a tower of 14 to show Han's bracelet. Draws or makes another tower 4 cubes shorter than Han's.
- Draws or makes a tower of 14 to show Han's bracelet, takes away 4 cubes.
- Starts at 14, counts back 4 using objects or marks, 13, 12, 11, 10.

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.

MLR6 Three Reads

- Display only the problem stem, without revealing the question.
- "We are going to read this problem three times."
- 1st Read: "Priya and Han are comparing the lengths of their friendship bracelets. Han's bracelet is 14 cubes long. The length of Priya's bracelet is 4 cubes fewer than Han's bracelet."
- "What is this story about?"
- 1 minute: partner discussion
- Listen for and clarify any questions about the context.
- 2nd Read: "Priya and Han are comparing the lengths of their friendship bracelets. Han's bracelet is 14 cubes long. The length of Priya's bracelet is 4 cubes fewer than Han's bracelet."
- "What can be counted or measured?" (The length of Priya's bracelet. The length of Han's bracelet. The difference in length between the two bracelets.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share and record all quantities.
- 3rd Read: Read the entire problem, including the question, aloud.
- "What are different ways we can solve this problem?" (use connecting cubes to represent the bracelets, draw a picture, think about the numbers)
- 30 seconds: quiet think time
- 1–2 minutes: partner discussion

Activity

- “Work with your partner to represent and solve the problem. Show your thinking using drawings, numbers, or words.”
- 3–5 minutes: partner work time
- Monitor for students who use different representations, including a drawing that shows both quantities.

Synthesis

- Invite previously identified students to share their representations.
- “How did ____ represent the problem? Where do you see the answer to the question in their work?”

Activity 2

🕒 10 min

Same Bracelets, Different Story

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

The purpose of this activity is for students to make sense of and solve a Compare, Bigger Unknown story problem. The numbers are intentionally the same as the problem in the previous activity. During the lesson synthesis, students analyze a representation and describe how it can represent both story problems (MP8).

🌐 Access for English Learners

MLR8 Discussion Supports. During partner work, invite students to take turns sharing their responses. Ask students to restate what they heard using precise mathematical language and their own words. Display the sentence frame: “I heard you say . . .” Original speakers can agree or clarify for their partner.

Advances: Listening, Speaking

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

Han's bracelet is 4 cubes longer than Priya's bracelet.

Priya's bracelet is 10 cubes long.

How long is Han's bracelet?

Show your thinking using drawings, numbers, or words.

Student Responses

14 cubes long. Sample response: Draws 10 cubes and adds 4 more. $10 + 4 = 14$

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.
- "Now you are going to solve another problem about Han's and Priya's bracelets."

Activity

- Read the task statement.
- 5 minutes: partner work time
- Monitor for students who notice how this problem is related to the problem in the previous activity.

Synthesis

- Invite previously identified students to share what they noticed.
- Invite students to share how they solved the problem.

Activity 3

🕒 15 min

Introduce Write Numbers, Numbers to 120 by 1

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this activity is for students to learn stage 3 of the Write Numbers center. Students count by 1 and choose whether to count forward or backward. They take turns writing the next 1, 2, or 3 numbers in the sequence. The player who writes the last number on the number path

wins. Gameboards go from 89–110, 95–116, and 99–120.

Materials to Gather

Dry erase markers, Sheet protectors

Materials to Copy

Write the Number Stage 3 Gameboard
(groups of 2)

Required Preparation

Put each gameboard in a sheet protector.

Launch

- Groups of 2
- Give each group the gameboards and a dry erase marker.
- “We are going to learn a new way to play Write Numbers.”
- “This time, the gameboards have larger numbers so you can practice writing numbers above 100. Decide which gameboard to begin with and decide whether to start with the smaller number and count forward, or start with the larger number and count backward. Take turns writing the next one, two, or three numbers on the path. Remember, the person who writes the last number wins.”

Activity

- 10 minutes: partner work time

Synthesis

- Play one round with the class. Discuss how they decide whether to write one, two, or three numbers.

Lesson Synthesis

🕒 10 min

Display previously made poster.

"Today we solved a Compare problem with the length of the smaller bracelet unknown. We also solved a Compare problem with the length of the bigger bracelet unknown. How does the drawing show each problem?" (For the first problem, it has 14 cubes for Han's bracelet. The blue cubes are the four cubes more than Priya so Priya has 10 cubes which are on the bottom. For the second story, it shows 10 cubes for Priya on the bottom. Han's are on the top because there are the same amount and four more.)

Record student explanations by labeling each diagram on the poster.

Lesson 13: Solve Take From Story Problems

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

Building Towards 1.NBT.C.4

Teacher-facing Learning Goals

- Solve Take From story problems, with unknowns in all positions, in a way that makes sense to them.

Student-facing Learning Goals

- Let's solve a new type of story problem.

Lesson Purpose

The purpose of this lesson is for students to solve Take From problems, with unknowns in all positions, in a way that makes sense to them.

In previous units, students solved Take From problems with the Result or Change unknown. In this lesson, students solve a new problem type, Take From, Start Unknown. This type of problem is often challenging for students as the language signifies subtraction, but you must add to solve the problem. Students consider how a drawing represents different Take From story problems. Students are not required to master this type of problem until grade 2.

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR8 (Activity 2)

Instructional Routines

MLR6 Three Reads (Activity 1), Number Talk (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2

Lesson Timeline

Warm-up

10 min

Teacher Reflection Question

In grade 2, students are introduced to tape diagrams as a tool for making sense of story

Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

problems. How does the work of this lesson lay the foundation for understanding tape diagrams? How will the tape diagrams used in grade 2 be different than the diagram students analyzed today?

Cool-down (to be completed at the end of the lesson)

🕒 5 min

Clare's Beads

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

Student-facing Task Statement

Clare has some beads.
She uses 7 beads to make a bracelet.
She has 8 beads left.
How many beads did Clare have to start?
Show your thinking using drawings, numbers, or words.

Student Responses

15 beads. Sample response: Draws 7 beads and labels them as the beads used. Draws 8 beads and labels them as the beads that are left. Circles all 15 beads to show how many she had to start.

----- Begin Lesson -----

Warm-up

🕒 10 min

Number Talk: Add 2 Two-digit Numbers

Standards Alignments

Building Towards 1.NBT.C.4

The purpose of this Number Talk is to elicit strategies and understandings students have for adding 2 two-digit numbers. When students add ones and ones and tens and tens and describe how they compose a new ten, they look for and make sense of the base-ten structure of numbers (MP7).

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $15 + 10$
- $15 + 15$
- $25 + 25$
- $25 + 28$

Student Responses

- 25: One more ten would be two tens and 5 ones.
- 30: $15 + 15 = 10 + 10 + 5 + 5$, $10 + 10 = 20$, $5 + 5 = 10$, $20 + 10 = 30$
- 50: $25 + 25$ is 20 more than $15 + 15$, $20 + 30 = 50$
- 53: $20 + 20 = 40$, $5 + 8 = 13$, $40 + 13 = 53$

Launch

- Display one expression.
- "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

Activity

- Record answers and strategies.
- Keep expressions and work displayed.
- Repeat with each expression.

Synthesis

- "How did knowing $15 + 15$ help you solve $25 + 25$?" (I already knew $15 + 15$ was 30. Then I added the 20 more to 30 since each 25 is 10 more than 15.)
- "How did knowing $25 + 25$ help you solve $25 + 28$?" (I knew $25 + 25$ is 50, and 28 is 3 more than 25, so $50 + 3 = 53$.)

Activity 1

🕒 20 min

How Many to Start?

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

The purpose of this activity is for students to make sense of and solve a new type of story problem, Take From, Start Unknown, using the Three Reads routine. As students discuss, represent, and solve the problem, they see that even though the actions in the story can be represented with subtraction, they solve it using addition. The Three Reads routine encourages students to make sense of the quantities in the story and their relationship before mapping out a strategy to solve the problem (MP2).

This activity uses *MLR6 Three Reads*. Advances: Reading, Listening, Representing.

Instructional Routines

MLR6 Three Reads

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

Elena bought a bag of beads to make bracelets.
She takes out 9 beads to make a bracelet.
There are 11 beads left in the bag.
How many beads were in the bag when Elena bought it?
Solve the story problem.
Show your thinking using drawings, numbers, or words.



Student Responses

20. Sample responses:

- To find out how many beads are in the bag to start with, I need to add these 9 beads back into the bag. I combine 9 beads with the 11 beads already in the bag. That's $9 + 11$.
- Draws a square marked "bag" and labels 11. Writes 9 to the side of it to show beads taken out. Adds $11 + 9$.
- $11 + 9 = 10 + 1 + 9 = 10 + 10 = 20$

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.
- "There are many different arts and crafts that people enjoy doing. Making friendship bracelets, like the ones in the stories we solved, is one craft that lots of students like. What arts and crafts do you like? What arts and crafts do you know that other people enjoy?" (painting, knitting, scrapbooking)
- 30 seconds: quiet think time
- Share responses.
- "We are going to continue to solve problems about crafts that people enjoy."

MLR6 Three Reads

- Display only the problem stem, without revealing the question.
- "We are going to read this problem three times."
- 1st Read: "Elena bought a bag of beads to

make bracelets. She takes out 9 beads to make a bracelet. There are 11 beads left in the bag."

- "What is this story about?"
- 1 minute: partner discussion
- Listen for and clarify any questions about the context.
- 2nd Read: "Elena bought a bag of beads to make bracelets. She takes out 9 beads to make a bracelet. There are 11 beads left in the bag."
- "What can be counted?" (number of beads she took out, number of beads are left in the bag, number of beads there are altogether).
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share and record all quantities.
- 3rd Read: Read the entire problem, including the question, aloud.
- "What are different ways we can solve this problem?" (use connecting cubes to show the beads, draw a picture, write an equation using a fact we know)
- 30 seconds: quiet think time
- 1–2 minutes: partner discussion

Activity

- "Work with your partner to represent and solve the problem. Show your thinking using drawings, numbers, or words."
- 5 minutes: partner work time
- Monitor for students who:
 - use cubes to show 9 beads out of the bag and 11 beads in the bag
 - draw bag and write 11 in it, write or draw 9 next to it
 - write $9 + 11 = 20$

Synthesis

- Invite previously identified students to share in the sequence above.
- Record student thinking with drawings and equations.
- “How are these methods the same?” (They all added 11 and 9.)

Advancing Student Thinking

If students subtract 9 beads from 11 beads, consider asking:

- “What is happening in the story?”
- “What does the story problem ask you to find? Do you think there could have been 2 beads in the bag to start? Why or why not?”
- “How could you use connecting cubes or drawings to act out the story?”

Activity 2

🕒 15 min

One Representation, Three Stories

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

The purpose of this activity is for students to make sense of Take From story problems with unknowns in different positions. Students analyze one drawing and describe how it matches each story problem (MP2). As students describe how the drawing matches each problem, the teacher labels the drawing and includes a question mark for the unknown in the story. This allows students to see that although the same drawing represents three different problems, the unknown number is not in the same place in the drawing. They understand that the drawing is used differently to solve each problem.

Access for English Learners

MLR8 Discussion Supports. Prior to discussing how the drawing shows each story problem, invite students to make sense of the task and take turns sharing their understanding with their partner. Listen for and clarify any questions about the directions.

Advances: Reading, Representing

Access for Students with Disabilities

Engagement: Provide Access by Recruiting Interest. Provide choice and autonomy. Provide access to connecting cubes, colored pencils, or highlighters that students can use to match the story problems to the corresponding equations.

Supports accessibility for: Conceptual Processing, Organization

Materials to Gather

Connecting cubes in towers of 10 and singles

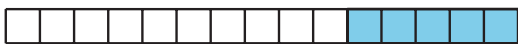
Required Preparation

- Create a poster of the unlabeled diagram shown three times:



Student-facing Task Statement

- Discuss with your partner how the drawing shows each problem.



- Elena has 15 beads in a box. She uses 5 of them to make a bracelet. How many beads does Elena have left?
- Elena has some beads in a box. She uses 5 of them to make a bracelet. She has 10 beads left. How many beads were in Elena's box?

Launch

- Groups of 2
- Give students access to connecting cubes.

Activity

- Read the task statement.
- 5 minutes: partner discussion
- Monitor for students who can explain how the diagram matches each story.

Synthesis

- Invite previously identified students to share.
- Record student explanations by labeling

- c. Elena has 15 beads in a box.
She uses some of them to make a bracelet.
She has 10 beads left.
How many beads did Elena use to make a bracelet?

Student Responses

Sample responses:

1.
 - a. The whole thing represents the beads Elena had in the box. The blue ones are the ones she used to make a bracelet. When you take those away you have the white ones that are the ones she had left.
 - b. The 5 blue ones are the ones she used to make a bracelet. The 10 white ones are the ones she has left. You can find out how many she had in the box by putting them together.
 - c. The whole thing shows the 15 beads in the box. The white ones are the 10 she has left after making a bracelet. The blue ones show how many she used.

each diagram with the known quantities and a question mark for the unknown.

- Record an equation with a question mark for the unknown to match student explanations.
- “How are these stories and their representations the same? How are they different?” (They’re all about beads. Each drawing shows 15 boxes for the beads and 5 of them are shaded. The question mark is in different places. It means the total amount before any were taken away in one story, the amount that was taken away in another story, and the amount that was left in another story.)

Lesson Synthesis

🕒 10 min

Display the story about the bag of beads Elena bought.

“Today we solved Take From problems and saw that one drawing could represent different stories. Make a drawing to match this story.”

Invite students to share their drawings and explain how they match the story.

----- Complete Cool-Down -----

Response to Student Thinking

Students subtract 7 from 8.

Next Day Support

- During the launch of the next day's activity, have students use cubes to represent the problem in the cool-down.

Lesson 14: Which Equation Matches?

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.C.6

Teacher-facing Learning Goals

- Analyze story problems with unknowns in all positions.
- Match addition and subtraction equations to story problems.

Student-facing Learning Goals

- Let's think about story problems and equations.

Lesson Purpose

The purpose of this lesson is for students to analyze story problems and match addition and subtraction equations to them.

In previous lessons, students solved Take From, Start Unknown, Compare, Bigger Unknown, and Compare, Smaller Unknown problems. They showed their thinking using drawings, numbers, or words. Throughout the year, students solved all types of story problems with unknowns in all positions.

In this lesson, students learn that they can use equations to make sense of story problems in different ways. In the first activity, students sort story problems based on whether they think they best fit addition or subtraction. In the second activity, students match the same story problems to equations. In both activities, students notice that the equation that matches the actions in the story and the equation they may use to solve the problem may use the opposite operation. This discussion helps deepen students understanding of the way equations can be used to make sense of and solve problems (MP2) and their understanding of the relationship between addition and subtraction (MP7).

Access for:

Students with Disabilities

- Engagement (Activity 1)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Which One Doesn't Belong? (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2

Materials to Copy

- Story Problem Cards, Unknowns in All Positions (groups of 2): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

What opportunities are you giving students to reflect on their understanding of the mathematical content?

Cool-down (to be completed at the end of the lesson)

⌚ 5 min

Find the Match

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Jada has some stamps.

She gives Tyler 4 stamps.

Now Jada has 9 stamps left.

How many stamps did Jada have before she gave some to Tyler?

Circle the **2** equations that match the story.

A. $9 + 4 = ?$

B. $9 - 4 = ?$

C. $? - 4 = 9$

D. $? + 4 = 9$

Student Responses

A, C

 Begin Lesson

Warm-up

⌚ 10 min

Which One Doesn't Belong: Equations

Standards Alignments

Addressing 1.OA.C.6

This warm-up prompts students to carefully analyze and compare equations. In addition to calculating the value of each expression, students also think about the structure of each equation, including both the operations and the numbers (MP7).

Instructional Routines

Which One Doesn't Belong?

Student-facing Task Statement

Which one doesn't belong?

- A. $10 = 6 + 4$
- B. $16 - 5 = 11$
- C. $11 = 6 + 4 + 1$
- D. $3 + \square = 11$



Student Responses

Sample responses:

- A doesn't belong because the expression doesn't have the value 11.
- B doesn't belong because it doesn't use addition.
- C doesn't belong because the sum has 3 addends.
- D doesn't belong because it has an unknown

Launch

- Groups of 2
- Display the image.
- "Pick one that doesn't belong. Be ready to share why it doesn't belong."
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 2–3 minutes: partner discussion
- Share and record responses.

Synthesis

- "Let's find at least one reason why each one doesn't belong."

addend.

Activity 1

⌚ 15 min

Sort Story Problems

 PLC Activity

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.C.6

The purpose of this activity is to sort story problems with unknowns in all positions. Students sort the story problems by whether they are addition or subtraction problems. Some stories include actions that would be represented by one operation, but may be solved using the opposite operation. Students may sort these problems into either category as long they can explain how they sort.

For example, consider this Take From, Start Unknown story problem:

Clare has some stickers.

She gives 9 of them to her friends.

She has 5 stickers left.

How many stickers did Clare have to start with?

In the last lesson, students related this type of problem to a subtraction equation ($? - 9 = 5$). This equation shows a way to use equations to represent the actions in the story. However, students may also think of an equation that shows how they would solve the problem ($5 + 9 = ?$). This is discussed in the activity synthesis to prepare students to identify more than one equation to match these story problems in the next activity.

Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Chunk this task into more manageable parts. Give students a subset of the cards to start with and introduce the remaining cards once students have sorted the initial set of cards.

Supports accessibility for: Organization, Attention

Materials to Gather

Connecting cubes in towers of 10 and singles

Materials to Copy

Story Problem Cards, Unknowns in All

Positions (groups of 2)

Required Preparation

- Create a set of cards from the Instructional master for each group of 2.

Student Responses

Sample responses:

- Addition: A1, A4, Subtraction: A2, A3, A5, A6
- Addition: A4, A5, A6, Subtraction: A1, A2, A3

Launch

- Groups of 2
- Give each group a set of cards and access to connecting cubes in towers of 10 and singles.
- “We have been solving stories about people doing different arts and crafts. Making collages is another popular craft.”
- Display the word “collage” for all to see and invite students to share what they know about making a collage.
- If needed ask, “What materials can you use to make a collage?” (stickers, pictures, stamps, markers, glitter, glue)

Activity

- “Today we are going to look at lots of stories about students who made collages. Sort the story problems by whether they are addition or subtraction. Be ready to explain how you know so that others can understand.”
- 10 minutes: partner work time
- Monitor for two groups who put the same story problem in different categories.

Synthesis

- Display the problems that students sorted into different groups (for example, A1, A5 or A6).
- “How is this an addition story problem? How is this a subtraction story problem?” (To solve card A1, I can think about how many pictures to add to 8 to get to 11, or I

can think $11 - 8$ to find how many pictures there are.)

- Repeat with other problems as time permits.

Activity 2

🕒 20 min

Stories and Equations

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.C.6

The purpose of this activity is to match equations to the story problems from the previous activity. Each story has several equations listed, two of which match the story. Students are encouraged to find both equations; however, it is more important that students can explain how an equation represents what is happening in the story, or how it is used to solve the story. In the launch, students make sense of a familiar diagram to encourage them to use objects or drawings to represent the story if it will help them find the matching equations.

In order to match stories with equations, students reason abstractly and quantitatively (MP2) as they interpret both the numbers and the operations in the equations in terms of a context.

Access for English Learners

MLR8 Discussion Supports Display sentence frames to support partner discussion: “I think the equations ____ and ____ match the story problem because...,” “I agree because...,” and “I disagree because...”

Advances: Speaking, Conversing

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

For each problem, circle the **2** equations that match the story.

Launch

- Groups of 2
- Give students access to connecting cubes

You can use objects or drawings to represent the problem, if it helps you.

1. Jada uses 8 pictures of people.
She also uses some pictures of animals.
Altogether she uses 11 pictures.
How many pictures of animals does she use?
 - $8 + 11 = ?$ 
 - $8 + ? = 11$
 - $11 - 8 = ?$
2. Kiran has 19 pictures.
He gives some to his sister.
Now, he has 11 pictures left.
How many pictures did Kiran give to his sister?
 - $11 + 19 = ?$
 - $19 - ? = 11$
 - $19 - 11 = ?$
3. Han's collage has 16 stamps.
Lin's collage has 10 fewer stamps.
How many stamps does Lin's collage have?
 - $10 + 16 = ?$
 - $10 + ? = 16$
 - $16 - 10 = ?$
4. Elena uses 9 more stickers than Andre.
Andre uses 5 stickers.
How many stickers does Elena use?
 - $9 + 5 = ?$
 - $5 + 9 = ?$
 - $9 - 5 = ?$
5. Noah has 6 stamps.
Tyler has 16 stamps.
How many fewer stamps does Noah have than Tyler?
 - $6 + ? = 16$
 - $16 - 6 = ?$

in towers of 10 and singles.

- Display the diagram and read the first story problem. Do not display the equations.
- "How does the diagram represent the story problem?" (The eight white cubes show the pictures of people. The three blue cubes were added to get to a total of 11. So the three blue cubes show the pictures of animals.)
- 1 minute: quiet think time
- 1 minute: partner discussion
- "Which equations match the story?"
- Display the equations.
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Monitor for students who chose the second and third equations.
- Invite students to share.
- If needed: "How does the diagram match the equation?"
- "There is an addition and subtraction equation that can match this problem."

Activity

- Read the task statement.
- 10 minutes: partner work time

Synthesis

- Display the problem about Noah and Tyler and a tower of 6 cubes and a tower of 16 cubes.
- "Use the cubes to explain how we can use addition to solve this problem."
- Repeat for subtraction.

○ $? - 6 = 16$

6. Clare has some stickers.

She gives 9 of them to her friends.

She has 5 stickers left.

How many stickers did Clare have to start with?

○ $5 + 9 = ?$

○ $9 - 5 = ?$

○ $? - 9 = 5$

If you have time: Choose a story problem to solve.

Show your thinking using drawings, numbers, or words.

Student Responses

1. ○ $8 + ? = 11$

○ $11 - 8 = ?$

2. ○ $19 - ? = 11$

○ $19 - 11 = ?$

3. ○ $10 + ? = 16$

○ $16 - 10 = ?$

4. ○ $9 + 5 = ?$

○ $5 + 9 = ?$

5. ○ $6 + ? = 16$

○ $16 - 6 = ?$

6. ○ $5 + 9 = ?$

○ $? - 9 = 5$

Lesson Synthesis

🕒 10 min

Display story problem A2:

Kiran has 19 pictures.

He gives some to his sister.

Now he has 11 pictures left.

How many pictures did Kiran give to his sister?

- $11 + ? = 19$
- $19 - ? = 11$
- $19 - 11 = ?$

“Which equation best matches the actions in this story? Why?” ($19 - \underline{\hspace{1cm}} = 11$ because in the story Kiran starts with 19 pictures, he gives some away, and the story tells us he has 11 left.)

“Which equation matches how you would solve this problem? Why?” (I would use $19 - 11 = \underline{\hspace{1cm}}$ because if I take away the pictures he has left, I will know how many he gave to his sister. I would use $11 + \underline{\hspace{1cm}} = 19$ because I would rather add than subtract. I can add to the 11 pictures he had left until I get to 19 and that will tell me how many he gave to his sister.)

Complete Cool-Down

Response to Student Thinking

Students only choose option C ($19 - 11 = 8$).

Next Day Support

- Launch Activity 1 by highlighting the important ideas from the previous lesson.

Lesson 15: Write Equations for Story Problems

Standards Alignments

Addressing 1.NBT.A.1, 1.OA.A.1, 1.OA.C.6

Teacher-facing Learning Goals

- Use addition and subtraction to solve story problems with unknowns in all positions.
- Write equations to represent story problems.

Student-facing Learning Goals

- Let's solve story problems and write equations.

Lesson Purpose

The purpose of this lesson is for students to solve story problems with unknowns in all positions using addition and subtraction. Students write equations to represent each story problem.

In the previous lesson, students matched story problems to equations.

In this lesson, students work in pairs to solve four different types of story problems and show their thinking using drawings, numbers, words, or equations. Students create visual representations of their thinking for one story problem and participate in a gallery walk in which they write equations to match other's representations and show how they made sense of each other's work. Throughout the lesson, students make connections between story problems, representations, and equations (MP2).

Prior to this lesson, the teacher may consider reading *Sadako and the Thousand Paper Cranes*, by Eleanor Coer.

This lesson has a Student Section Summary.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

Instructional Routines

Estimation Exploration (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1
- Tools for creating a visual display: Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	25 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

In this lesson, students made connections between story problems and different representations of their thinking, including equations. What questions did you ask to help make their connections more visible? What did these connections reveal about students' understanding of different story problem types?

Cool-down (to be completed at the end of the lesson)

🕒 5 min

Write An Equation

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

Student-facing Task Statement

Elena has 10 fewer paper stars than Priya.
Priya has 20 paper stars.
How many paper stars does Elena have?
Write an equation that represents the problem.
Put a box around the answer to the problem.

Student Responses

Sample responses:

- $10 + \boxed{10} = 20$
- $20 - 10 = \boxed{10}$

Begin Lesson

Warm-up

⌚ 10 min

Estimation Exploration: Paper Cranes

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this Estimation Exploration is to practice the skill of estimating a reasonable answer based on experience and known information.

Instructional Routines

Estimation Exploration

Student-facing Task Statement

How many cranes are there in the image?



Record an estimate that is:

too low	about right	too high

Student Responses

Sample responses

- Too low: 10–19
- About right: 20–30

Launch

- Groups of 2
- Display the image.
- “What is an estimate that’s too high?” “Too low?” “About right?”
- 1 minute: quiet think time

Activity

- “Discuss your thinking with your partner.”
- 1 minute: partner discussion

Synthesis

- “Is anyone’s estimate less than 20? Is anyone’s estimate greater than 30?”
- “Based on this discussion does anyone want to revise their estimate?”

- Too high: 31–50

Activity 1

🕒 10 min

Story Problems about Origami

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

The purpose of this activity is to solve Compare story problems with unknowns in all positions, Add To, Start Unknown problems, and Take From, Start Unknown problems. Students show their thinking in any way they choose including drawings, numbers, words, or equations (MP2).

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

Show your thinking using drawings, numbers, or words.

1. Clare made some paper cranes.
She gives 12 of them to Han.
Now Clare has 7 cranes left.
How many cranes did she make?
2. Tyler made 15 origami butterflies.
Jada made 9 fewer origami butterflies than Tyler.
How many origami butterflies did Jada make?
3. Elena made some red flowers.
Then she made 12 blue flowers.
Now she has 18 flowers altogether.
How many red flowers did she make?



Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.
- “Another craft that lots of people enjoy is origami. Origami is the art of folding paper. There are lots of different things you can make. You are going to solve some problems about origami that Clare and her classmates made.”

Activity

- Read the task statement.
- 8 minutes: partner work time

Synthesis

- “Now, you will make posters of your work and do a gallery walk.”

4. Mai made 8 paper frogs.
Diego made 17 paper frogs.
How many more frogs did
Diego make than Mai?



Student Responses

1. 19. Sample response: Draws 12 marks and labels Han. Draws 7 marks and labels Clare. Circles all marks and writes 19.
2. 6. Sample response: Draws or makes a tower of 15. Removes 9 and counts how many are left.
3. 6. Sample response: Counts on from 12 to 18.
4. 9. Sample response: $8 + 2 = 10$,
 $10 + 7 = 17$, $2 + 7 = 9$

Activity 2

🕒 25 min

Gallery Walk: Write Equations

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

The purpose of this activity is for students to analyze the work of their classmates and write equations to show how they made sense of each others' thinking. During the synthesis, students discuss how different representations and equations can match the same story problem. When students share connections between different representations and the story problems, they reason abstractly and quantitatively (MP2).

♿ Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Check for understanding by inviting students to rephrase directions in their own words. Keep a display of directions visible throughout the activity.

Supports accessibility for: Memory, Organization

Materials to Gather

Tools for creating a visual display

Student-facing Task Statement

Write an equation that matches your classmates' work for each story problem.

1. Equation: _____
2. Equation: _____
3. Equation: _____
4. Equation: _____

Student Responses

Sample responses:

1. $12 + 7 = \boxed{19}$ or $\boxed{19} - 12 = 7$
2. $15 - 9 = \boxed{6}$
3. $\boxed{6} + 12 = 18$ or $18 - 12 = \boxed{}$
4. $8 + \boxed{9} = 17$ or $17 - 8 = \boxed{9}$

Launch

- Groups of 2
- Give each group tools for creating a visual display.
- Assign each group a problem from the previous activity.

Activity

- "With your partner, create a visual display that shows your thinking about the problem. You may want to include details such drawings, numbers, or words to help others understand your thinking. Do not write equations."
- 5 minutes: partner work time
- "Now we will have a gallery walk to look at each other's work. As you visit each poster write an equation that matches how the group represented their thinking. You may write more than one equation for some of the problems."
- 10 minutes: gallery walk

Synthesis

- For each story problem, display the posters students created to represent it and invite students to share the equations they wrote.
- "How are the representations on the posters and the equations we shared for this problem the same? How were they different?" (Some show using addition to solve and some show subtraction. They all find the same answer. Some show each object and some use numbers to represent how many objects.)

Lesson Synthesis

🕒 10 min

"In this section we practiced solving different types of story problems. What did you learn? What do you still need to practice?" (I learned how drawing towers can help me solve problems for which I have to find the difference. I learned that sometimes you can add or subtract to solve problems. I still need help with writing equations, especially for the tricky story problems.)

✍ Student Section Summary

We solved different types of problems and represented our thinking using drawings and equations.

Diego's bracelet is 7 cubes longer than Mai's bracelet.

Mai's bracelet is 6 cubes long.

How long is Diego's bracelet?

Diego 

Mai 

$$6 + 7 = \boxed{13}$$

Kiran made some paper cranes.

He gave 5 of his cranes to his brother.

Now, he has 10 cranes left.

How many cranes did Kiran start with?



$$5 + 10 = \boxed{15}$$

$$\boxed{15} - 5 = 10$$

----- Complete Cool-Down -----

Response to Student Thinking

Students add 20 and 10 together.

Next Day Support

- Before the warm-up, have students work in partners to discuss a correct response to this cool-down.

Lesson 16: Center Day 3

Standards Alignments

Addressing 1.MD.A.2, 1.NBT.A.1, 1.NBT.C.4

Teacher-facing Learning Goals

- Count groups of up to 120 objects and write a number to represent them.
- Measure length by iterating same-size length units without gaps or overlaps.
- Read and write numbers to 120.

Student-facing Learning Goals

- Let's practice counting, measuring lengths, and writing numbers.

Lesson Purpose

The purpose of this lesson is to practice working with numbers to 120 and measuring lengths.

In the first activity, students learn stage 3 of the Counting Collections center. In this new stage, students count and represent collections of up to 120 objects. In the second activity, students choose between two previously introduced centers focused on measuring and writing numbers.

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- 10-frames: Activity 1
- Collections of objects: Activity 1
- Cups: Activity 1
- Materials from previous centers: Activity 2
- Paper plates: Activity 1

Materials to Copy

- Counting Collections Stage 3 Recording Sheet (groups of 1): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

Think about a time you recently made a mistake during math class. How did you leverage your mistake to show students that mistakes are just learning in process?

----- **Begin Lesson** -----**Warm-up**

⌚ 10 min

Number Talk: Add 20 and 1

Standards Alignments

Addressing 1.NBT.C.4

The purpose of this Number Talk is to elicit strategies and understandings students have for adding within 100. Students use their understanding of the properties of operations and place value as they notice the relationship between the expressions and why they have the same value (MP7).

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $65 + 20$
- $85 + 1$
- $65 + 20 + 1$
- $65 + 21$

Launch

- Display one expression.
- “Give me a signal when you have an answer and can explain how you got it.”
- 1 minute: quiet think time

Activity

- Record answers and strategies.

Student Responses

- 85: 65 has 6 tens and 5 ones. If I add 20 then I have 8 tens and 5 ones.
- 86: One more than 85 is 86.
- 86: I know from the first expression that $65 + 20$ is 85. One more than 85 is 86.
- 86: 21 is the same amount as $20 + 1$, so $65 + 21$ is the same amount as $65 + 20 + 1$. I know $65 + 20 + 1$ is 86.

- Keep expressions and work displayed.
- Repeat with each expression.

Synthesis

- “Why do the last three expressions all have the same value?” (They are all adding $65 + 20 + 1$ in different ways.)

Activity 1

🕒 20 min

Introduce Counting Collections, Estimate and Count Up to 120

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this activity is for students to learn stage 3 of the Counting Collections center. Students are given a collection of up to 120 objects. They record an estimate for how many objects they think are in their collection. Then, they work with a partner to figure out how many objects are in their collection. Each partner records how many. Students may draw pictures, write numbers or equations, or use base-ten representations to represent their collection.

♿ Access for Students with Disabilities

Representation: Access for Perception. Students may benefit from hearing the instructions for the centers more than once.

Supports accessibility for: Attention, Memory

Materials to Gather

10-frames, Collections of objects, Cups, Paper plates

Materials to Copy

Counting Collections Stage 3 Recording Sheet (groups of 1)

Required Preparation

- Create a collection of up to 120 objects per group of 2 students (buttons, two-color counters, linking cubes, paper clips, pattern blocks, square tiles).

Launch

- Groups of 2
- Give each group two recording sheets, a collection of objects, and access to tools to help organize their count.
- “We are going to do more Counting Collections.”
- “This time, you will estimate how many objects are in your collection before you count them. Record your estimate, then count the collection. Record your count.”

Activity

- 15 minutes: partner work time

Synthesis

- “How did you organize the objects in your collection as you counted?”

Activity 2

🕒 20 min

Centers: Choice Time

Standards Alignments

Addressing 1.MD.A.2, 1.NBT.A.1

The purpose of this activity is for students to practice measuring lengths and writing numbers up to 120.

Students choose from any stage of previously introduced centers.

- Write Numbers
- Estimate and Measure

Access for English Learners

MLR8 Discussion Supports. Synthesis: Provide students with the opportunity to rehearse what they will say with a partner before they share with the whole class.

Advances: Speaking

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from:
 - Write Numbers, Stages 1–3
 - Estimate and Measure, Stage 1

Student-facing Task Statement

Choose a center.

Write Numbers



Estimate and Measure



Launch

- Groups of 2
- “Now you are going to work on centers we have already learned.”
- Display the center choices in the student book.
- “Think about what you would like to do first.”
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 8 minutes: center work time
- “Choose what you would like to do next.”
- 8 minutes: center work time

Synthesis

- Display numbers 108, 109, 110, 111, 112.
- “What do you notice about these numbers?” (They all have 100. Some have a zero and some don’t. The numbers go in

order 8, 9, 10, 11, 12.)

Lesson Synthesis

🕒 10 min

"How did you and your partner work together during centers? What went well? What can we continue to work on?"

Lesson 17: Puppies and Tulips (Optional)

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6
Building Towards 1.OA.A.1

Teacher-facing Learning Goals

- Analyze and solve Compare story problems with unknowns in all positions.
- Write equations to represent story problems.

Student-facing Learning Goals

- Let's make origami and tell and solve story problems using the words "more" and "fewer."

Lesson Purpose

The purpose of this lesson is for students to use their understanding of addition and subtraction to solve Compare story problems.

This lesson is optional because it does not address any new mathematical content standards. This lesson does provide students with an opportunity to apply precursor skills of mathematical modeling. In this lesson, students make origami tulips and puppies and use problem sentence frames to tell puppy and tulip stories using "fewer" and "more". Students solve Compare, Difference Unknown story problems with language that suggests the opposite operation. For example, problems that use a comparison statement with "more," but require subtraction to solve. Students will work more with these problem types in grade 2.

When students make choices, adhere to constraints, and analyze real-world situations with mathematical ideas they model with mathematics (MP4).

Access for:



Students with Disabilities

- Action and Expression (Activity 1)



English Learners

- MLR8 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Colored pencils, crayons, or markers: Activity 1
- Connecting cubes: Activity 2
- Construction paper: Activity 1
- Glue: Activity 1
- Materials from a previous activity: Activity 2

Materials to Copy

- Origami Triangles: Puppies and Tulips (groups of 1): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	25 min
Activity 2	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

Think about a recent time from class when your students were confused. What did you do to support them in reasoning about their confusion together as a community of learners?

----- Begin Lesson -----

Warm-up

🕒 10 min

Notice and Wonder: Puppies and Tulips

Standards Alignments

Building Towards 1.OA.A.1

The purpose of this warm-up is to elicit the idea that there are two different types of origami in the picture, which will be useful in a later activity when students make origami and create story problems based on what they make. While students may notice and wonder many things about the image, it is important to discuss the different groups seen in the picture and what can be counted.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?



Student Responses

Students may notice:

- The paper is folded.
- There are eleven pieces of paper.
- Some papers are folded up and some are folded down.

Students may wonder:

- Is this origami?
- Are these animals?
- Will we make origami?

Launch

- Groups of 2
- Display the image.
- “What do you notice? What do you wonder?”
- 1 minute: quiet think time

Activity

- “Discuss your thinking with your partner.”
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- “How many of the origami pieces are facing in one direction? How many are facing in the other?” (Five are pointing up and six are pointing down.)

Activity 1

🕒 25 min

Puppy and Tulip Stories

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

The purpose of this activity is for students to create and make sense of comparison statements. Students make origami puppies and tulips. Then they decide which two out of four different comparison sentence frames using “fewer” and “more” make sense for their specific number of puppies and tulips.

Students can be given time at the end of this activity to decorate and glue their origami pieces on large construction paper.

Access for Students with Disabilities

Action and Expression: Provide Access for Physical Action. Provide access to pre-folded materials to reduce barriers for students who need support with fine motor skills and students who benefit from extra processing time.

Supports accessibility for: Fine Motor Skills, Organization, Visual-Spatial Processing

Materials to Gather

Colored pencils, crayons, or markers,
Construction paper, Glue

Materials to Copy

Origami Triangles: Puppies and Tulips (groups of 1)

Required Preparation

- Each group of 2 needs at least 20 paper triangles.

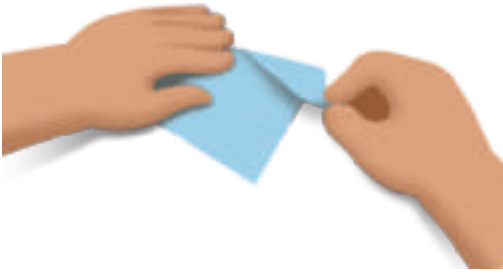
Student-facing Task Statement



- For each paper you fold, decide if it is a puppy or a tulip:
 - Total: _____
 - Tulips: _____
 - Puppies: _____

Launch

- Groups of 2
- Give students paper triangles.
- Display the image from the student book.
- “What do you notice? What do you wonder?” (It looks like the same image from the warm up, but now they look like puppies and flowers. What else could they be?)
- Demonstrate how to make origami puppies and tulips.
- “Put your finger in the middle of the long side of the triangle and fold each corner down. Repeat for the other side.”



1. Complete the 2 sentences that apply to your story.

- a. There are _____ *fewer* puppies than tulips.

There are _____ tulips.

How many puppies are there?

- b. There are _____ *fewer* tulips than puppies.

There are _____ tulips.

How many puppies are there?

- c. There are _____ *more* tulips than puppies.

There are _____ tulips.

How many puppies are there?

- d. There are _____ *more* puppies than tulips.

There are _____ tulips.

How many puppies are there?

Student Responses

Sample response for 8 tulips and 5 puppies:

There are 3 fewer puppies than tulips. There are 8 tulips.

There are 3 more tulips than puppies. There are 8 tulips.

Activity

- "Fold as many triangles as you can in 5 minutes."
- 5 minutes: partner work time
- "Record how many you have altogether, how many will be tulips, and how many will be puppies."
- "Now complete the sentences that apply to your story."
- Monitor for students who can explain which statements do and do not apply to their situation.

Synthesis

- Invite students to share the statements that apply to their situation with at least one other pair and explain why the others do not apply.
- Give students time to color their tulips and puppies and glue them down to construction paper.

Activity 2

🕒 15 min

Act it Out

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

The purpose of this activity is for students to solve addition and subtraction word problems by acting out the stories. Acting out gives students opportunities to make sense of a context (MP1).

In this activity, pairs of students share a story problem they worked on in the previous activity with another pair. Students use objects to act out the story, use any method that makes sense to them to solve and represent the situation, and write an equation. Some students may write an addition equation for a problem involving “more” and a subtraction equation involving “fewer,” while others write an addition or subtraction equation in both scenarios. They may also notice, regardless of the equation, the outcome is the same.

🌐 Access for English Learners

MLR8 Discussion Supports. Invite students to begin partner interactions by repeating the problem their partner created. This gives both students an opportunity to produce language.

Advances: Conversing

Materials to Gather

Connecting cubes, Materials from a previous activity

Required Preparation

- Each group needs their origami stories from the previous activity.

Student-facing Task Statement

Group A: Read your problems to your partner group.

Group B:

- Act out and solve the problems.
Show your thinking using drawings,

Launch

- Groups of 4
- “Take turns reading a problem you came up with in the previous activity. Your partner group will act out the story with connecting cubes, then solve the problems. Then switch roles.”

numbers, or words.

2. Write an equation to represent each story problem.
3. What do you notice about the story problems and the equations you wrote?

Switch roles.

Student Responses

Sample response:

1. If there are 5 more tulips than puppies and there are 7 tulips, then counting 5, 6, 7 means there are 2 puppies. If there are 5 fewer puppies than tulips and there are 7 tulips, then going back 5 from 7 is 2. This means there are 2 puppies.
2. $5 + 2 = 7$, $7 - 5 = 2$

Activity

- 10 minutes: group work time
- Monitor students who write addition and subtraction equations.

Synthesis

- Invite previously identified students to share their equations.
- Invite other students to explain how the equations represent the situation.
- “What do you notice about the story problems and the equations you wrote?” (They all involve the same numbers. The answer to the problem is the same even if the equation is different.)

Lesson Synthesis

🕒 10 min

“Today, we made origami puppies and tulips to help us learn more about how to write and solve comparison problems.”

Display problem:

“Tyler also made puppies and tulips.
He made 2 more tulips than puppies.
He made 7 tulips.”

“What equations can we write to represent this situation?” ($2 + 5 = 7$ and $7 - 2 = 5$)

“Explain to your partner how both of these equations represent the situation.”



Family Support Materials

Family Support Materials

Length Measurements Within 120 Units

In this unit, students measure length and count measurement units up to 120. They also solve addition and subtraction story problems with unknowns in all positions.

Section A: From Direct to Indirect Measurements

In this section, students use indirect comparison to order three objects by length. For example, if the highlighter is longer than the pen and the pencil is shorter than the pen, then we know the highlighter is longer than the pencil.



Section B: Measure to 120 by Iterating Units

In this section, students learn the conventions of length measurement and represent length measurements with a number and a unit. They understand that the length measurement of an object is the number of same-size length units that span it without gaps or overlaps.



Students use manipulatives (connecting cubes, paper clips, and base-ten cubes) as length units. They use base-ten cubes to measure lengths that are longer than 99 units as they expand their counting and number-writing skills to 120. In the example, the shoe is 15 connecting cubes long.

Section C: All Kinds of Story Problems

In this section, students solve all types of story problems with unknowns in all positions. Students use the context of measurement which invites them to build and compare concrete objects as they solve problems. They interpret diagrams that represent these problems. Students will be asked to solve a problem like:

Kiran's bracelet is 14 cubes long.

His sister's bracelet is 10 cubes long.

How much longer is Kiran's bracelet than his sister's?

And make sense of this representation of the problem:



Students solve take away problems when the start is unknown. These problems can be tricky because the action is take away but students need to add to solve the problem.

For example:

Elena has some beads in a box.
She uses 5 of them to make a bracelet.
She has 10 beads left.
How many beads were in Elena's box?

An equation that represents the situation is $? - 5 = 10$. However, students might write $10 + 5 = ?$ to find the answer to the question.

It is important for students to explain how the equation they wrote matches the story problem.

Try it at home!

Near the end of the unit ask your student to measure different objects around the home using paper clips and write the measurements down.

Questions that may be helpful as they work:

- What is the longest object you measured? The shortest object?
- How much longer is the _____ than the _____?
- What is the length of _____ and _____ combined?

Unit Assessments

Check Your Readiness A, B and C
End-of-Unit Assessment

Grade 1, Unit 6 Section A Checkpoint

- Order objects by length.
- Compare the lengths of objects indirectly.

[illegible]

Grade 1, Unit 6 Section B Checkpoint

[illegible]

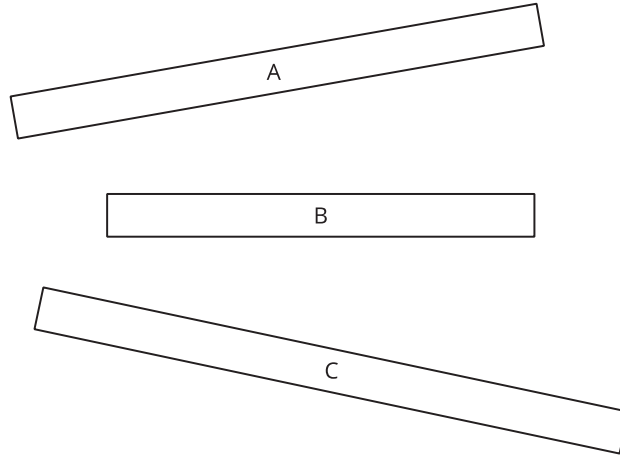
**Grade 1, Unit 6
Section C
Checkpoint**

- Solve story problems within 20 with unknowns in all positions.

[illegible]

Length Measurements Within 120 Units: End-of-Unit Assessment

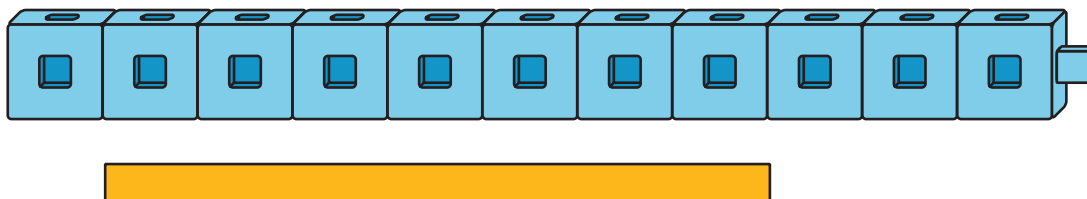
1.



- a. Write a sentence comparing the length of Rectangle A and the length of Rectangle B.

- b. Write a sentence comparing the length of Rectangle A and the length of Rectangle C.

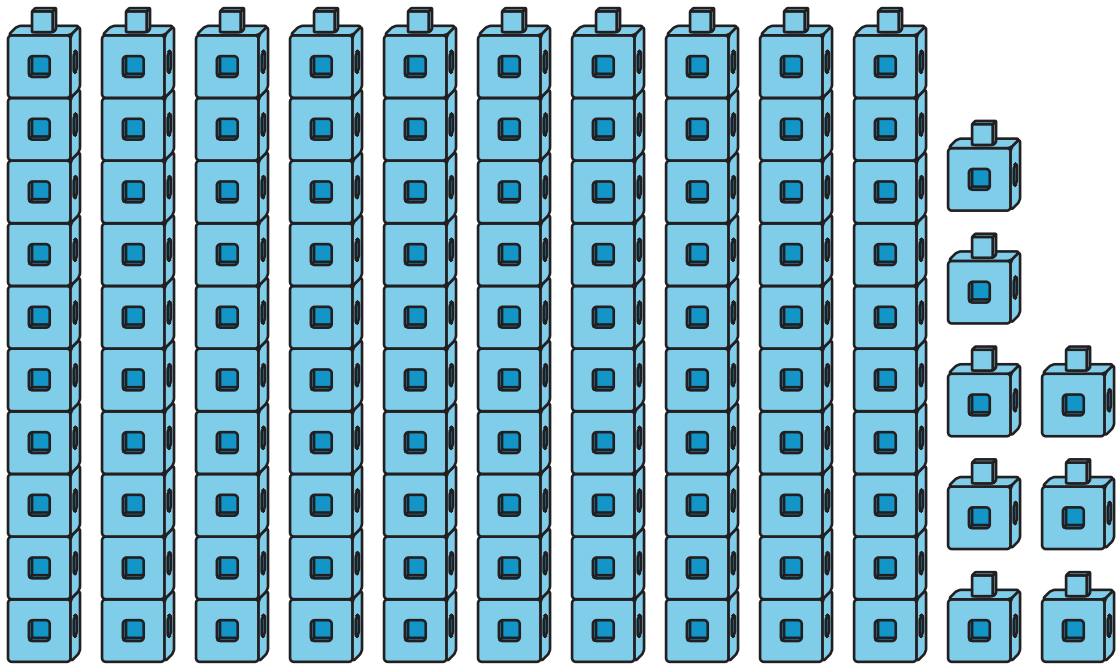
2. How many connecting cubes long is the rectangle?



3. The straw is longer than the pencil.
The noodle is shorter than the pencil.
Circle **2** true statements.

- A. The straw is longer than the noodle.
- B. The straw is shorter than the noodle.
- C. The noodle is longer than the straw.
- D. The noodle is shorter than the straw.

4.



How many connecting cubes are there? _____

5. Mai's straw is 15 cubes long.

Noah's straw is 7 cubes shorter than Mai's straw.

How many cubes long is Noah's straw?

Show your thinking using drawings, numbers, words, or equations.

6. There were some students on the bus.

7 students got off at the bus stop.

Now there are 6 students on the bus.

- a. Write an equation that matches the story. Use a ? for the unknown number.

How does the equation match the story?

Show your thinking using drawings, numbers, or words.

- b. How many students were on the bus before the stop?

Show your thinking using drawings, numbers, words, or equations.

Assessment Answer Keys

Check Your Readiness A, B and C
End-of-Unit Assessment

Assessment Answer Keys

Assessment: Section A Checkpoint

Teacher Instructions

For this Checkpoint Assessment, a full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

- Order objects by length.
- Compare the lengths of objects indirectly.
 - Compare objects directly by lining them up at an endpoint.
 - Use precise language ("longer than," "shorter than") to describe and compare lengths of objects.
 - Order three objects by length.
 - Compare the length of two objects indirectly using a third object.
 - Choose an object to compare the lengths of other objects indirectly.

Assessment: Section B Checkpoint

Teacher Instructions

For this Checkpoint Assessment, a full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

- Lay length units end-to-end with no gaps or overlaps and count the units to determine length.
 - Measure length by iterating length units.
 - Explain why measurements of the length of the same object can be different.
- Count groups of up to 120 objects and write a number to represent them.
 - Read and write numbers 100–120.
 - Count a group of 100–120 objects and represent it with a written number.

Assessment: Section C Checkpoint

Teacher Instructions

For this Checkpoint Assessment, a full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

- Solve story problems within 20 with unknowns in all positions.
 - Retell the story.
 - Represent the story with objects or drawings.
 - Explain how their representation matches the story.
 - Represent the story with equations.

Assessment: End-of-Unit Assessment

Teacher Instructions

Give students access to connecting cubes.

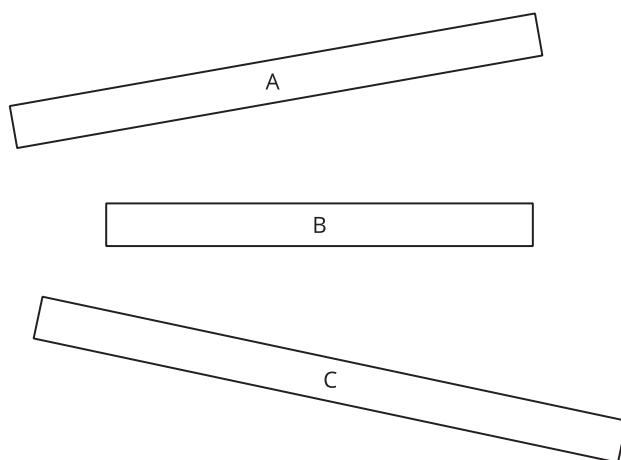
Problem 1

Standards Alignments

Addressing 1.MD.A.1

Narrative

Students compare the lengths of rectangles. The rectangles do not have the same orientation and are not lined up end to end. Students should have access to connecting cubes for this item. Although students can measure the rectangles in order to compare, this is not necessary as they are noticeably different in each case.



- Write a sentence comparing the length of Rectangle A and the length of Rectangle B.
- Write a sentence comparing the length of Rectangle A and the length of Rectangle C.

Solution

- A is longer than B (or B is shorter than A).
- A is shorter than C (or C is longer than A).

Problem 2

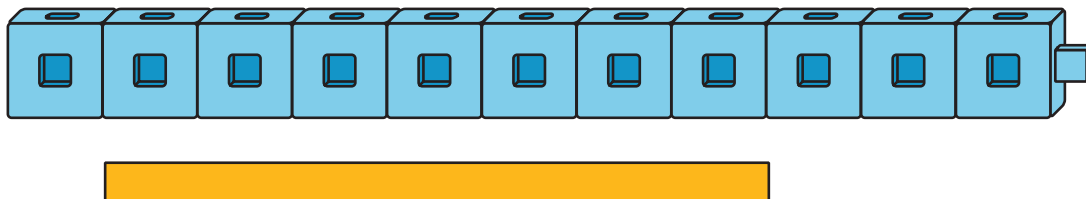
Standards Alignments

Addressing 1.MD.A.2

Narrative

Students measure the length of a rectangle using connecting cubes. They will need to count only the connecting cubes that go from the beginning of the rectangle to its end and not the extra cubes. Students who give an answer of 8 or 10 have probably counted the extra cubes on one of the two ends that extend beyond the segment. Students may answer 6 if they assume there are 10 cubes and subtract the extra 4 cubes on either side of the rectangle.

How many connecting cubes long is the rectangle?



Solution

7

Problem 3

Standards Alignments

Addressing 1.MD.A.1

Narrative

Students compare the length of two objects by comparing both with a third object. Because they are not actually measuring the objects in question, students could select the wrong answers because they do not understand the given information or do not read carefully.

The straw is longer than the pencil.
 The noodle is shorter than the pencil.
 Circle **2** true statements.

- A. The straw is longer than the noodle.
- B. The straw is shorter than the noodle.
- C. The noodle is longer than the straw.
- D. The noodle is shorter than the straw.

Solution

["A", "D"]

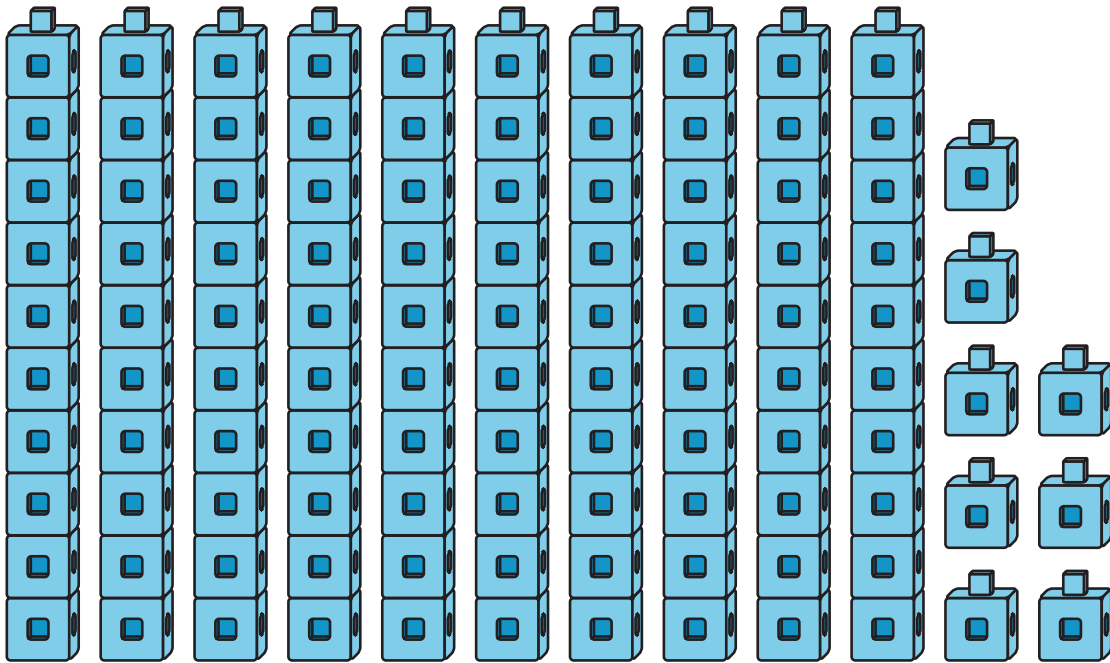
Problem 4

Standards Alignments

Addressing 1.NBT.A.1

Narrative

Students identify the number of objects in a collection between 100 and 120, grouped as 10 tens and some ones. If students miscount the towers of ten they may write 98 or 118, for example, and this does not necessarily show a conceptual misunderstanding.



How many connecting cubes are there? _____

Solution

108

Problem 5

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6

Narrative

Students subtract within 20 to solve a Compare problem with the smaller value unknown, in a measurement context. They may draw a picture, count back, or may subtract some ones to make 10 and then subtract the rest of the ones.

Mai's straw is 15 cubes long.

Noah's straw is 7 cubes shorter than Mai's straw.

How many cubes long is Noah's straw?

Show your thinking using drawings, numbers, words, or equations.

Solution

8 cubes. Sample response: $15 - 5 = 10$, $10 - 2 = 8$

Problem 6

Standards Alignments

Addressing 1.OA.A.1

Narrative

Students write an equation to represent a Start Unknown story problem and then they find the solution to the problem. Some students may write the equation $7 + 6 = ?$ or the equation $6 + 7 = ?$. These equations have the same solution as $? - 7 = 6$ and represent a way of solving the problem which students might use.

If students do not read carefully they may find the value of $7 - 6$ or they may find $7 + 6$ without understanding how it relates to the problem. While they may use addition to solve the problem, it is important that students identify the action in the problem as subtraction and understand that when 7 students get off the bus, that means there are 7 fewer people on the bus.

There were some students on the bus.

7 students got off at the bus stop.

Now there are 6 students on the bus.

- a. Write an equation that matches the story. Use a ? for the unknown number.

How does the equation match the story?

Show your thinking using drawings, numbers, or words.

- b. How many students were on the bus before the stop?
Show your thinking using drawings, numbers, words, or equations.

Solution

- a. Sample responses:

$? - 7 = 6$. The ? is for the students on the bus before the stop because I don't know how many there are. Then I took away 7 for the 7 who got off and that leaves 6.

$7 + 6 = ?$ I thought about 7 students who got off the bus and added the 6 who were still on the bus to get the students on the bus before the stop.

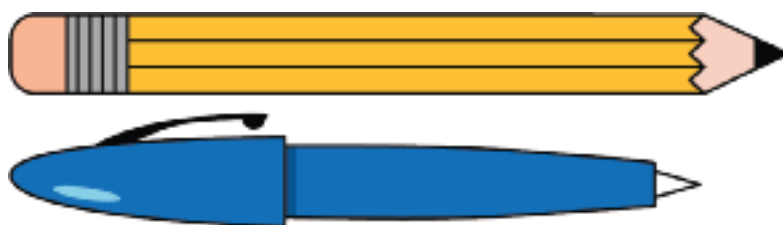
- b. 13. Sample response: I added 4 to 6 to get 10 and then 3 more to get 13.

Lesson Cool Downs

Lesson 2: Compare the Length of Objects Indirectly

Cool Down: Compare the Pencil and Marker

The pencil is longer than the pen.



The marker is shorter than the pen.



Use the words **pencil** and **marker** to complete this sentence:

The _____ is shorter than the _____.

Lesson 7: Measure Length with Different Length Units

Cool Down: The Length of a Shoe



Priya says that the length of the shoe is 5 paper clips.

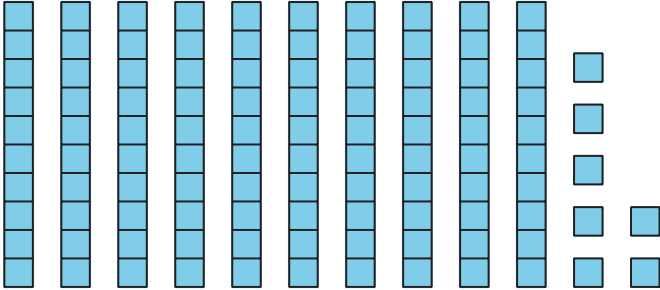
Is her measurement accurate? Why or why not?

Lesson 9: Write Numbers to 120

Cool Down: How Many Cubes?

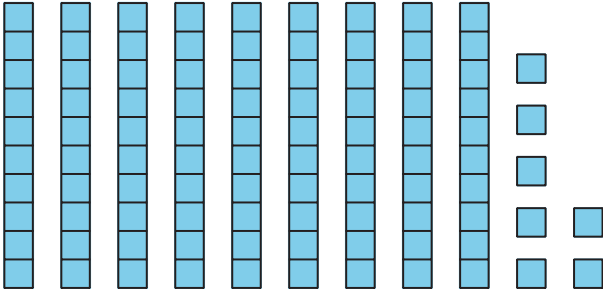
How many cubes are there?

1.



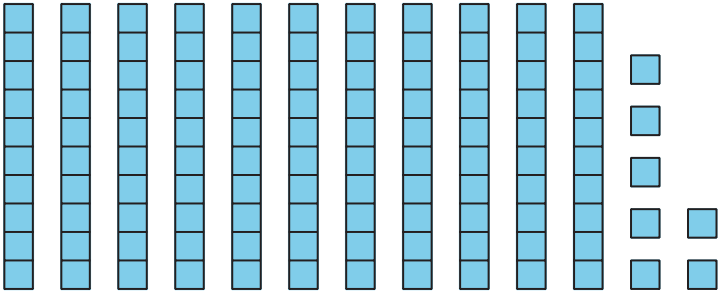
A visual representation of the number 106 using base ten blocks. There are 10 vertical rods, each composed of 10 small cubes, representing 10 tens. To the right of the rods are 6 individual small cubes representing 6 ones.

2.



A visual representation of the number 105 using base ten blocks. There are 10 vertical rods, each composed of 10 small cubes, representing 10 tens. To the right of the rods are 5 individual small cubes representing 5 ones.

3.



A visual representation of the number 107 using base ten blocks. There are 10 vertical rods, each composed of 10 small cubes, representing 10 tens. To the right of the rods are 7 individual small cubes representing 7 ones.

Lesson 11: How Long Are Our Shoes?

Cool Down: Measure Shoes

Priya's shoe is 6 cubes long.

Her teacher's shoe is 13 cubes long.

How much longer is the teacher's shoe than Priya's shoe?

Show your thinking using drawings, numbers, words, or equations.

Lesson 13: Solve Take From Story Problems

Cool Down: Clare's Beads

Clare has some beads.

She uses 7 beads to make a bracelet.

She has 8 beads left.

How many beads did Clare have to start?

Show your thinking using drawings, numbers, or words.

Lesson 14: Which Equation Matches?

Cool Down: Find the Match

Jada has some stamps.

She gives Tyler 4 stamps.

Now Jada has 9 stamps left.

How many stamps did Jada have before she gave some to Tyler?

Circle the 2 equations that match the story.

A. $9 + 4 = ?$

B. $9 - 4 = ?$

C. $? - 4 = 9$

D. $? + 4 = 9$

Lesson 15: Write Equations for Story Problems

Cool Down: Write An Equation

Elena has 10 fewer paper stars than Priya.

Priya has 20 paper stars.

How many paper stars does Elena have?

Write an equation that represents the problem.

Put a box around the answer to the problem.

Instructional Masters

Instructional Masters for Length Measurements Within 120 Units

address	title	students written per copy	on? requires cutting?	card stock recommended?	color paper recommended?
Activity Grade1.6.8.2	Representations of Numbers Over 80	2	no	yes	no
Activity Grade1.6.10.1	Estimate and Measure Stage 1 Recording Sheet	1	yes	no	no
Center	Estimate and Measure Stage 1 Recording Sheet	1	yes	no	no
Activity Grade1.6.6.1	Measure with Paper Clips	1	no	no	no
Activity Grade1.6.4.1	How Close? Stage 3 Recording Sheet	1	yes	no	no
Center	How Close? Stage 3 Recording Sheet	1	yes	no	no
Activity Grade1.6.17.1	Origami Triangles: Puppies and Tulips	1	yes	yes	no
Activity Grade1.6.14.1	Story Problem Cards, Unknowns in All Positions	2	no	yes	no
Activity Grade1.6.12.3	Write the Number Stage 3 Gameboard	2	no	no	no
Center	Write the Number Stage 3 Gameboard	2	no	no	no
Assessment Grade1.6	Checkpoint	0	yes	no	no
Activity Grade1.6.5.1	Lengths of Creepy, Crawly Things	1	yes	no	no

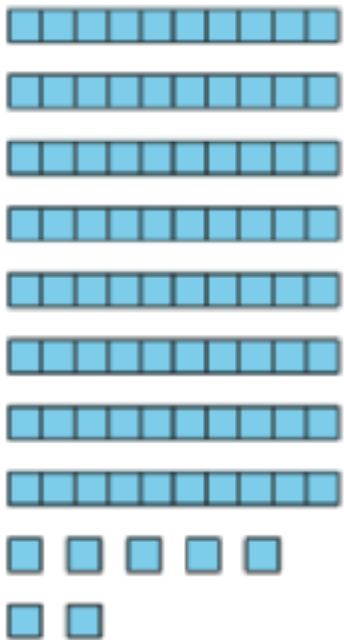
Activity Grade1.6.16.1	Counting Collections Stage 3 Recording Sheet	1	yes	no	no	no
Center	Counting Collections Stage 3 Recording Sheet	1	yes	no	no	no
Assessment Grade1.6	Checkpoint	0	yes	no	no	no
Activity Grade1.6.5.2	More Creepy, Crawly Things	1	yes	no	no	no
Assessment Grade1.6	Checkpoint	0	yes	no	no	no
Center	Target Numbers Stage 1 Recording Sheet	1	yes	no	no	no
Center	Target Numbers Stage 2 Recording Sheet	1	yes	no	no	no
Center	Target Numbers Stage 3 Recording Sheet	1	yes	no	no	no
Center	Five in a Row Addition and Subtraction Stages 1 and 2 Gameboard	2	no	no	no	no
Center	Five in a Row Addition and Subtraction Stages 1 and 2 Gameboard	2	no	no	no	no
Center	Five in a Row Addition and Subtraction Stage 3 Gameboard	2	no	no	no	no
Center	Five in a Row Addition and Subtraction Stage 4 Gameboard	2	no	no	no	no
Center	Number Cards, Multiples of 10 (0-90)	2	no	yes	no	no
Center	Five in a Row Addition and Subtraction Stage 5 Gameboard	2	no	no	no	no

Center	Five in a Row Addition and Subtraction Stage 6 Gameboard	2	no	no	no	no
Center	Get Your Numbers in Order Stage 1 Gameboard	2	yes	no	no	no
Center	How Close? Stage 1 Recording Sheet	1	yes	no	no	no
Center	How Close? Stage 2 Recording Sheet	1	yes	no	no	no
Center	Write the Number Stage 1 Gameboard	2	no	no	no	no
Center	Write the Number Stage 2 Gameboard	2	no	no	no	no

Representations of Numbers Over 80

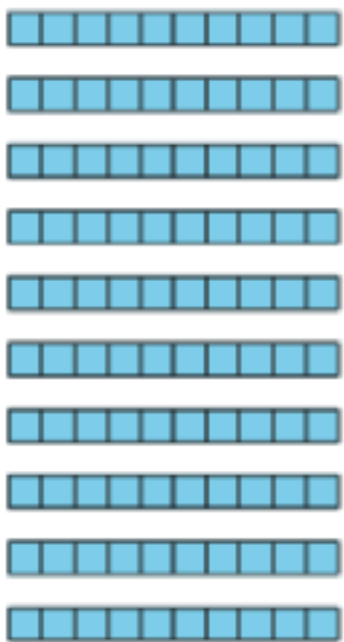
Representations of Numbers over 80

Card A



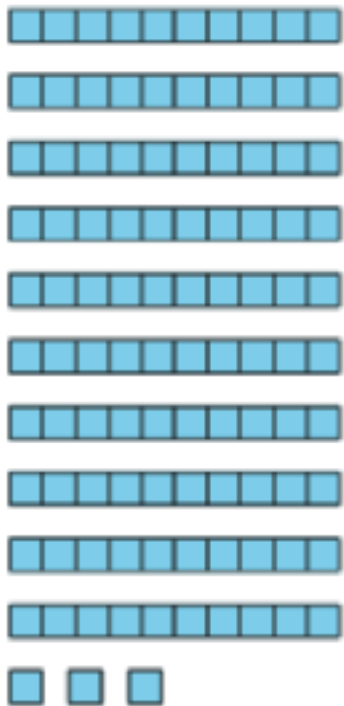
Representations of Numbers over 80

Card B



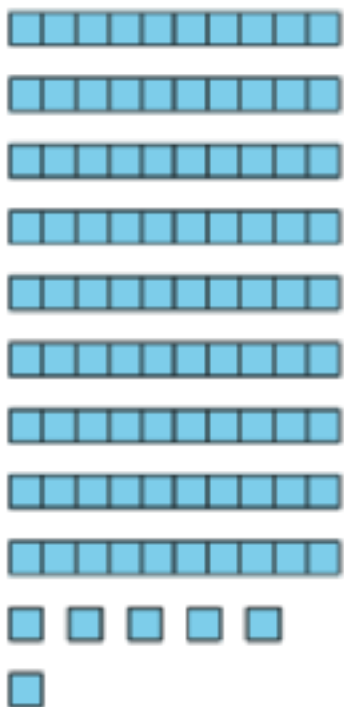
Representations of Numbers over 80

Card C



Representations of Numbers over 80

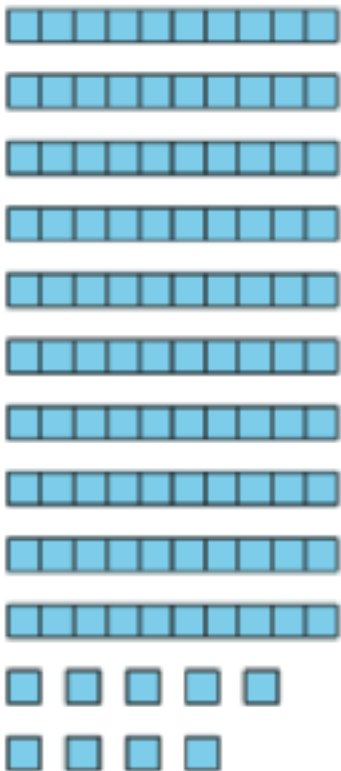
Card D



Representations of Numbers Over 80

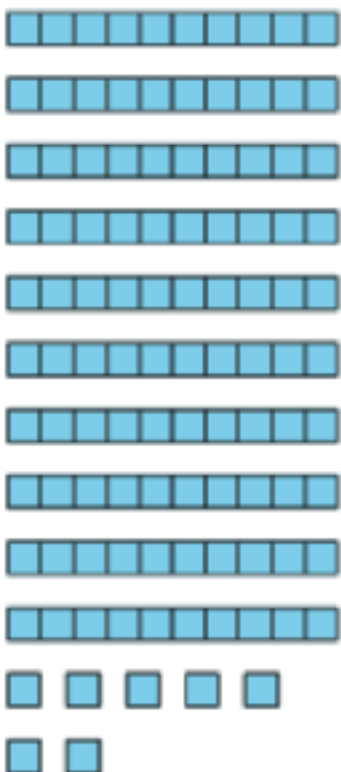
Representations of Numbers over 80

Card E



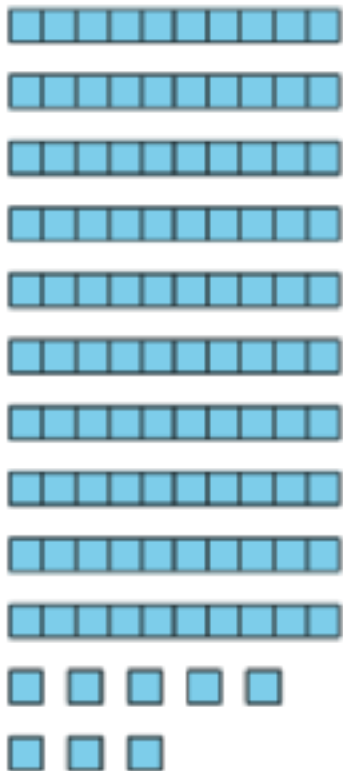
Representations of Numbers over 80

Card F



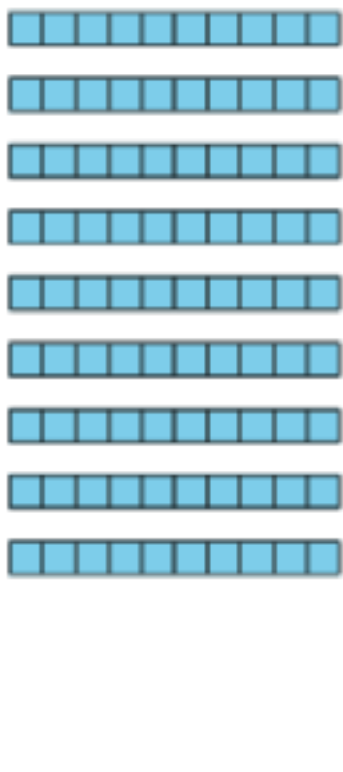
Representations of Numbers over 80

Card G



Representations of Numbers over 80

Card H



Representations of Numbers Over 80

Representations of Numbers over 80

Card I

100

Representations of Numbers over 80

Card J

107

Representations of Numbers over 80

Card K

87

Representations of Numbers over 80

Card L

103

Representations of Numbers Over 80

Representations of Numbers over 80

Card M

108

Representations of Numbers over 80

Card N

90

Representations of Numbers over 80

Card O

96

Representations of Numbers over 80

Card P

109

Estimate and Measure Stage 1 Recording Sheet

Directions:

- Choose an object.
- Choose a unit to measure the length. (paper clip, tiles, small cubes, connecting cubes.)
- Estimate how many units long your object is.
- Measure and record the actual measurement.

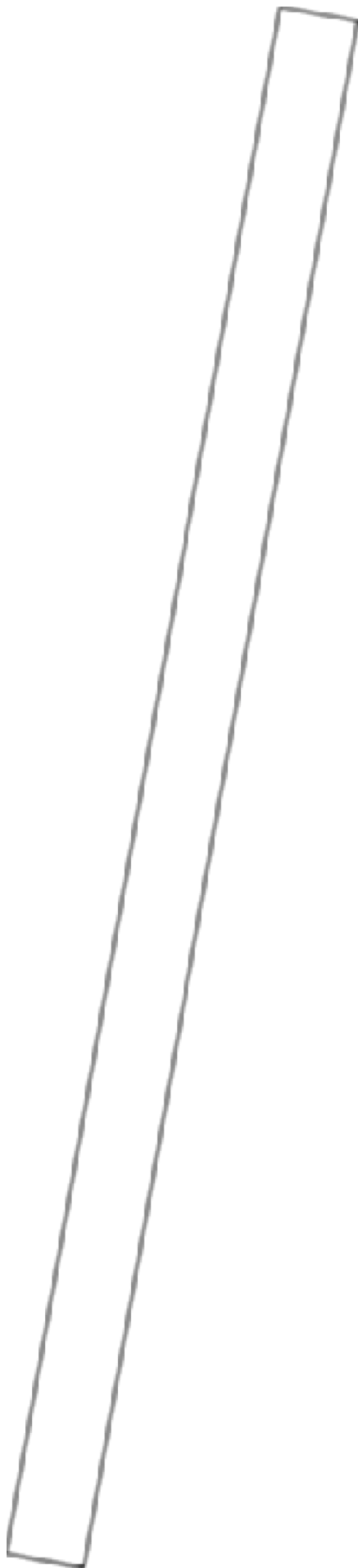
[illegible]

Estimate and Measure Stage 1 Recording Sheet

Directions:

- Choose an object.
- Choose a unit to measure the length. (paper clip, tiles, small cubes, connecting cubes.)
- Estimate how many units long your object is.
- Measure and record the actual measurement.

[illegible]



Directions:

- Each partner:
 - Take 7 cards.
 - Choose 4 cards to make 2 two-digit numbers.
 - Write an equation to show the sum of the numbers you made.
 - Compare sums with your partner, whoever is closer to 100 wins a point.
- Take 4 new cards and start the next round.

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 = _____

Directions:

- Each partner:
 - Take 7 cards.
 - Choose 4 cards to make 2 two-digit numbers.
 - Write an equation to show the sum of the numbers you made.
 - Compare sums with your partner, whoever is closer to 100 wins a point.
- Take 4 new cards and start the next round.

		+			=	
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		+			=	
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		+			=	
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		+			=	
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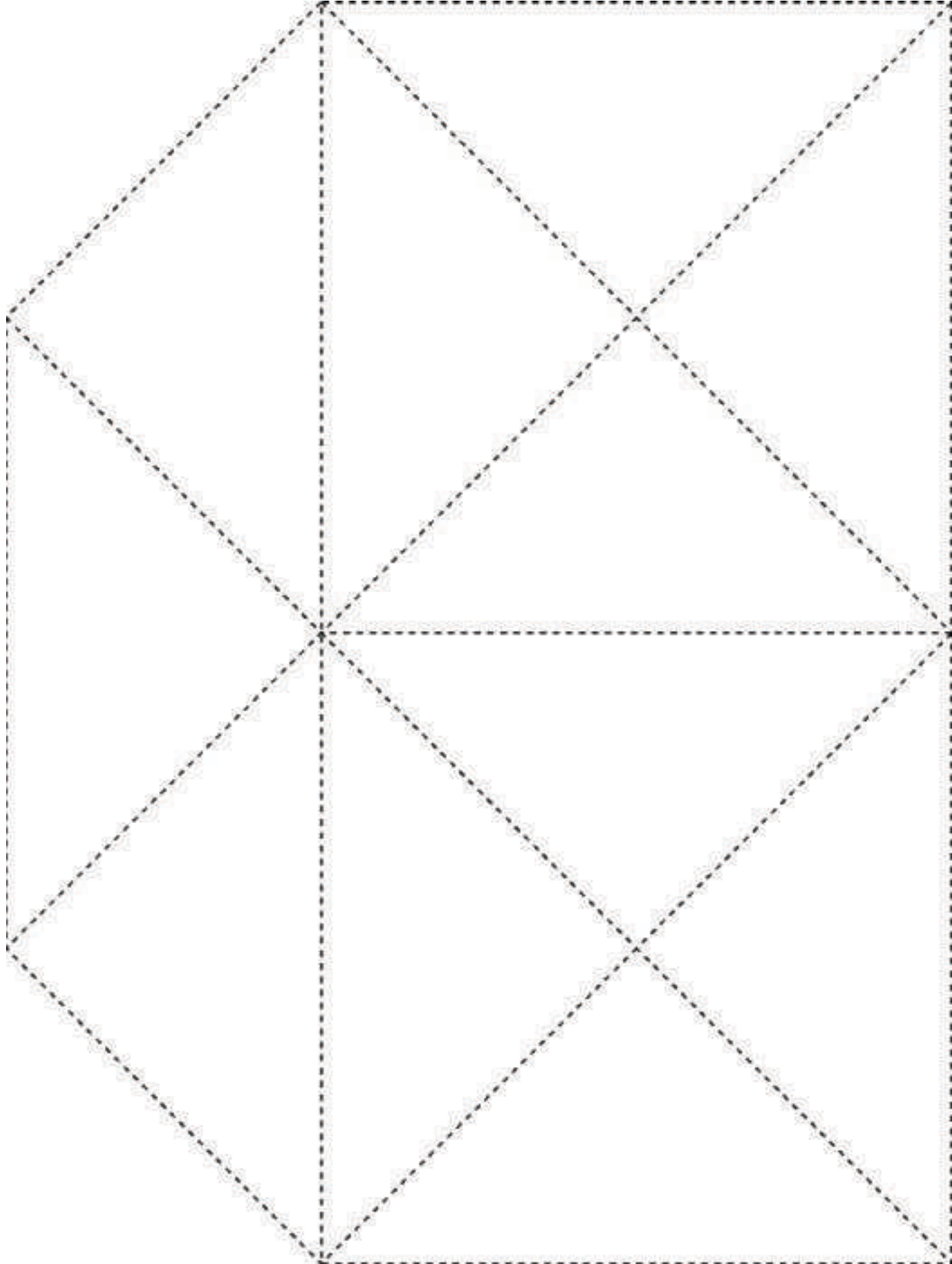
 =

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 =



Story Problem Cards, Unknowns in All Positions

Story Problem Cards, Unknowns in All Positions

A1

Jada uses 8 pictures of people.
She also uses some pictures of animals.
Altogether she has 11 pictures.
How many pictures of animals does she use?

Story Problem Cards, Unknowns in All Positions

A4

Elena uses 9 more stickers than Andre.
Andre uses 5 stickers.
How many stickers does Elena use?

Story Problem Cards, Unknowns in All Positions

A2

Kiran has 19 pictures.
He gives some to his sister.
Now, he has 11 pictures left.
How many pictures did Kiran give to his sister?

Story Problem Cards, Unknowns in All Positions

A5

Noah has 6 stamps.
Tyler has 16 stamps.
How many fewer stamps does Noah have than Tyler?

Story Problem Cards, Unknowns in All Positions

A3

Han's collage has 16 stamps.
Lin's collage has 10 fewer stamps.
How many stamps does Lin's collage have?

Story Problem Cards, Unknowns in All Positions

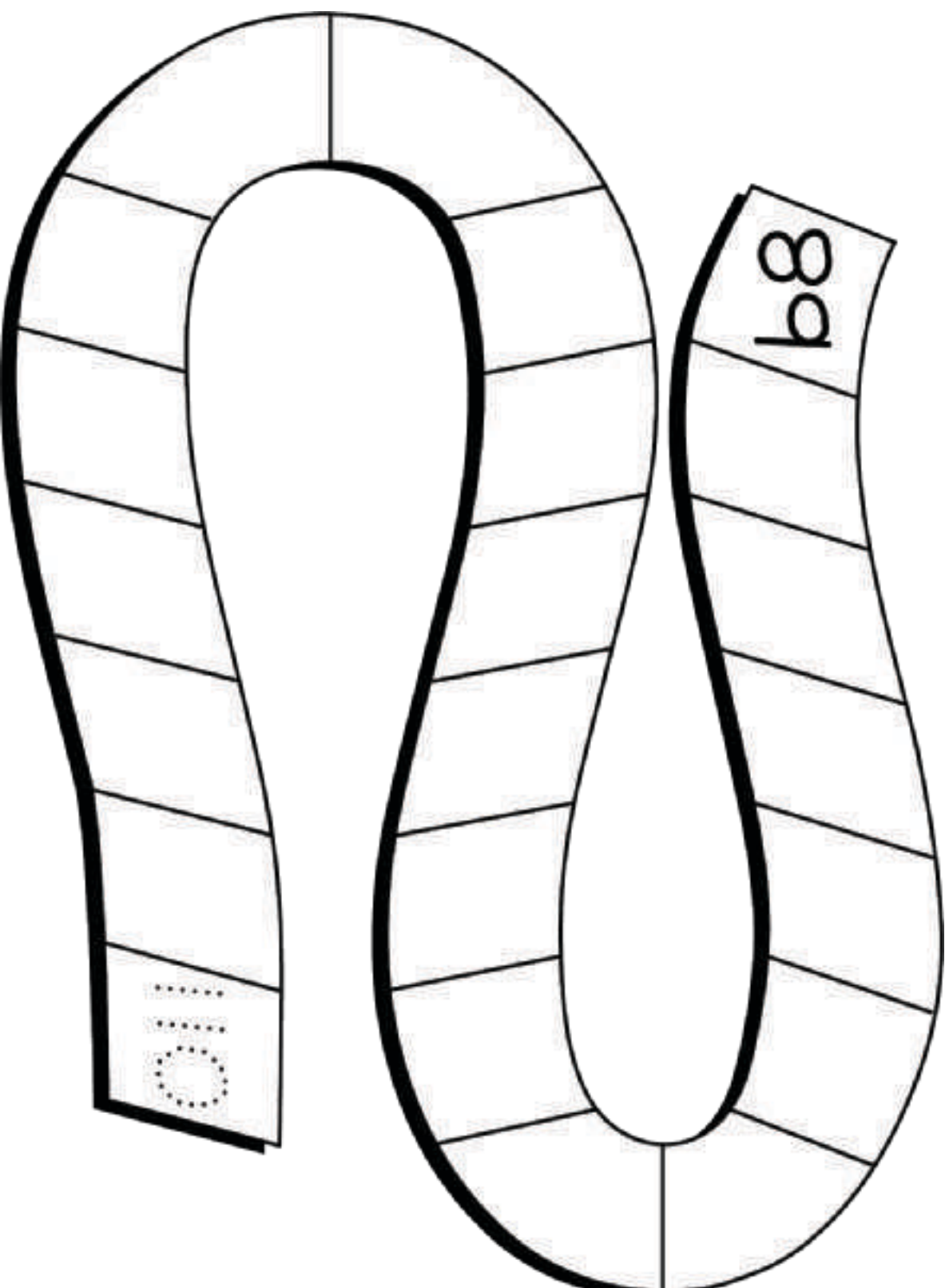
A6

Clare has some stickers.
She gives 9 of them to her friends.
She has 5 stickers left.
How many stickers did Clare have to start?

Write the Number Stage 3 Gameboard

Directions: (Count by 1.)

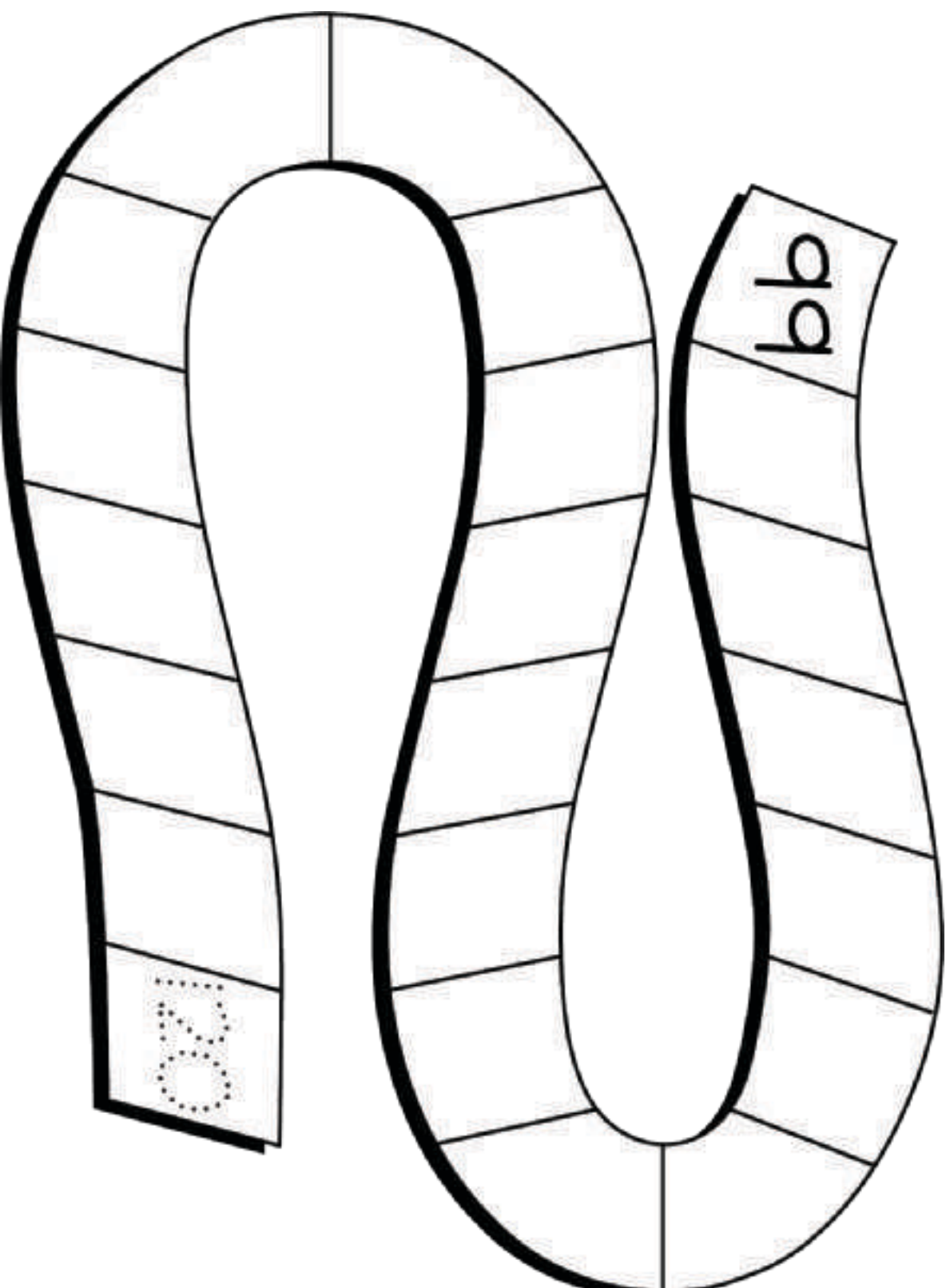
- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



Write the Number Stage 3 Gameboard

Directions: (Count by 1.)

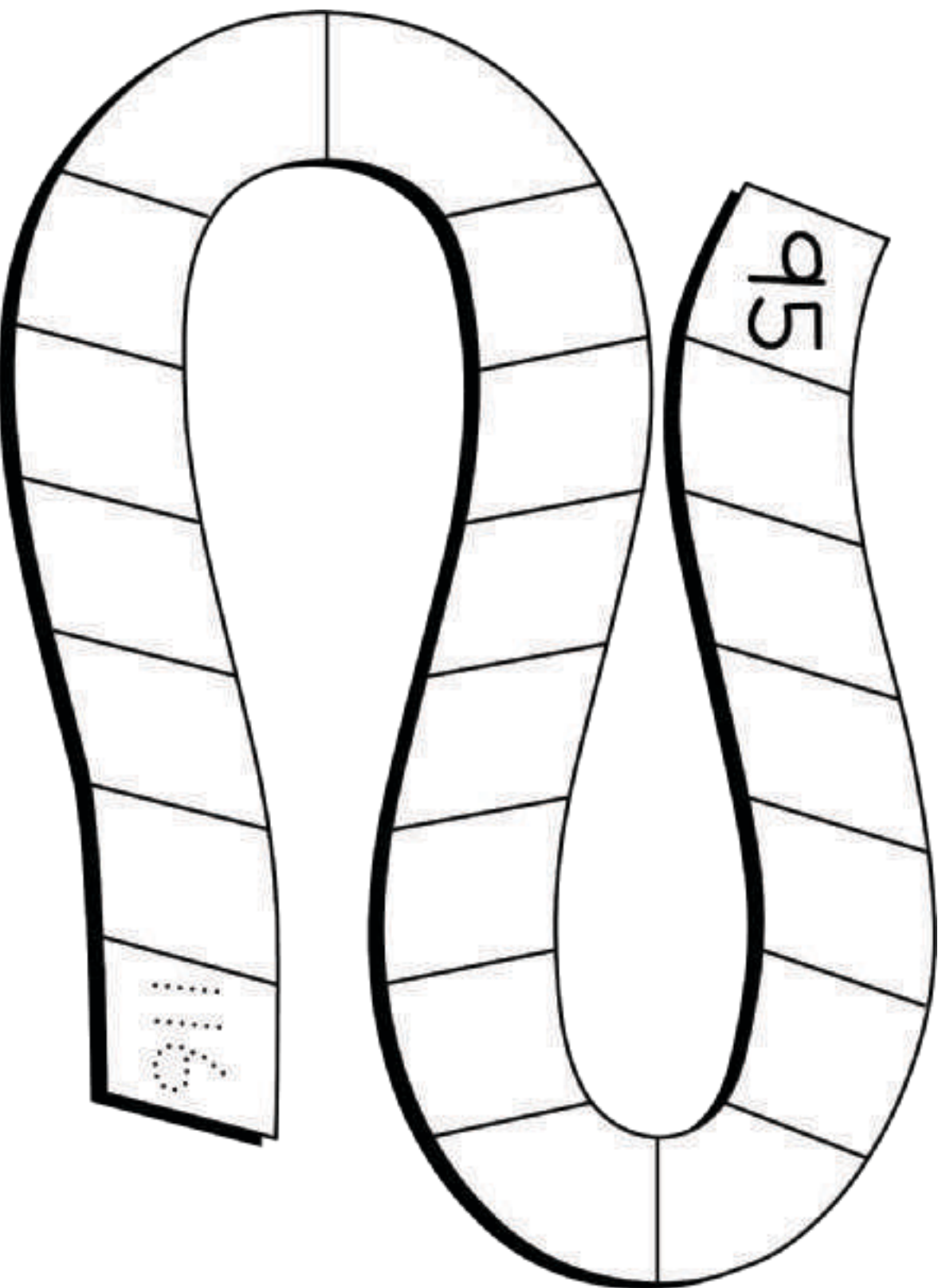
- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



Write the Number Stage 3 Gameboard

Directions: (Count by 1.)

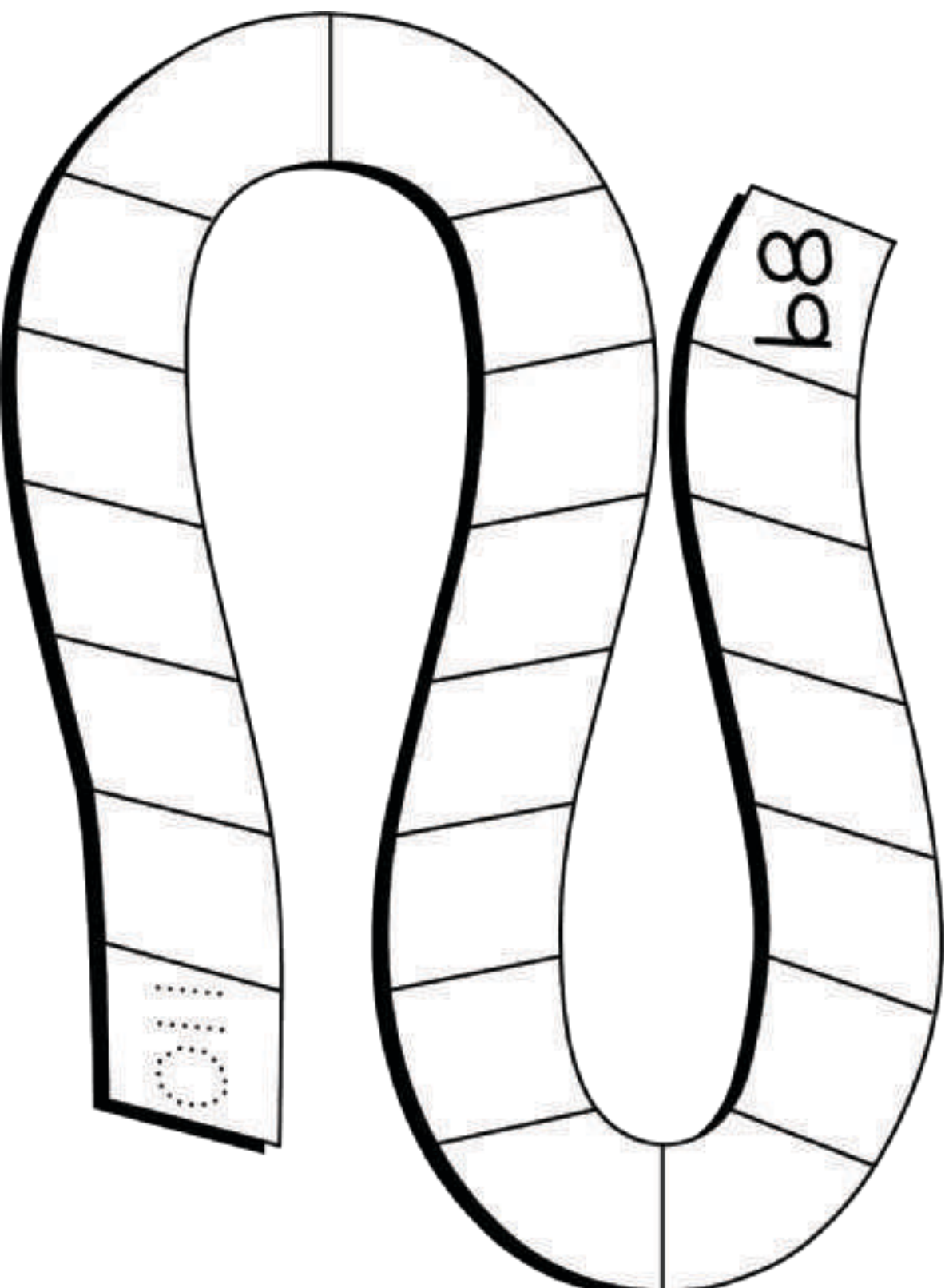
- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



Write the Number Stage 3 Gameboard

Directions: (Count by 1.)

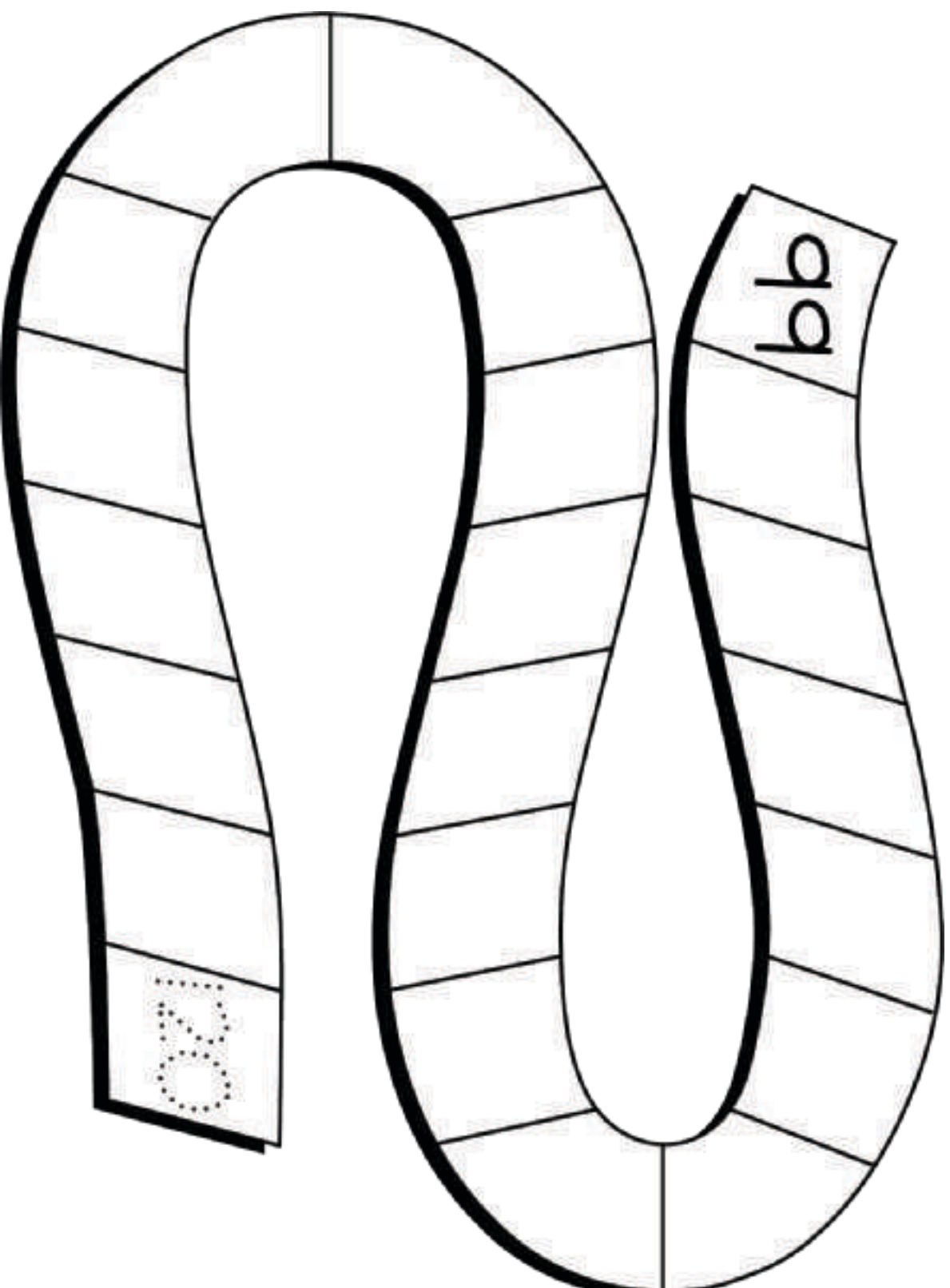
- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



Write the Number Stage 3 Gameboard

Directions: (Count by 1.)

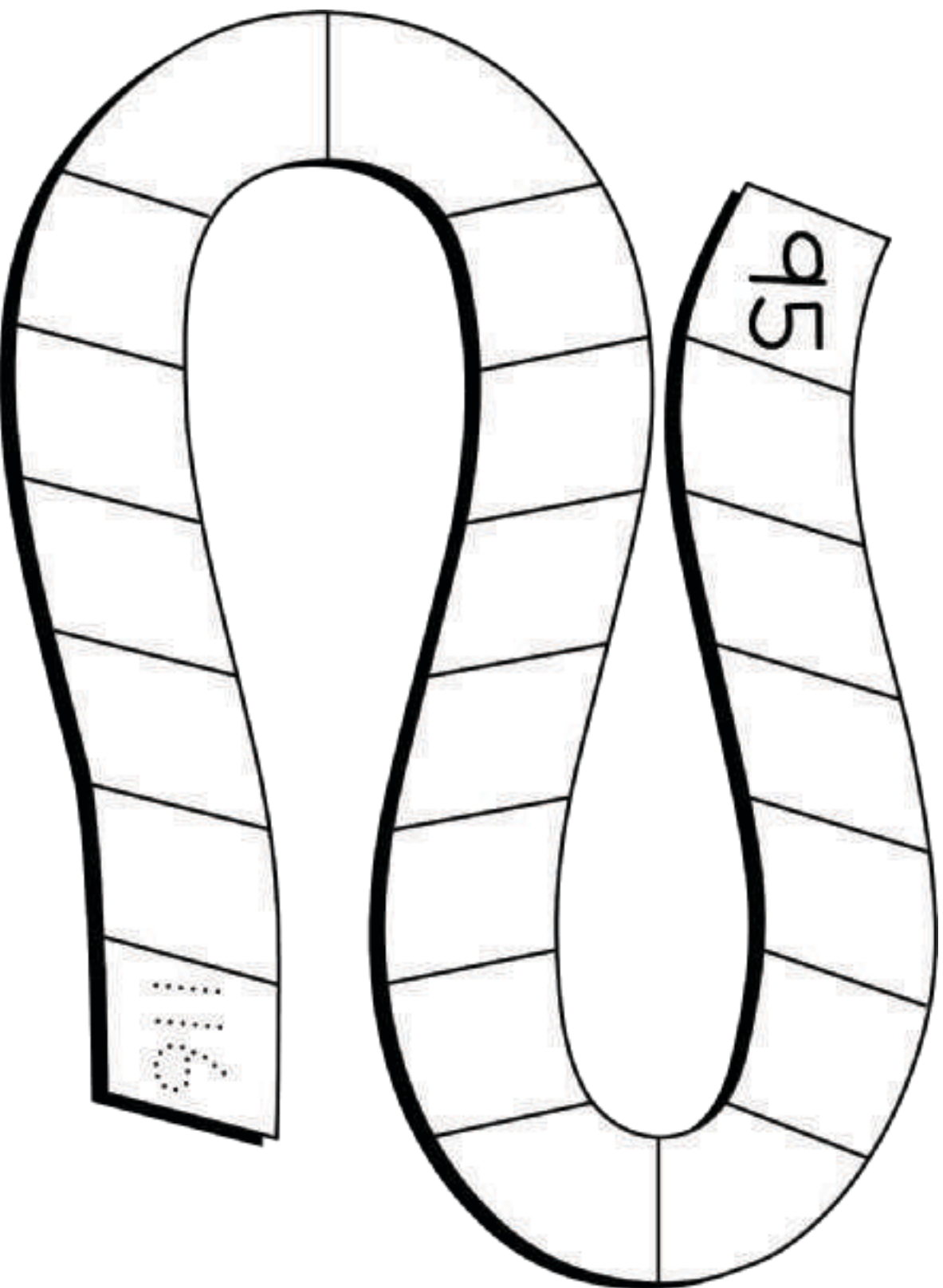
- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



Write the Number Stage 3 Gameboard

Directions: (Count by 1.)

- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



Checkpoint

Grade 1, Unit 6 Section A Checkpoint

- Order objects by length.
- Compare the lengths of objects indirectly.

[illegible]

Lengths of Creepy, Crawly Things

1. The grasshopper is the same length as a tower of _____ connecting cubes.



2. The earthworm is the same length as a tower of _____ connecting cubes.



3. The caterpillar is the same length as a tower of _____ connecting cubes.



Lengths of Creepy, Crawly Things

4. The dragonfly is the same length as a tower of _____ connecting cubes.



5. The praying mantis is the same length as a tower of _____ connecting cubes.



Counting Collections Stage 3 Recording Sheet

Directions:

1. Record an estimate that is:

too low	about right	too high

2. Count your collection. Show how you counted.

Counting Collections Stage 3 Recording Sheet

Directions:

1. Record an estimate that is:

too low	about right	too high

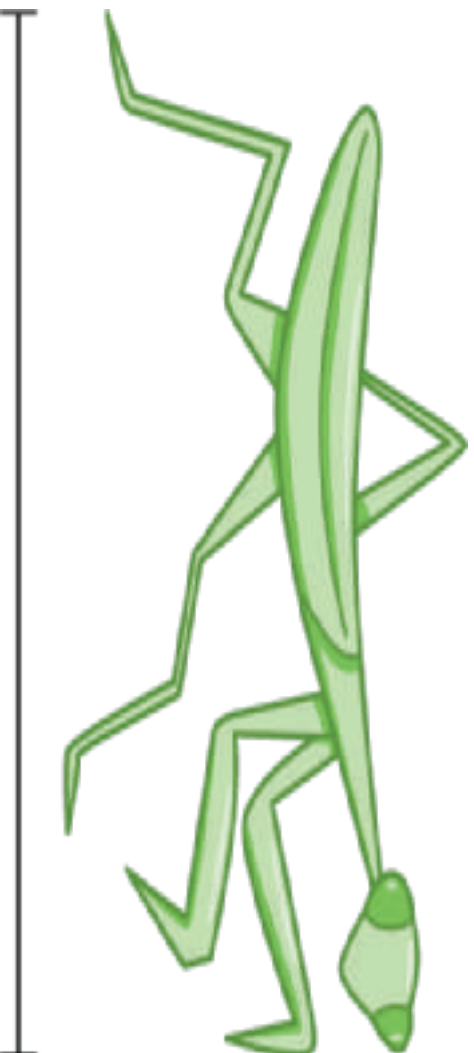
2. Count your collection. Show how you counted.

Checkpoint

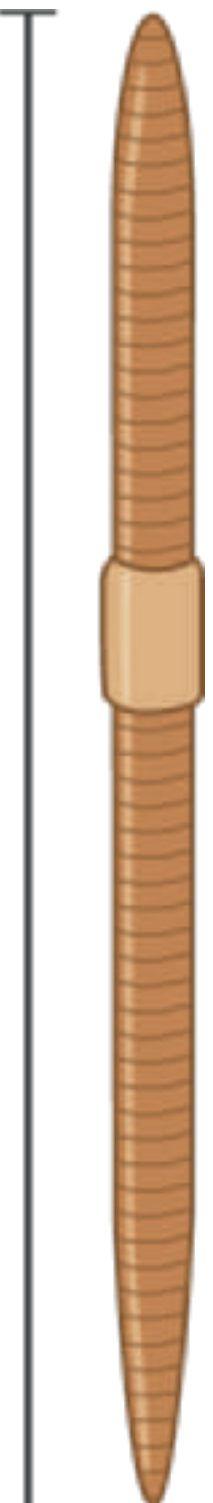
Grade 1, Unit 6 Section B Checkpoint

[illegible]

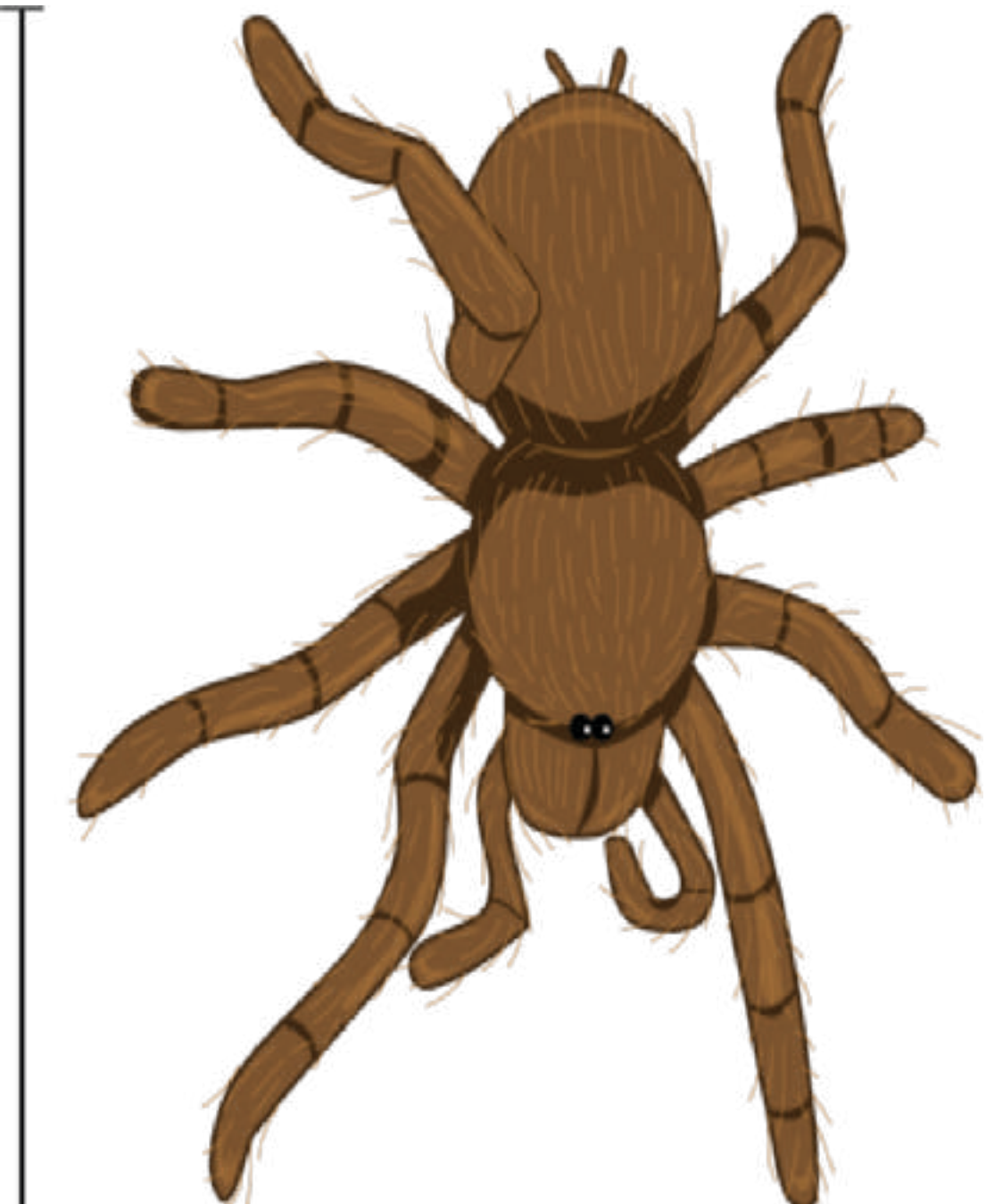
1. The praying mantis is _____ cubes long.



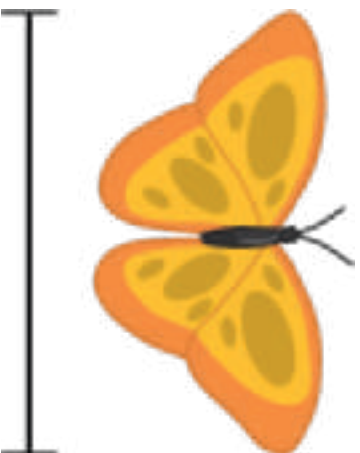
2. The earthworm is _____ cubes long.



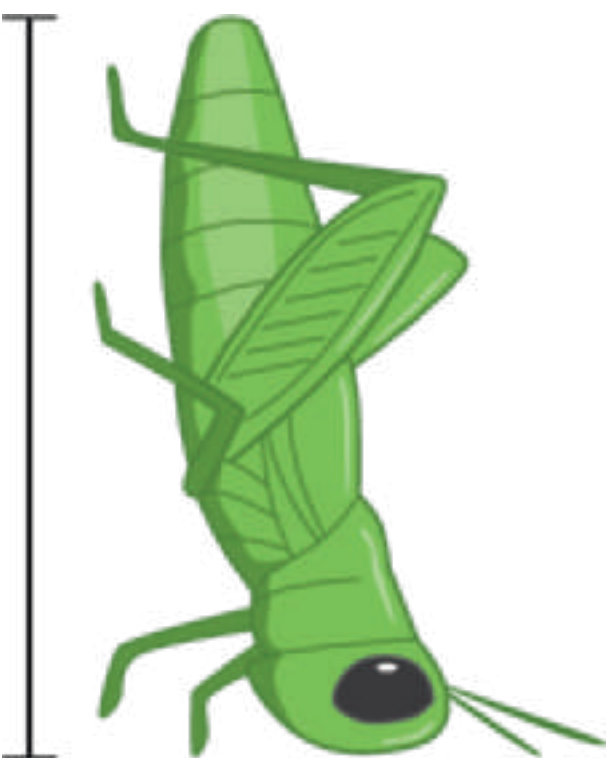
3. The tarantula is _____ cubes long.



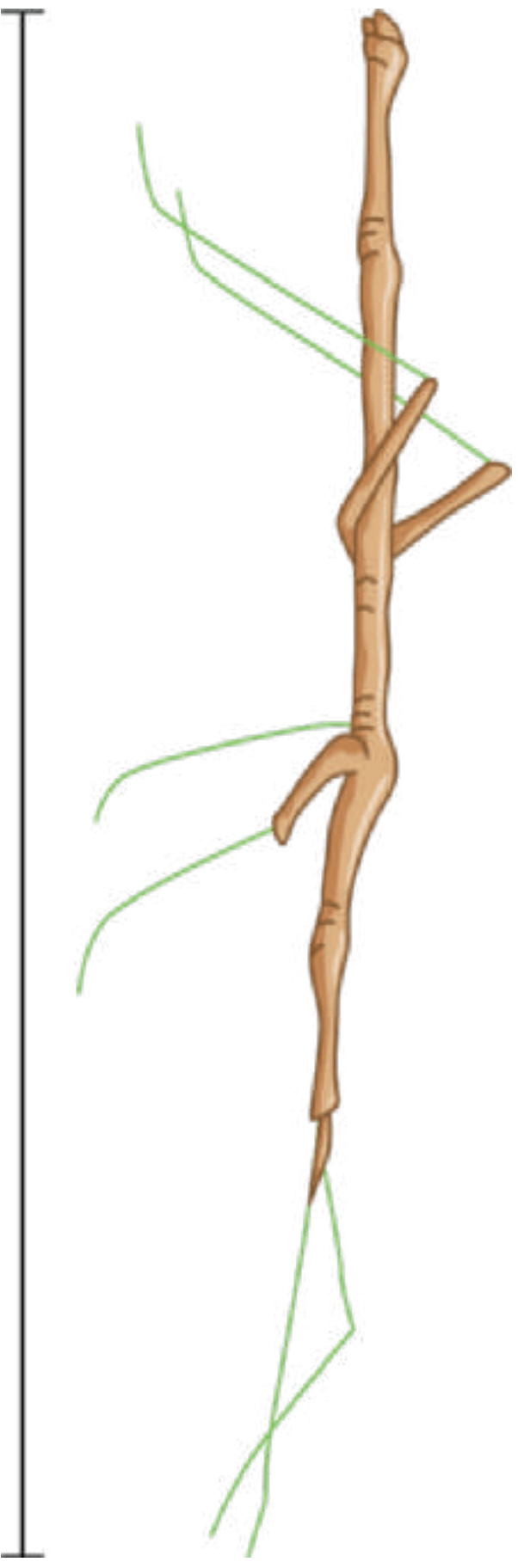
4. The butterfly is _____ cubes long.



5. The grasshopper is _____ cubes long.



6. The stick bug is _____ cubes long.



Checkpoint

Grade 1, Unit 6 Section C Checkpoint

- Solve story problems within 20 with unknowns in all positions.

[illegible]

Target Numbers Stage 1 Recording Sheet

Directions:

- On your turn:
 - Start at 55. Roll the number cube.
 - Add that number to your starting number and write an equation to represent the sum.
- Take turns until you've played 6 rounds.
- Each round, the sum from the previous equations is the starting number in the new equation.
- The partner to get a sum closest to 95 without going over wins.

roll	equation
	55 + _____ = _____
	_____ + _____ = _____
	_____ + _____ = _____
	_____ + _____ = _____
	_____ + _____ = _____
	_____ + _____ = _____

Target Numbers Stage 2 Recording Sheet

Directions:

- On your turn:
 - Start at 25. Roll the number cube. Choose whether to add that number of tens or ones to your starting number.
 - Write an equation to represent the sum.
- Take turns until you've played 6 rounds.
- Each round, the sum from the previous equations becomes the starting number in the new equation.
- The partner to get a sum closest to 95 without going over wins.

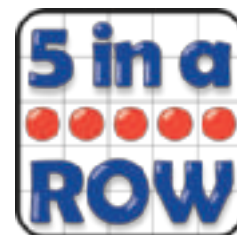
roll	choose	equation
	tens or ones	25 + _____ = _____
	tens or ones	_____ + _____ = _____
	tens or ones	_____ + _____ = _____
	tens or ones	_____ + _____ = _____
	tens or ones	_____ + _____ = _____
	tens or ones	_____ + _____ = _____

Target Numbers Stage 3 Recording Sheet

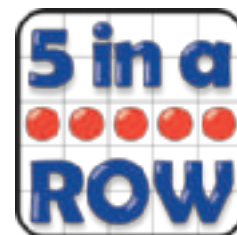
Directions:

- On your turn:
 - Roll 2 cubes to get your starting number
 - Roll 3 cubes. Choose one number to represent the tens and one number to represent the ones you will add.
 - Write an equation to represent the sum.
- Take turns until you've played 6 rounds.
- Each round, the sum from the previous equation is the starting number in the new equation.
- The partner who gets a sum closest to 95 without going over wins.

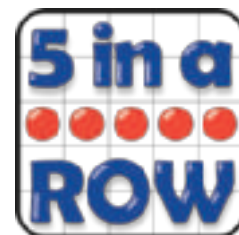
roll and choose	equation
____ tens ____ ones	$\begin{array}{r} \\ \end{array} + \begin{array}{r} \\ \end{array} = \begin{array}{r} \\ \end{array}$
____ tens ____ ones	$\begin{array}{r} \\ \end{array} + \begin{array}{r} \\ \end{array} = \begin{array}{r} \\ \end{array}$
____ tens ____ ones	$\begin{array}{r} \\ \end{array} + \begin{array}{r} \\ \end{array} = \begin{array}{r} \\ \end{array}$
____ tens ____ ones	$\begin{array}{r} \\ \end{array} + \begin{array}{r} \\ \end{array} = \begin{array}{r} \\ \end{array}$
____ tens ____ ones	$\begin{array}{r} \\ \end{array} + \begin{array}{r} \\ \end{array} = \begin{array}{r} \\ \end{array}$
____ tens ____ ones	$\begin{array}{r} \\ \end{array} + \begin{array}{r} \\ \end{array} = \begin{array}{r} \\ \end{array}$



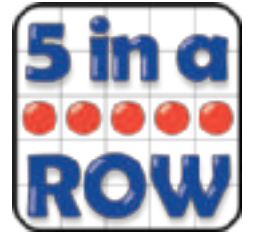
2	4	9	8	3
5	7	6	10	9
8	3	FREE	5	4
9	2	10	3	7
6	5	8	9	4



2	4	9	8	3
5	7	6	10	9
8	3	FREE	5	4
9	2	10	3	7
6	5	8	9	4



12	14	12	8	11
15	17	16	10	19
18	13	FREE	15	14
9	17	10	13	7
19	16	11	9	18



20	40	60	80	30
10	70	90	0	50
60	30	FREE	50	40
90	20	0	30	70
60	50	80	10	40

Number Cards, Multiples of 10 (0-90)

Number Cards
Multiples of 10

10

Number Cards
Multiples of 10

20

Number Cards
Multiples of 10

30

Number Cards
Multiples of 10

40

Number Cards
Multiples of 10

50

Number Cards
Multiples of 10

60

Number Cards
Multiples of 10

70

Number Cards
Multiples of 10

80

Number Cards, Multiples of 10 (0-90)

Number Cards
Multiples of 10

90

Number Cards
Multiples of 10

0

Number Cards
Multiples of 10

10

Number Cards
Multiples of 10

20

Number Cards
Multiples of 10

30

Number Cards
Multiples of 10

40

Number Cards
Multiples of 10

50

Number Cards
Multiples of 10

60

Number Cards, Multiples of 10 (0-90)

Number Cards
Multiples of 10

70

Number Cards
Multiples of 10

80

Number Cards
Multiples of 10

90

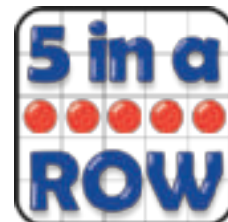
Number Cards
Multiples of 10

0

Five in a Row Addition and Subtraction Stage 5 Gameboard

Directions: (two-digit plus two-digit)

- Partner A: Put a paper clip on 2 numbers in the grey rows. Cover the sum of the 2 numbers with a counter.
- Partner B: Move 1 of the paper clips, add the numbers, and cover the sum with a counter.
- Take turns. The first partner to cover 5 squares in a row wins.



55	68	38	96	44
74	63	25	36	87
85	47	29	77	74
85	76	82	74	66
93	55	36	47	58

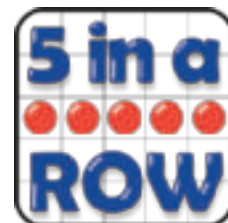
12	23	25	31	34
----	----	----	----	----

62	13	51	24	43
----	----	----	----	----

Five in a Row Addition and Subtraction Stage 5 Gameboard

Directions: (one-digit plus two-digit)

- Partner A: Put a paper clip on 2 numbers in the grey rows. Cover the sum of the 2 numbers with a counter.
- Partner B: Move 1 of the paper clips, add the numbers, and cover the sum with a counter.
- Take turns. The first partner to cover 5 squares in a row wins.



45	27	67	15	24
56	18	46	44	63
17	28	55	43	19
66	54	42	57	25
26	65	58	16	64

1	2	3	4	5
---	---	---	---	---

14	23	41	53	62
----	----	----	----	----

Five in a Row Addition and Subtraction Stage 6 Gameboard

Directions: (two-digit plus two-digit)

- Partner A: Put a paper clip on 2 numbers in the grey rows. Cover the sum of the 2 numbers with a counter.
- Partner B: Move 1 of the paper clips, add the numbers, and cover the sum with a counter.
- Take turns. The first partner to cover 5 squares in a row wins.



81	91	54	46	90
84	83	35	82	53
60	92	99	73	51
73	42	44	53	92
100	75	82	61	64

16	27	25	34	35
----	----	----	----	----

65	19	57	26	48
----	----	----	----	----

Five in a Row Addition and Subtraction Stage 6 Gameboard

Directions: (one-digit plus two-digit)

- Partner A: Put a paper clip on 2 numbers in the grey rows. Cover the sum of the 2 numbers with a counter.
- Partner B: Move 1 of the paper clips, add the numbers, and cover the sum with a counter.
- Take turns. The first partner to cover 5 squares in a row wins.



75	64	24	26	63
65	25	22	31	55
58	30	67	32	66
72	56	54	34	71
74	23	33	73	57

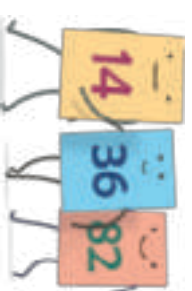
5	6	7	8	9
---	---	---	---	---

17	25	49	58	66
----	----	----	----	----

Get Your Numbers in Order Stage 1 Gameboard

Directions:

- On your turn:
 - Pick 2 number cards and make a two-digit number.
 - Write your number on any spot on the board. The numbers need to go from least to greatest.
 - You may not move a number once it is on the board. If your number cannot be placed on the game board you must say "pass" and you get a point.
 - Take turns with your partner until all the numbers on the board are filled. The partner with the fewest points at the end of the game wins.
- 



Least

[illegible]

Greatest

Points

Partner A	Partner B
-----------	-----------

How Close? Stage 1 Recording Sheet

Directions:

- Each partner:
 - Take 5 cards.
 - Choose 3 numbers.
 - Write an equation to show the sum of the 3 numbers.
 - Compare sums with your partner, whoever is closer to 20 wins a point.
- Take 3 new cards and start the next round.

$$\boxed{} + \boxed{} + \boxed{} = \underline{\hspace{2cm}}$$

$$\boxed{} + \boxed{} + \boxed{} = \underline{\hspace{2cm}}$$

$$\boxed{} + \boxed{} + \boxed{} = \underline{\hspace{2cm}}$$

$$\boxed{} + \boxed{} + \boxed{} = \underline{\hspace{2cm}}$$

+

+

=

+

+

=

+

+

=

+

+

=

Directions:

- Each partner:
 - Take 4 cards.
 - Choose 2 or 3 numbers to subtract from 20.
 - Write an equation to show the difference when you subtract the numbers from 20.
 - Compare differences with your partner, whoever is closer to 0 wins a point.
- Take 2 or 3 new cards and start the next round.

$$20 - \boxed{} - \boxed{} - \boxed{} = \underline{\hspace{2cm}}$$

$$20 - \boxed{} - \boxed{} - \boxed{} = \underline{\hspace{2cm}}$$

$$20 - \boxed{} - \boxed{} - \boxed{} = \underline{\hspace{2cm}}$$

$$20 - \boxed{} - \boxed{} - \boxed{} = \underline{\hspace{2cm}}$$

20 - - - =

20 - - - =

20 - - - =

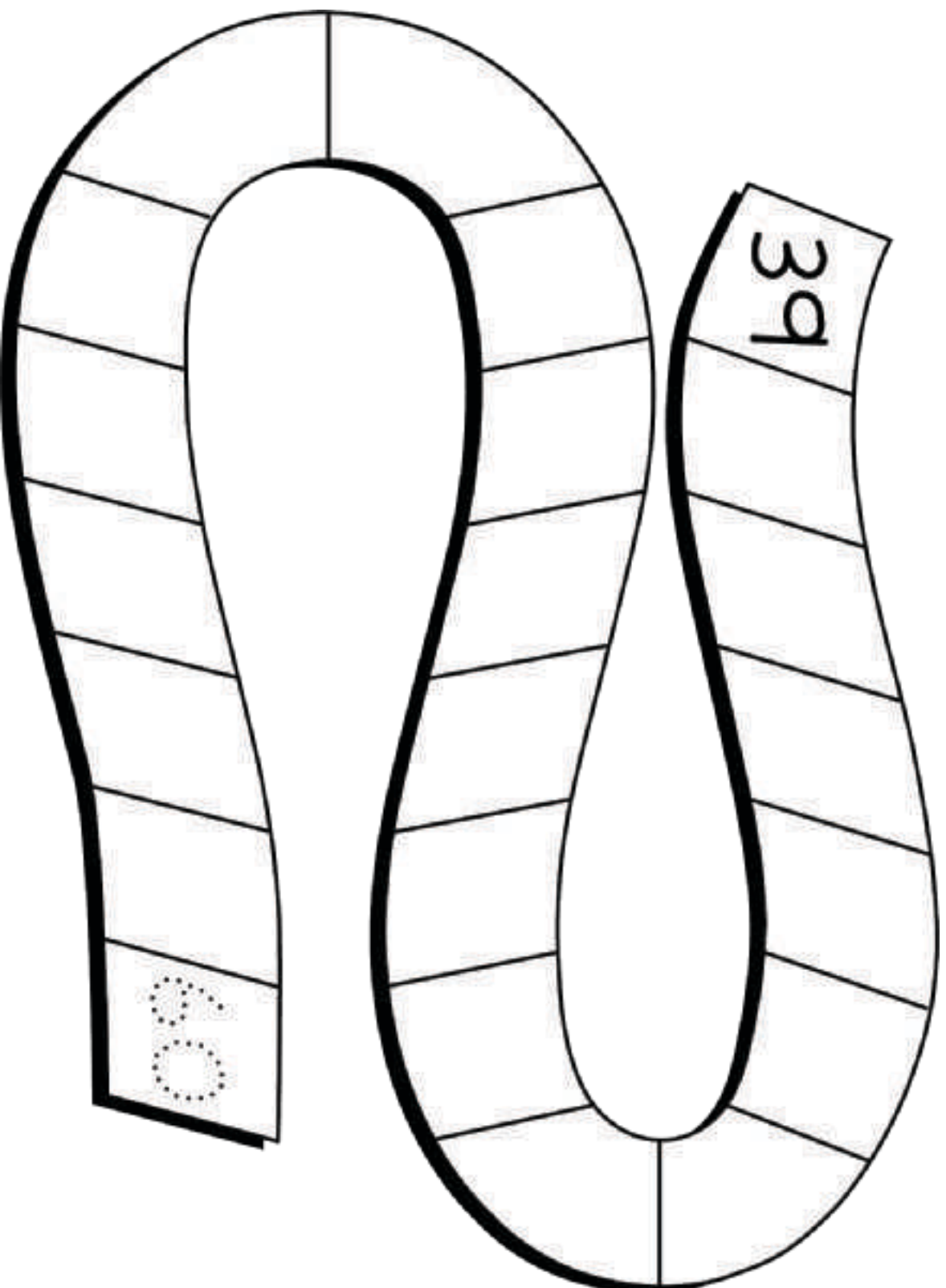
20 - - - =

20 - - - =

Write the Number Stage 1 Gameboard

Directions: (Count by 1)

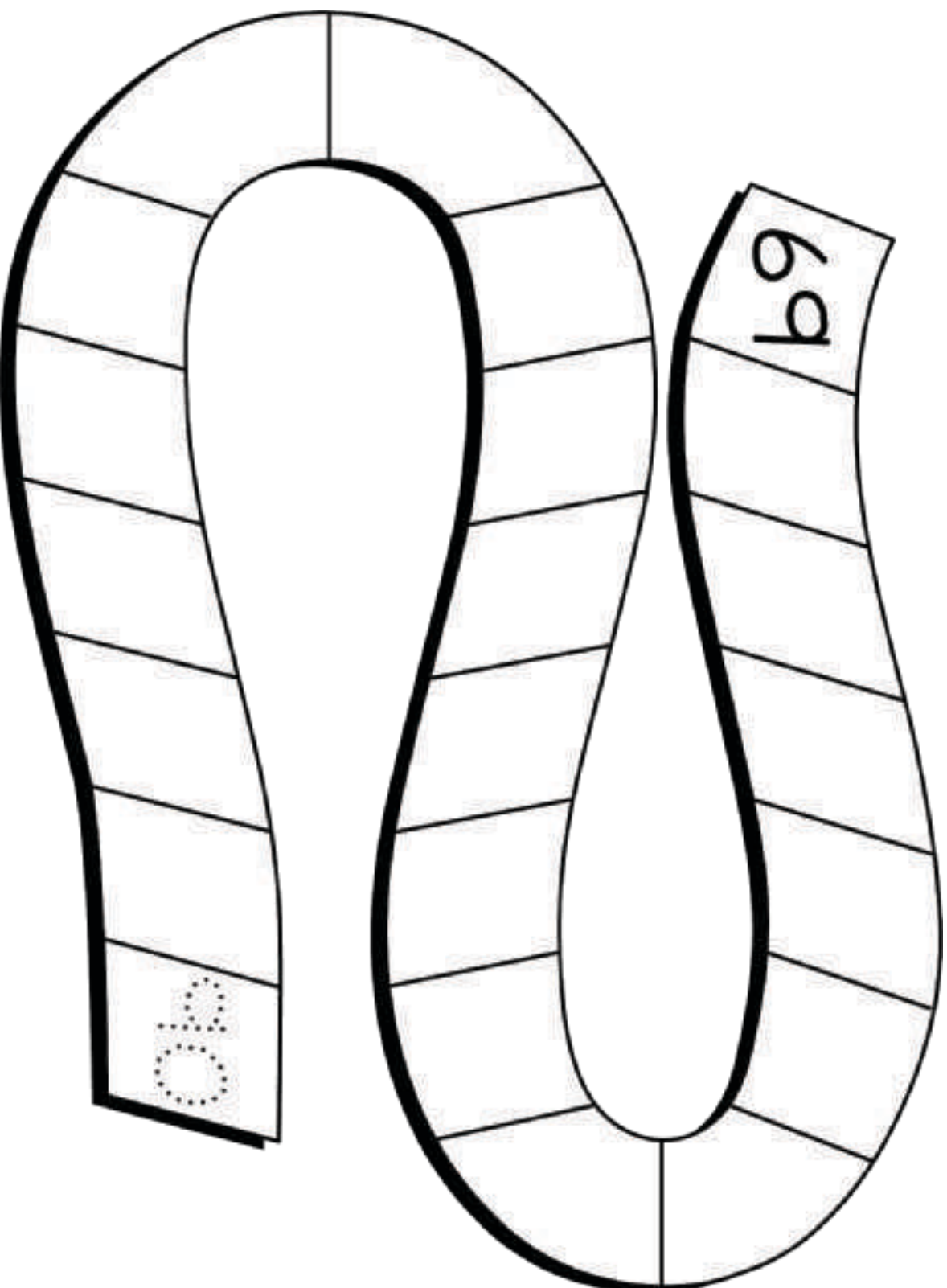
- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



Write the Number Stage 1 Gameboard

Directions: (Count by 1)

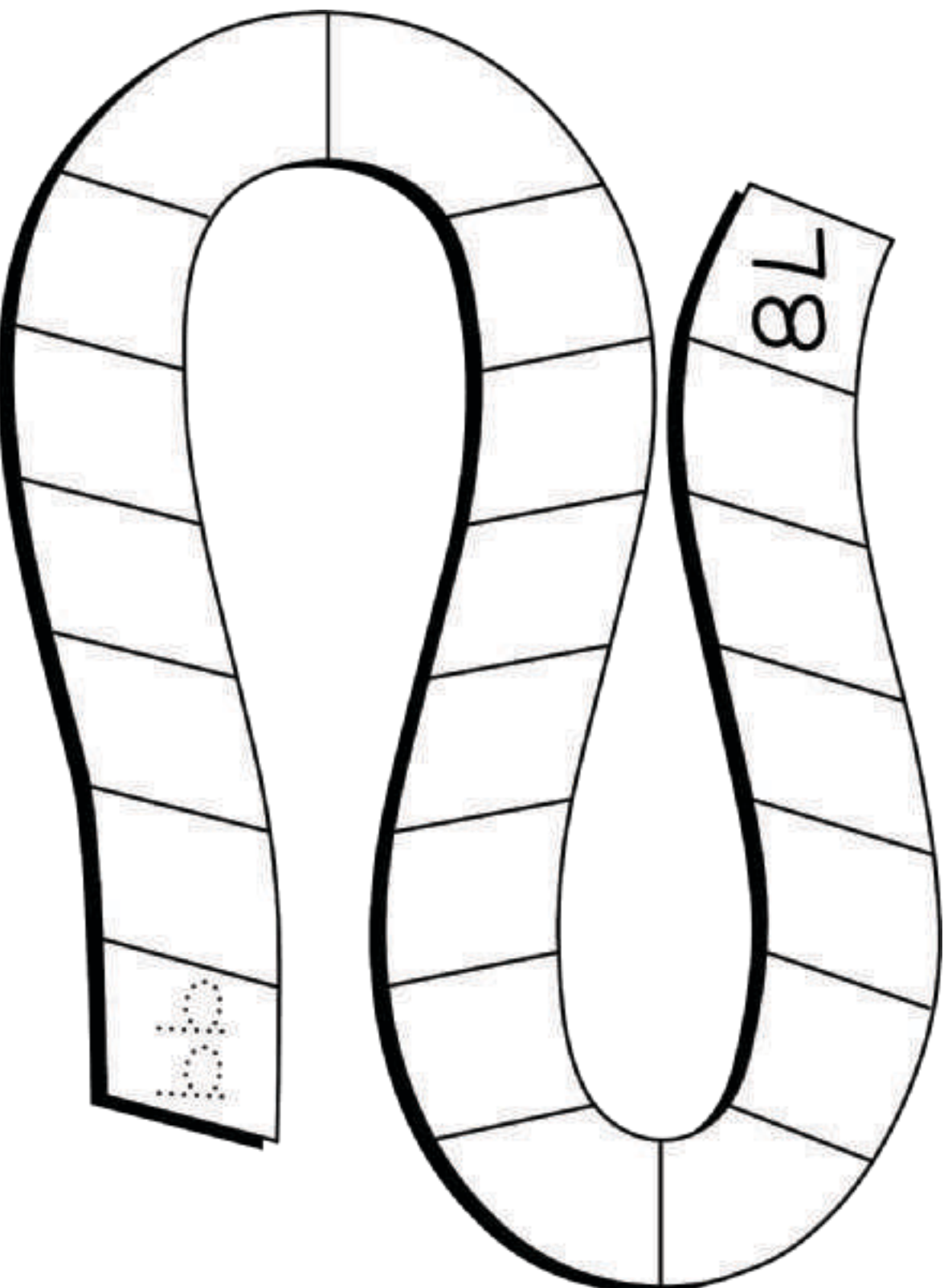
- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



Write the Number Stage 1 Gameboard

Directions: (Count by 1)

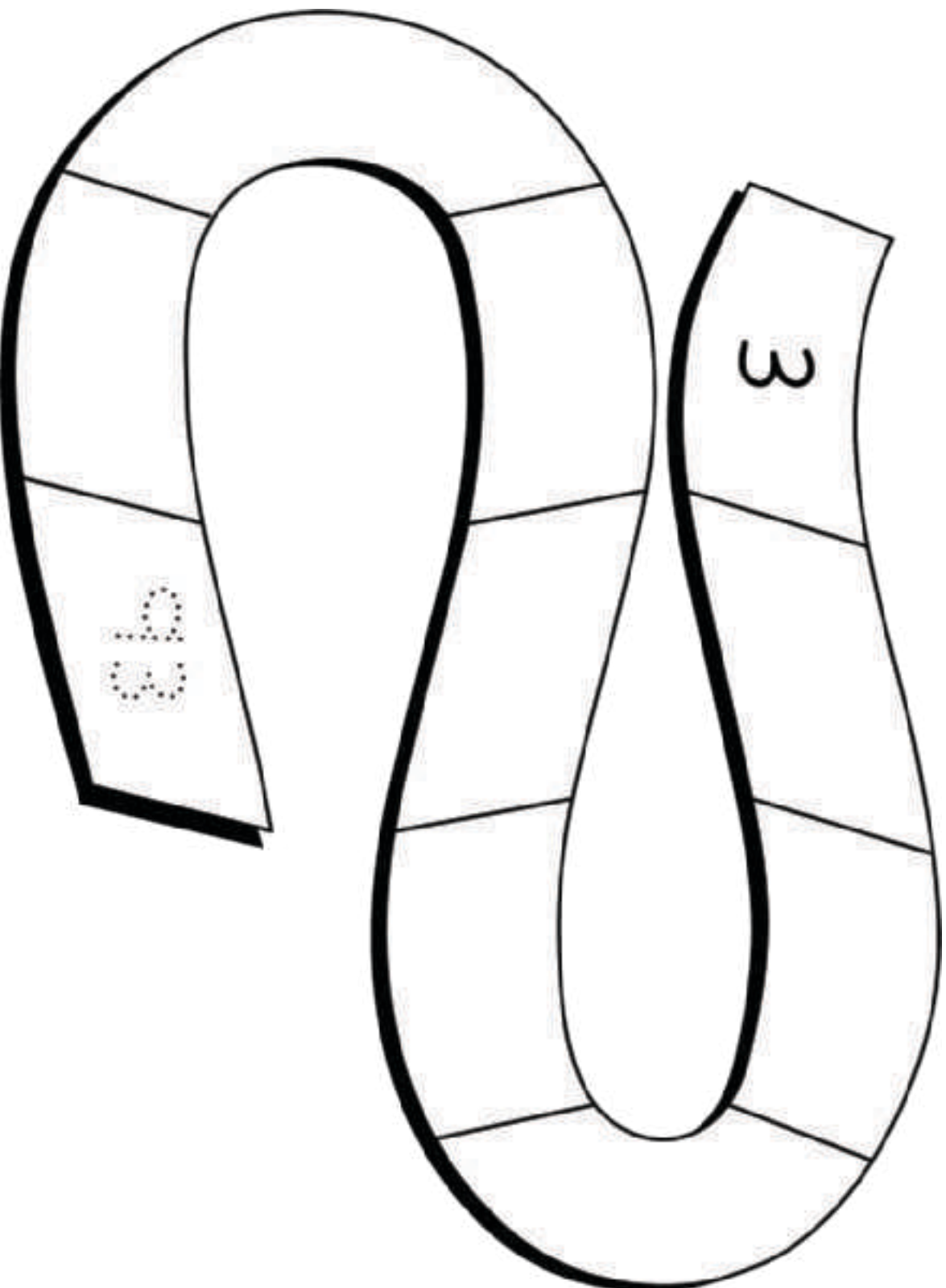
- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



Write the Number Stage 2 Gameboard

Directions: (Count by 10.)

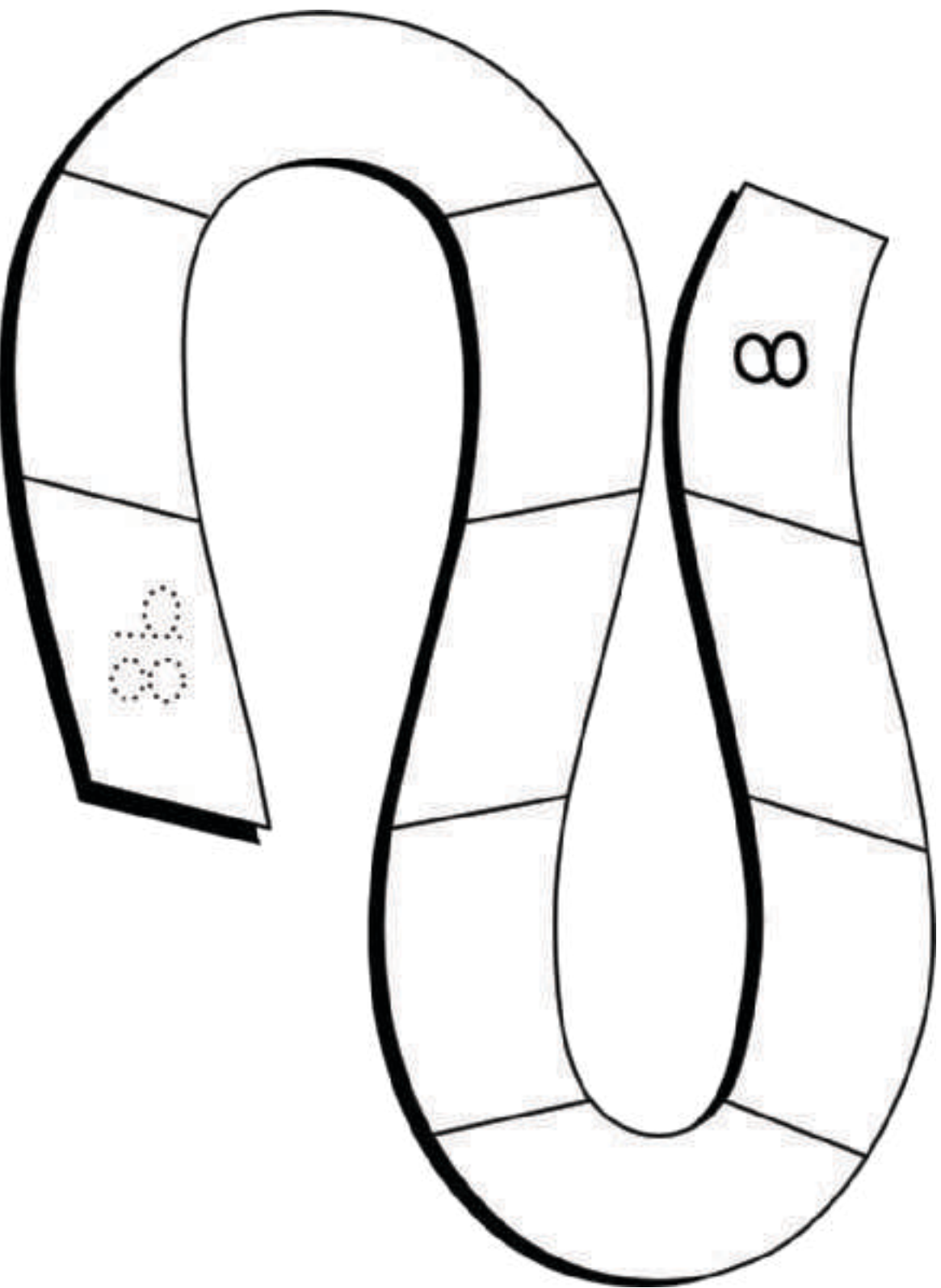
- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



Write the Number Stage 2 Gameboard

Directions: (Count by 10.)

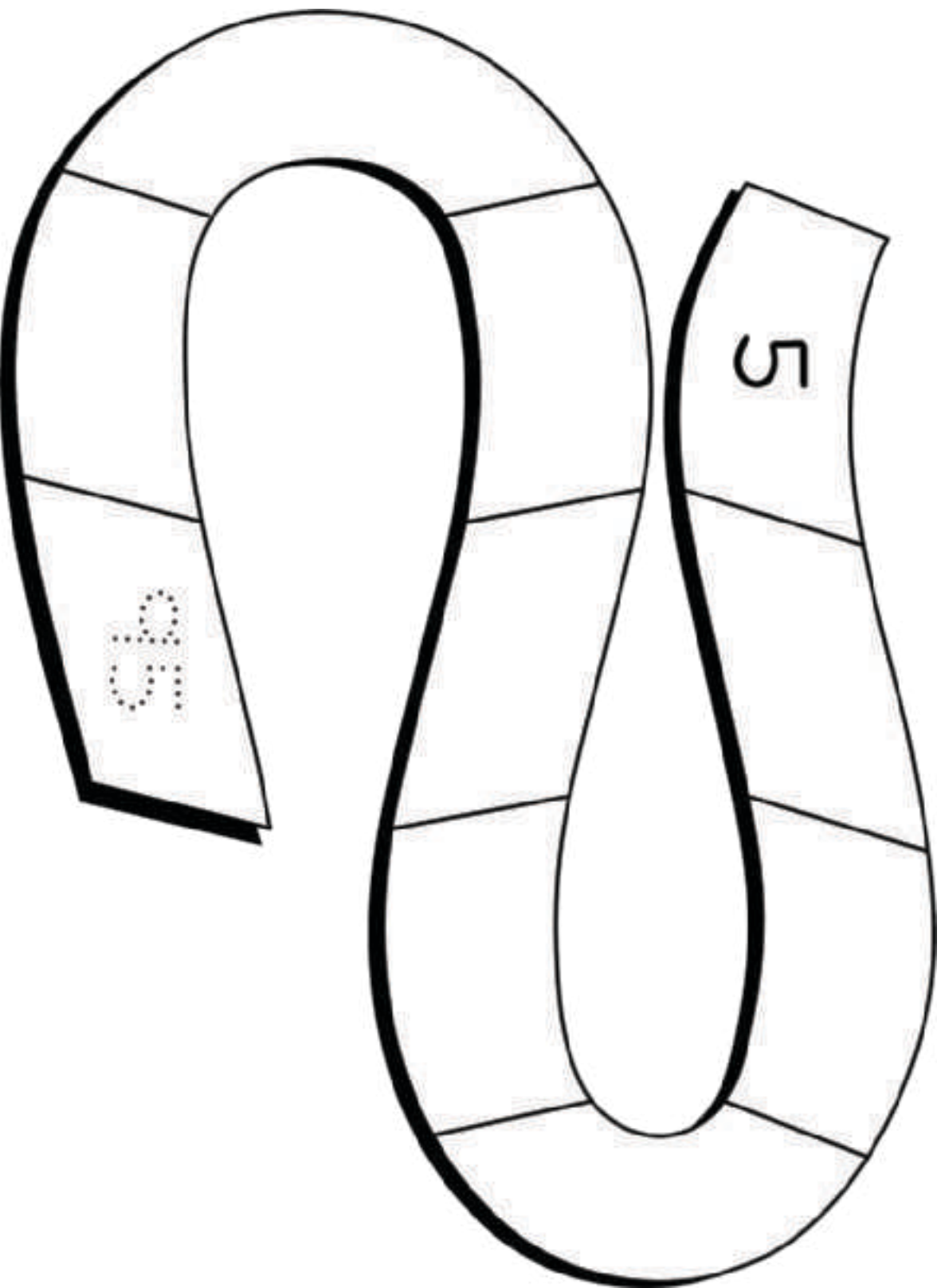
- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



Write the Number Stage 2 Gameboard

Directions: (Count by 10.)

- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



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