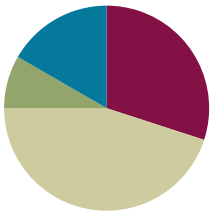
Lesson 7

Objective: Measure the same objects from Topic B with different non-standard units simultaneously to see the need to measure with a consistent unit.

Suggested Lesson Structure

Fluency Practice	(18 minutes)
Application Problem	(5 minutes)
Concept Development	(27 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (18 minutes)

- Beep Counting **1.NBT.1** (2 minutes)
- Addition Strategies Review **1.OA.6** (6 minutes)
- Sprint: Addition Within 20 **1.OA.6** (10 minutes)

Beep Counting (2 minutes)

Note: This fluency activity strengthens students' ability to understand number relationships and to recognize counting patterns. If students are proficient with beep counting by ones, consider beep counting by tens (**1.NBT.5**) or practicing the Grade 2 standard of counting by twos or fives (**2.NBT.2**).

Say a series of three or more numbers, but replace one of the numbers with the word *beep* (e.g., 15, 16, beep). When signaled, students say the number that was replaced by the word *beep* in the sequence. Scaffold number sequences, beginning with easy sequences and moving to more complex ones. Be sure to include forward and backward number sequences and to change the sequential placement of the beep.

Suggested sequence: 15, 16, beep; 25, 26, beep; 35, 36, beep; 12, 11, beep; 22, 21, beep; 32, 31, beep; 8, beep, 10; 18, beep, 20; 38, beep, 40; beep, 9, 8; beep, 19, 18; and beep, 29, 28.

Addition Strategies Review (6 minutes)

Materials: (T) Hide Zero cards (Lesson 2 Fluency Template 1)

Note: This review fluency activity helps strengthen students' understanding of the make ten and add the ones addition strategies. It also strengthens their ability to recognize appropriate strategies based on the number of tens and ones in both addends.


T: (Divide students into partnerships. Show 9 and 6 with Hide Zero cards.) Partner A, show me 9 on your Magic Counting Sticks. Partner B, show me 6. If I want to solve 9 + 6, how can I make a ten?

S: Take 1 from the 6, and add 1 to 9.


T: Yes. Show me! (Exchange the 9 and 6 cards for 10 and 5 as students adjust their fingers.) We changed 9 + 6 into an easier problem. Say our new addition sentence with the solution.

S: 10 + 5 = 15.

T: (Put the Hide Zero cards together to show 15.) Say it the Say Ten way.

S: Ten 5.

T: (Show 13 with Hide Zero cards.) Partner A, show the ones. Partner B, show the tens. (Break apart the Hide Zero cards as students hold up their fingers.) If we want to add 2, should we make a ten to help us?


S: No. We already have a ten!

T: Should we add 2 to our 3 or our 10?

S: Our 3.

T: Yes! Partner A, show me 3 + 2. (Exchange the 3 card for a 5 card.) What is the answer?


S: 5.

T: So, Partner B, what is 13 + 2?

S: 15.

T: Say it the Say Ten way.

S: Ten 5.

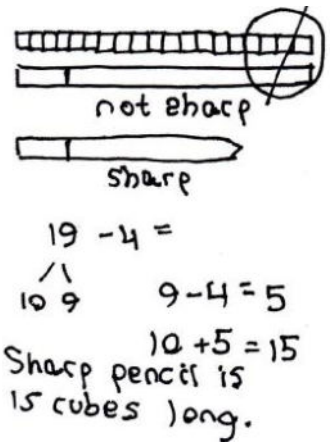
Sprint: Addition Within 20 (10 minutes)

Materials: (S) Addition Within 20 Sprint

Note: This Sprint addresses the Grade 1 standard of adding and subtracting within 20.

Application Problem (5 minutes)

When Corey measures his new pencil, he uses 19 centimeter cubes. After he sharpens the pencil, he needs 4 fewer centimeter cubes. How long is Corey's pencil after he sharpens it? Use centimeter cubes to solve the problem. Write a number sentence and a statement to answer the question.



Note: As students build measurements with centimeter cubes, they continue to connect their experiences of addition and subtraction with concrete problem situations. As students work, encourage them to talk through the problem sentence by sentence, placing the centimeter cubes in front of them to build the story.

During the Student Debrief, connect students' concrete experience with the problem type or computation.

Concept Development (27 minutes)

Materials: (T) Chart paper, 3 new pencils of different colors (e.g., red, blue, yellow) from the same brand and size, mixed set of large and small paper clips
(S) Bag of 20 large paper clips and 20 small paper clips

Note: The chart created during today's lesson is used throughout the remainder of the module.

Gather students in the meeting area with their materials.

T: For the past few days, we have been measuring with centimeter cubes. Today, let's measure with paper clips. What did we learn about the rules of measuring? (Write the rules on chart paper as students respond. Model how to measure objects that are longer or shorter than a whole unit. Discuss how best to choose the number of units when estimating.)

S: Line up the endpoints. → Don't leave any gaps. → Don't overlap what you are measuring with.

T: Let's see how long this red pencil is by using paper clips as our length unit. (Measure with a mix of both paper clips, e.g., 3 large and 1 small.) How many paper clips long is the red pencil?

S: 4 paper clips long.

A NOTE ON MULTIPLE MEANS OF REPRESENTATION:

Ask questions to guide connections, analysis, and mastery of concepts. This allows students the opportunity to develop critical thinking skills instead of just memorizing answers.

T: (Keep the red pencil measurement displayed.) This blue pencil is the same length. Let's measure it using paper clips as the length unit. (Measure with a different combination of paper clips, e.g., 1 large and 4 small.) How many paper clips long is the blue pencil?

S: 5 paper clips long.

T: According to these measurements, the blue pencil is longer than the red. Is this correct?

S: Yes. → But, it looks like the pencils are the same length!

T: Let's compare the pencils directly. (Pick up the pencils from their places, and stand them up from the floor. Leave the paper clip measurements where they are.) Are they the same length?

S: Yes!

T: (Put the pencils back so they are aligned with their paper clips.)

T: Hmmm. Let me measure again. This yellow pencil is also the same length as the others. (Measure with a different combination of paper clips, e.g., 4 large paper clips.) Oh boy, this time, it's *less* than 4 paper clips long! Why do I keep getting different measurements when the pencils are the same size?

T: I'm using the length unit of a paper clip. (Refer to the chart with measuring rules.) I'm aligning my endpoints, making sure there are no gaps or overlaps. I should be getting the same length measurement each time since the pencils are the same length.

T: Talk to your partner. Can you figure out what I need to change about the way I'm measuring?

MP.3

S: The paper clips are different sizes! → Some paper clips are long and others are short! → It's not an accurate measurement because the paper clips have to be the same size, just like our centimeter cubes were the same size, a centimeter. → We should only use the smaller paper clips. → Or, we should only use the bigger paper clips. But, we can't mix them.

T: It sounds to me like we have a new rule for proper measuring! (Add to the chart: *Length units must be the same length.*) Just like you said, we need to make a decision: either use just the small paper clips or…?

S: Just the big paper clips!

T: Great. And what should we make sure we don't do?

S: Don't mix them up because they are different sizes!

T: (Ask a student volunteer to come up and use small paper clips to measure the red pencil. Measure the blue pencil with small paper clips as the student measures the red pencil.) How many paper clips long is the blue pencil? How many paper clips long is the red pencil?

S: They are both about 6 small paper clips long!

T: Thank you for solving my measurement problem! You're ready to measure with paper clips on your Problem Set. First, let's read all of our rules for measuring.

While distributing a bag of varying paper clips to each student, remind the class of the new rule to make sure they use the same length paper clips as they measure. (Note: It would be helpful to students to have the chart hanging in the classroom for future reference.)

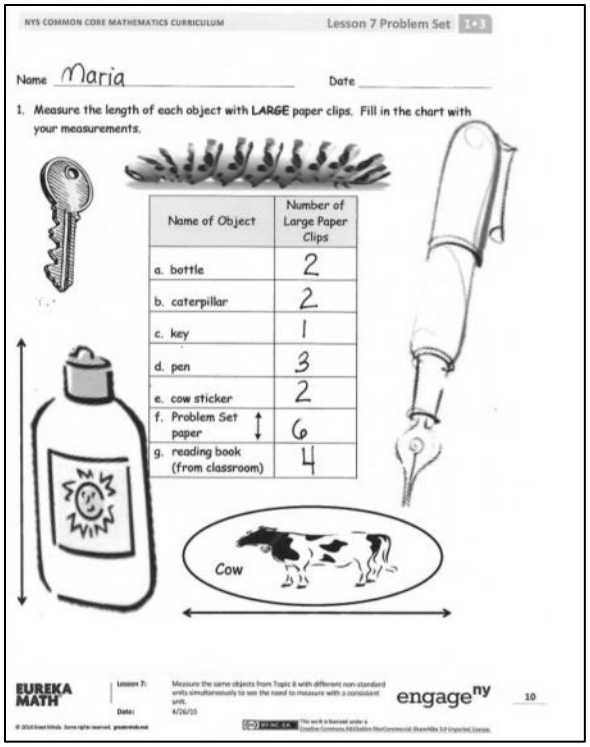
NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Provide challenging extensions for students who are able to measure more complex objects. Provide them with an object to be measured both horizontally and vertically, and find the difference. Students can also measure something round using a tape measure. Have them present their findings to the class.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to modify the assignment by specifying which problems they work on first.

Note: Circulate to ensure that students use the correct size paper clip for each set of questions. The last two items on the chart are found in the classroom, not on the Problem Set.


NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 7 Problem Set 1•3

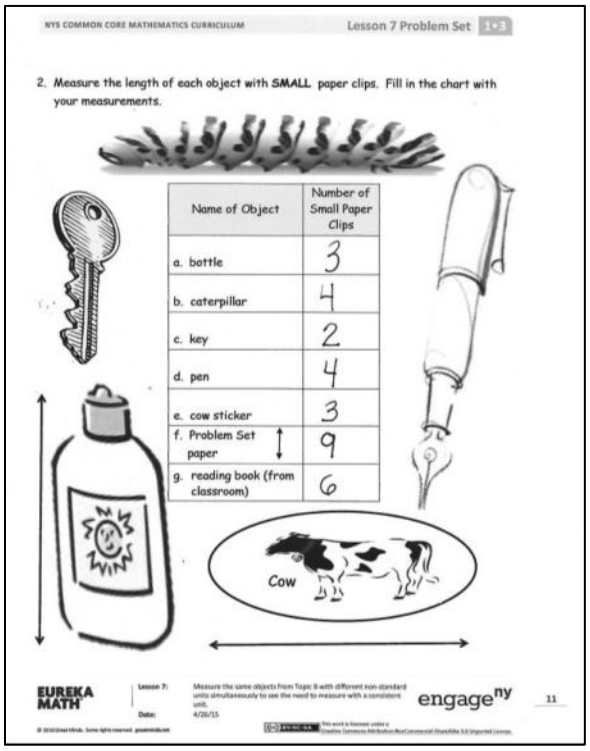
Name Maria Date

1. Measure the length of each object with LARGE paper clips. Fill in the chart with your measurements.

Name of Object	Number of Large Paper Clips
a. bottle	2
b. caterpillar	2
c. key	1
d. pen	3
e. cow sticker	2
f. Problem Set paper	6
g. reading book (from classroom)	4

Cow

EUREKA MATH engage^ny 10


NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 7 Problem Set 1•3

2. Measure the length of each object with SMALL paper clips. Fill in the chart with your measurements.

Name of Object	Number of Small Paper Clips
a. bottle	3
b. caterpillar	4
c. key	2
d. pen	4
e. cow sticker	3
f. Problem Set paper	9
g. reading book (from classroom)	6

Cow

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Student Debrief (10 minutes)

Lesson Objective: Measure the same objects from Topic B with different non-standard units simultaneously to see the need to measure with a consistent unit.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

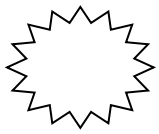
Any combination of the questions below may be used to lead the discussion.

- What is a new rule we must remember when we are measuring?
- Compare your first chart to your partner's. Explain why you have the same measurements.
- Even though we measured the same objects, why are your measurements different on your first chart than on your second chart?
- A student said she used new pencil-top erasers from a pack to measure how long her pencil is. All the erasers are the same size. Her partner said she couldn't use these erasers to measure properly because they are all different colors. Who is correct? Explain your thinking.
- Look at your Application Problem. What measurement rules did you have to keep in mind? Did you add more cubes or take cubes away to solve this problem? What number sentence matches the problem?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

A

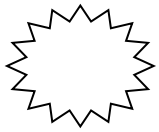
Number Correct: 

Name _____ Date _____

*Write the missing number.

1.	17 + 1 = ☐		16.	11 + 9 = ☐	
2.	15 + 1 = ☐		17.	10 + 9 = ☐	
3.	18 + 1 = ☐		18.	9 + 9 = ☐	
4.	15 + 2 = ☐		19.	7 + 9 = ☐	
5.	17 + 2 = ☐		20.	8 + 8 = ☐	
6.	18 + 2 = ☐		21.	7 + 8 = ☐	
7.	15 + 3 = ☐		22.	8 + 5 = ☐	
8.	5 + 13 = ☐		23.	11 + 8 = ☐	
9.	15 + 2 = ☐		24.	12 + ☐ = 17	
10.	5 + 12 = ☐		25.	14 + ☐ = 17	
11.	12 + 4 = ☐		26.	8 + ☐ = 17	
12.	13 + 4 = ☐		27.	☐ + 7 = 16	
13.	3 + 14 = ☐		28.	☐ + 7 = 15	
14.	17 + 2 = ☐		29.	9 + 5 = 10 + ☐	
15.	12 + 7 = ☐		30.	7 + 8 = ☐ + 9	

B

Number Correct: 

Name _____ Date _____

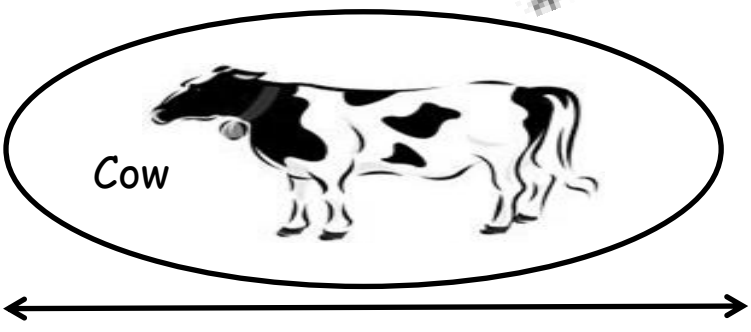
*Write the missing number.

1.	14 + 1 = ☐		16.	11 + 9 = ☐	
2.	16 + 1 = ☐		17.	10 + 9 = ☐	
3.	17 + 1 = ☐		18.	8 + 9 = ☐	
4.	11 + 2 = ☐		19.	9 + 9 = ☐	
5.	15 + 2 = ☐		20.	9 + 8 = ☐	
6.	17 + 2 = ☐		21.	8 + 8 = ☐	
7.	15 + 4 = ☐		22.	8 + 5 = ☐	
8.	4 + 15 = ☐		23.	11 + 7 = ☐	
9.	15 + 3 = ☐		24.	12 + ☐ = 18	
10.	5 + 13 = ☐		25.	14 + ☐ = 18	
11.	13 + 4 = ☐		26.	8 + ☐ = 18	
12.	14 + 4 = ☐		27.	☐ + 5 = 14	
13.	4 + 14 = ☐		28.	☐ + 6 = 15	
14.	16 + 3 = ☐		29.	9 + 6 = 10 + ☐	
15.	13 + 6 = ☐		30.	6 + 7 = ☐ + 9	

Name _____ Date _____

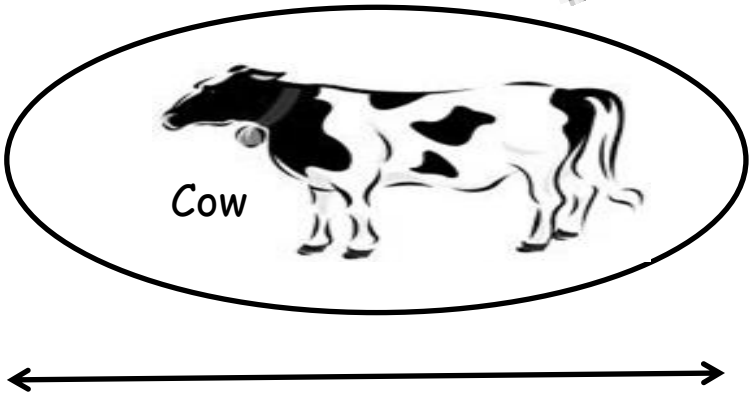
1. Measure the length of each object with **LARGE** paper clips. Fill in the chart with your measurements.

Name of Object	Number of Large Paper Clips
a. bottle	
b. caterpillar	
c. key	
d. pen	
e. cow sticker	
f. Problem Set paper	
g. reading book (from classroom)	



2. Measure the length of each object with **SMALL** paper clips. Fill in the chart with your measurements.

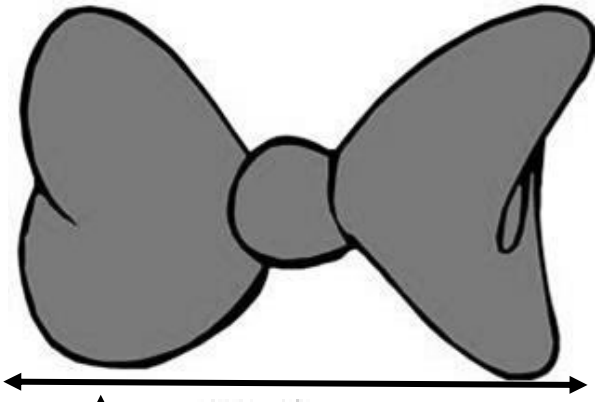
Name of Object	Number of Small Paper Clips
a. bottle	
b. caterpillar	
c. key	
d. pen	
e. cow sticker	
f. Problem Set paper	
g. reading book (from classroom)	

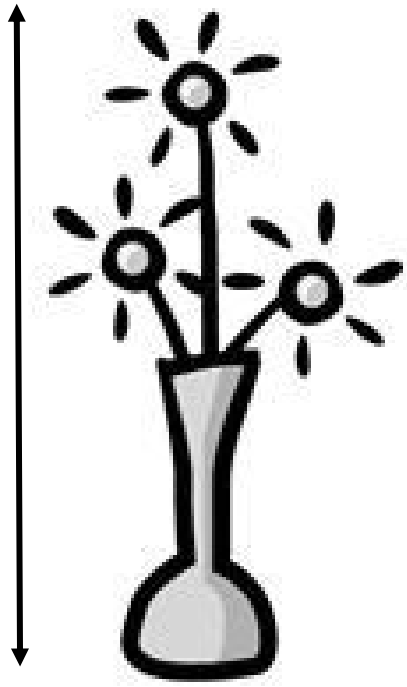


Name _____ Date _____

Measure the length of each object with **large** paper clips. Then, measure the length of each object with **small** paper clips. Fill in the chart with your measurements.

Name of Object	Number of Large Paper Clips	Number of Small Paper Clips
a. bow		
b. candle		
c. vase and flowers		





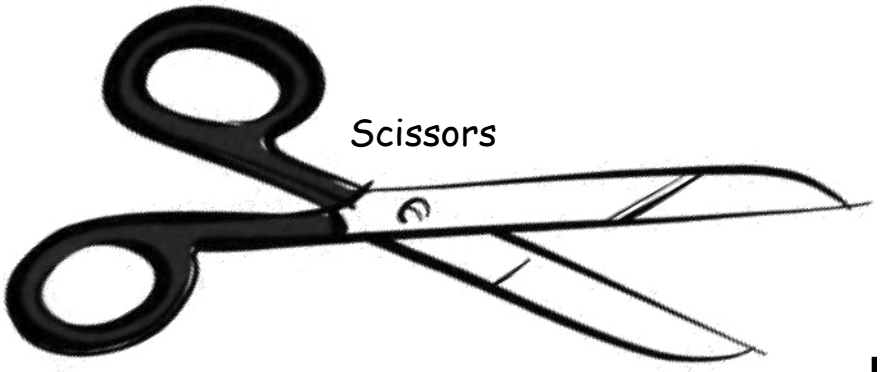
Name _____ Date _____

Cut the strip of paper clips. Measure the length of each object with the **large** paper clips to the right. Then, measure the length with the **small** paper clips on the back.

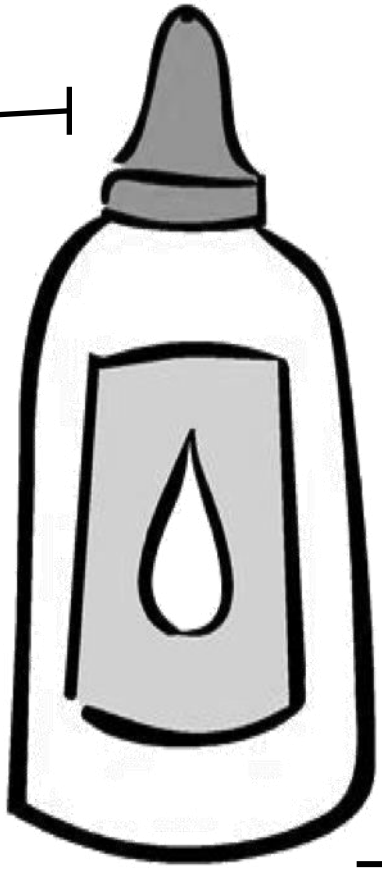
1. Fill in the chart on the back of the page with your measurements.

Paintbrush

Scissors

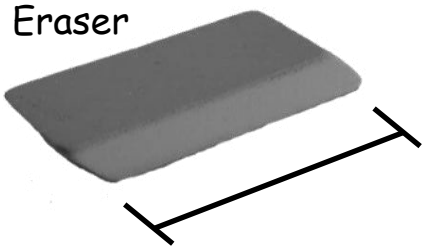


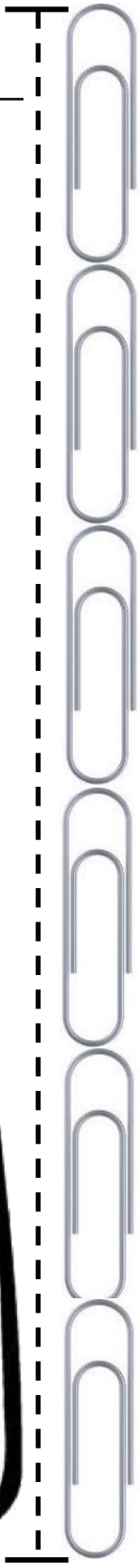
Glue



Crayon

Eraser






Name of Object	Length in Large Paper Clips	Length in Small Paper Clips
a. paintbrush		
b. scissors		
c. eraser		
d. crayon		
e. glue		

2. Find objects around your home to measure. Record the objects you find and their measurements on the chart.


Name of Object	Length in Large Paper Clips	Length in Small Paper Clips
a.		
b.		
c.		
d.		
e.		