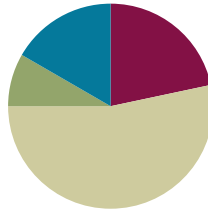


Lesson 2

Objective: Compare length using indirect comparison by finding objects *longer than*, *shorter than*, and *equal in length* to that of a string.

Suggested Lesson Structure

■ Fluency Practice	(13 minutes)
■ Application Problem	(5 minutes)
■ Concept Development	(32 minutes)
■ Student Debrief	(10 minutes)
Total Time	(60 minutes)



Fluency Practice (13 minutes)

- Happy Counting **1.OA.5, 1.NBT.5** (3 minutes)
- Hide Zero Number Sentences **1.NBT.2, 1.NBT.4** (3 minutes)
- Addition with Cards **1.NBT.6** (7 minutes)

Happy Counting (3 minutes)

Note: In the first two modules, students practice counting by ones, tens, twos, and fives, both the regular way and the Say Ten way. Reviewing these counting patterns within 40 prepares students for Module 4 while strengthening their understanding of place value and their ability to add and subtract.

Choose a counting pattern and range based on your students' skill level. If they are very proficient up to 40, start at 40 and quickly go up to 80. If they are proficient between 40 and 80, Happy Count between 80 and 120. To really reinforce place value, try alternating between counting the regular way and the Say Ten way.

T:

T/S: ten 9 20 2 tens 1 (pause) 20 ten 9 (pause) 20 2 tens 1 22

Hide Zero Number Sentences (3 minutes)

Materials: (S) Hide Zero cards (from G1–M1–Lesson 38, with additional cards found at the end of this lesson)

Note: This fluency activity strengthens the understanding of place value and prepares students for Module 4.

Show students a number from 10 to 40 with Hide Zero cards (e.g., 15). Students say an addition sentence with 10 as an addend (e.g., $10 + 5 = 15$). As students say the sentence, break apart the Hide Zero cards to model the equation. Alternate asking students to say the numbers the Say Ten way and the regular way.

Use the following suggested sequence: 15, 25, 35; 14, 24, 34; 16, 26, 36.

Addition with Cards (7 minutes)

Materials: (S) 1 pack of numeral cards 0–10 (from G1–M1–Lesson 36) per pair, counters (if needed)

Note: This review fluency strengthens students’ abilities to add within and across ten.

Students place the deck of cards face down between them. Each partner flips over two cards and adds their cards together. The partner with the greatest total keeps the cards played by both players that round. (E.g., Player A draws 4 and 5, and gives the total, 9. Player B draws 9 and 4, and gives the total, 13. Since $9 < 13$, Player B keeps the cards.) If the sums are equal, the cards are set aside and the winner of the next round keeps the cards from both rounds. The player with the most cards at the end of the game wins.

Application Problem (5 minutes)

Jordan has 3 stuffed animals: a giraffe, a bear, and a monkey. The giraffe is longer than the monkey. The bear is shorter than the monkey. Sketch the animals from shortest to longest to show how tall each animal is.

Note: This problem directly relates to today’s lesson, providing an opportunity to circulate and uncover a student’s prior understanding and possible misconceptions. Student drawings should demonstrate the proper alignment of endpoints when they are sketching to show the comparison between the animals. Students may use the term *taller than* instead of *longer than* in their statement. Reinforce the connection between the two terms, that sometimes we describe length in terms of how tall something is when the length is a type of **height**, going from the ground straight up towards the sky.



Concept Development (32 minutes)

Materials: (T) 2 feet of string, 9-cm long strip of paper, scissors, various classroom objects shorter and longer than the teacher’s foot (e.g., board eraser, piece of $9'' \times 12''$ construction paper, $8 \frac{1}{2}'' \times 11''$ paper on a bulletin board) (S) 1 foot of string, scissors, various classroom objects for measuring length, personal white boards with indirect comparison statements insert (template at the end of this lesson), 9-cm long strips of paper, pipe cleaners, or twist-ties for Problem Set

Have students place their personal white boards at their tables and sit in the meeting area in a semi-circle. Place the string and strip of paper on the floor near the teacher for students to see.

T: I’m looking to see if I can find any items that are longer than or shorter than my foot. Oh, I see it! I really want to compare the length of the paper on the bulletin board to my foot. (Walk over to the bulletin board, hoist up foot to try comparing.) Wow, I really want to compare, but it’s not easy. What should I do? Talk with your partner to come up with a plan for how I can compare the length of my foot to the length of the paper on the bulletin board. (Answers may vary.)

- T: (If students do not mention using a string as a tool to measure the teacher’s foot, direct their attention to the activity materials.) Wow, those were some great ideas. I wonder if using any of these items might also help me. I’m going to get some string and cut it so that it matches the length of my foot. A string is much easier to use than trying to put my foot against everything I want to compare it to!
- T: (Demonstrate measuring the foot with a string and cut.) So, this is the same length as...
- S: Your foot!
- T: Now, I can walk over to the bulletin board and see if the paper is longer or shorter than my foot. What do I need to do to make sure we have an accurate comparison?
- S: Line up the endpoints!
- T: (Align endpoints and measure.) Which is longer, the string or the paper?
- S: The paper.
- T: So, the paper is longer than the string, but the string is the same length as my foot. So, which is longer, my foot or the paper?
- S: The paper is longer than your foot.
- T: (Write on the board: *The paper is longer than my foot.*) I wonder if I can find something that’s shorter than my foot. Oh, the white board eraser! Let’s check. (Hold up the string.) This string is the same length as...
- S: Your foot.
- T: Can I use the string to see if my foot is longer or shorter than the eraser?
- S: Yes.
- T: I need to make sure...
- S: The endpoints line up!
- T: (Align endpoints and measure.) What do you see?
- S: The string is longer than the eraser. → That means your foot is longer than the eraser. → The eraser is shorter than your foot.
- T: (Write on the board: *The eraser is shorter than my foot.*) Great! The string was such an easy way to compare the length of my foot to the length of the other objects. Can we figure out which is longer, the paper or the eraser? Turn and talk to your partner and explain your thinking.
- S: The paper is longer than the eraser.
- T: We didn’t compare the paper and the eraser by lining them up by their endpoints. How did you know which was longer?
- S: The paper was longer than your foot, but the eraser was shorter than your foot, so the paper has to

MP.7



**NOTES ON
MULTIPLE MEANS FOR
ACTION AND
EXPRESSION:**

Some of your students will benefit from extra practice when determining what objects are *longer than*, *shorter than*, or *equal in length*. These students may still be trying to comprehend the idea of an endpoint, so the extra practice will help secure their understanding of these terms.



**NOTES ON
MULTIPLE MEANS OF
ENGAGEMENT:**

Provide challenging extensions for students who are able to compare length indirectly with a string. Offer them a longer string to use with longer objects, and have them present their findings to the class. Alternately, students can use their foot length to compare two items that are both longer than their foot, or students can compare objects that are close in length.

be longer than the eraser!

- T: Let's check. (Bring the eraser to the paper on the bulletin board, line up the endpoints, and compare.) You are correct!
- T: (Write on the board: *The paper is longer than the eraser.*) Great thinking!
- T: (Hold up a piece of construction paper.) This piece of construction paper is longer than my foot. The paper from the board was longer than my foot, too. Can I tell which type of paper is longer now that I've compared both with my foot? Talk with your partner.
- S: (Discuss.) No, you can't tell. → They are both longer, so you don't know which one is the longest. → You would have to have something that's in between the two sizes.
- T: That's right. Both the pieces of paper are longer than my foot, but I cannot tell if the construction paper is longer than the paper on the board.
- T: Now it's your turn. You'll go on a scavenger hunt to find three items, one that is longer than your foot, one that is shorter than your foot, and lastly, something that is about the same length as your foot. But you won't be able to use your foot to measure. Instead, I will give you a piece of string to use!

Demonstrate how students can work with their partners to measure and cut their piece of string to match their foot (or shoe). Allow five minutes for students to prepare their string and to look for their items. Have students then return to their seats to fill in their comparison statements on their personal white boards and share their findings with a partner. Have them repeat this process as time allows.

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. Some problems do not specify a method for solving. Students solve these problems using the RDW approach used for Application Problems.

Note: Students will be using a 9-cm long paper strip, pipe cleaner, or twist-tie, instead of a string, to measure each picture in the Problem Set. Explain to the students that the paper strip will be used in the same fashion as the string as a measuring tool. You might want to model measuring the first picture (baseball bat) using the paper strip. Also, as students will be using information from Page 1 to complete Page 2, prepare today's Problem Set on two separate pieces of paper to avoid having students flip over their paper.

Students will need to take a paper strip home to complete the homework.

Student Debrief (10 minutes)

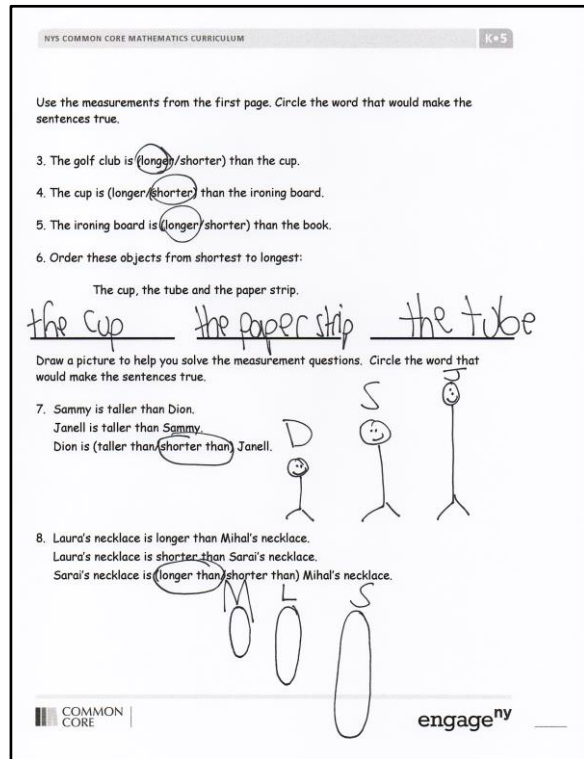
Lesson Objective: Compare length using indirect comparison by finding objects *longer than*, *shorter than*, and *equal in length to* that of a string.

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.

You may choose to use any combination of the questions below to lead the discussion.

- What did we use to compare the length of different objects? (A string and a paper strip.) How were these tools helpful?
- How were you able to figure out the length of different objects when you didn't compare them side by side?
- The index card is longer than the string. The sticky note is shorter than the string. Which is longer, the index card or the sticky note?
- The marker is shorter than the string. The string is shorter than the crayon. Which is shorter, the marker or the crayon?
- The folder is longer than the string. The book is longer than the string. Which is longer, the folder or the book? (We can't tell.) Explain how you know this.
- How was using the paper strip in the Problem Set similar to or different from using the string? How did using the paper strip help you compare the objects in the pictures? Use an example from the Problem Set to explain your thinking.
- Look at the pictures from Page 1. Can we compare the baseball bat and the tube? Why, or why not?
- Look at Problem 2(a). How did you set up your paper strip when you measured the cup compared to the tube? Are you still measuring the length of each object? (Yes. It still tells us how long something is. We can measure length in different directions.)
- In the Application Problem today, we were comparing the length of three stuffed animals, which can also be considered their **height**. When we measure length from the ground towards the sky, we usually call that the height. Did any of you compare the length of two objects based on their height? Share your example.



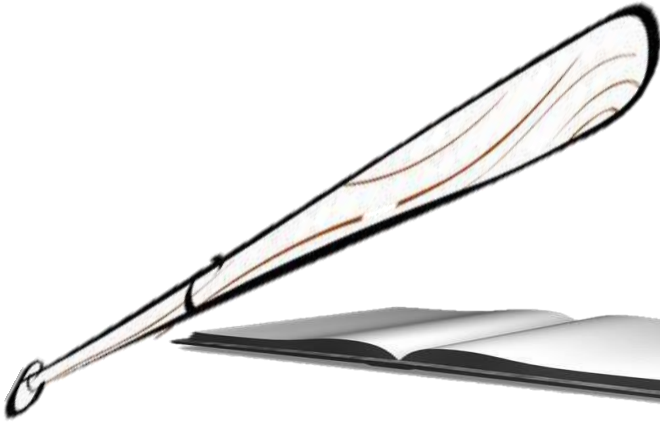
Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help you assess the students' understanding of the concepts that were presented in the lesson today and plan more effectively for future lessons. You may read the questions aloud to the students.

Name _____

Date _____

1. Use the paper strip provided by your teacher to measure each picture. Circle the words you need to make the sentence true.



The baseball bat is

longer than
shorter than
the same length as

the paper strip.

The book is

longer than
shorter than
the same length as

the paper strip.

The baseball bat is _____ than the book.

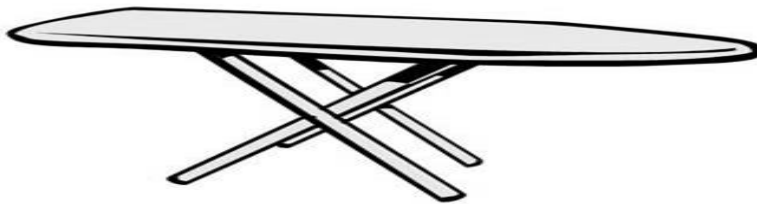
2. Complete the sentences with **longer than**, **shorter than**, or **same length as** to make the sentences true.

a.



The tube is _____ the cup.

b.



The iron is _____ the ironing board.

Use the measurements from the first page. Circle the word that would make the sentences true.

3. The baseball bat is (**longer/shorter**) than the cup.
4. The cup is (**longer/shorter**) than the ironing board.
5. The ironing board is (**longer/shorter**) than the book.
6. Order these objects from shortest to longest:

the cup, the tube, and the paper strip.

Draw a picture to help you solve the measurement questions. Circle the word that would make the sentences true.

7. Sammy is taller than Dion.
Janell is taller than Sammy.
Dion is (**taller than/shorter than**) Janell.

8. Laura's necklace is longer than Mihal's necklace.
Laura's necklace is shorter than Sarai's necklace.
Sarai's necklace is (**longer than/shorter than**) Mihal's necklace.

Name _____

Date _____

1. Draw a picture to help you solve the measurement questions. Circle the word that would make the sentences true.

Tanya's doll is shorter than Aline's doll.

Mira's doll is taller than Aline's doll.

Tanya's doll is (**taller than/shorter than**) Mira's doll.

Name _____

Date _____

Use your paper strip to measure each picture. Circle the words you need to make the sentence true.

1.

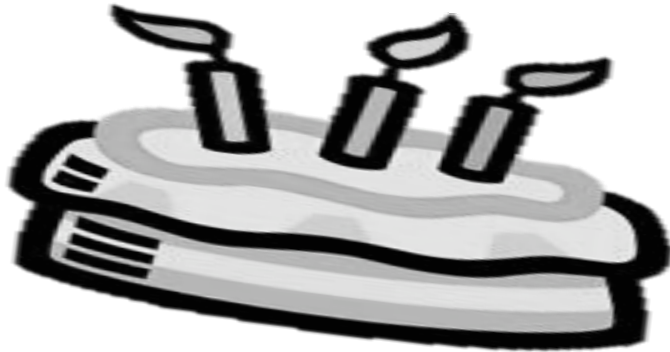


The sundae is longer than
shorter than
the same length as the paper.

The spoon is longer than
shorter than
the same length as the paper.

The spoon is _____ than the sundae.

2.



The balloon is _____ than the cake.

3.



The ball is shorter than the paper.

So, the shoe is _____ the ball.

Use the measurements from the first page. Circle the word that would make the sentences true.

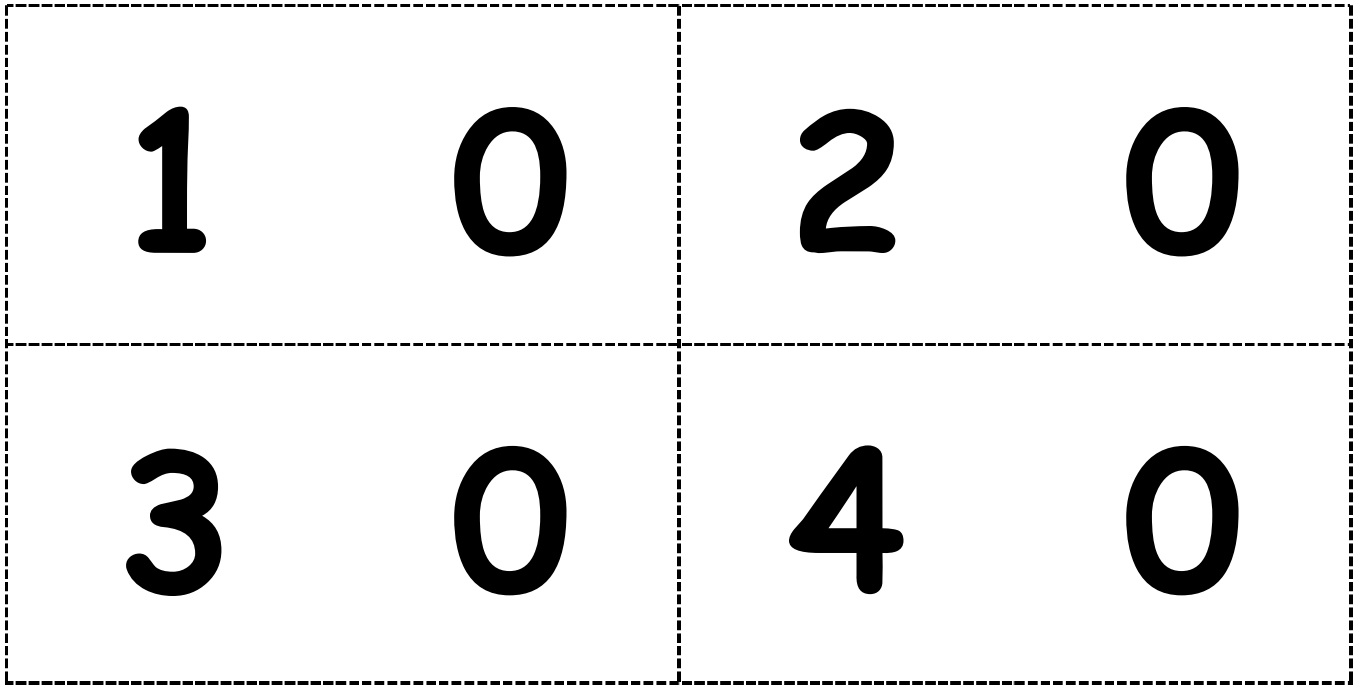
4. The spoon is (**longer/shorter**) than the cake.
 5. The balloon is (**longer/shorter**) than the sundae.
 6. The shoe is (**longer/shorter**) than the balloon.
 7. Order these objects from shortest to longest:
the cake, the spoon, and the paper.
-
-
-

Draw a picture to help you solve the measurement questions. Circle the word that would make the sentences true.

8. Marni's hair is shorter than Wesley's hair.
Marni's hair is longer than Bitas's hair.
Bitas's hair is (**longer/shorter**) than Wesley's hair.

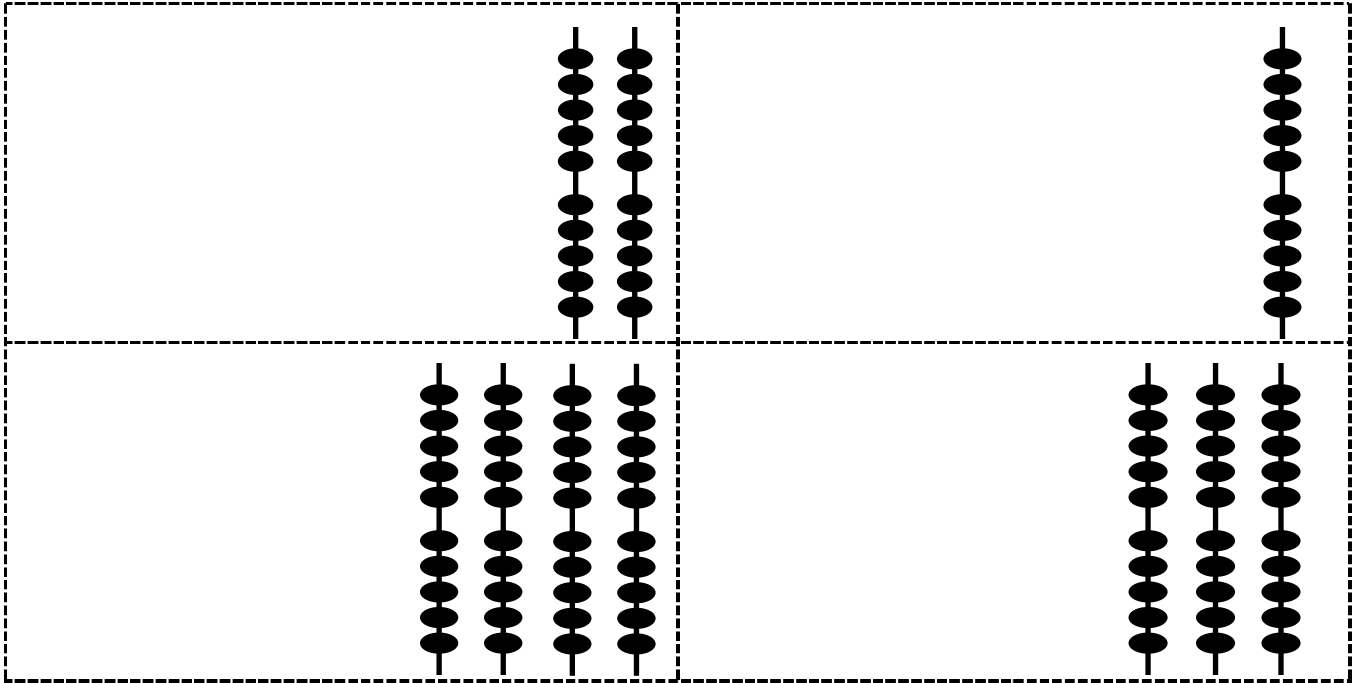
9. Elliott is shorter than Brady.
Sinclair is shorter than Elliott.
Brady is (**longer/shorter**) than Sinclair.

Copy double-sided.



Copy double-sided.

5 groups



If _____ is longer than
(classroom object)
my foot and

_____ is shorter than my
(classroom object)
foot, then

_____ is longer than
(classroom object)
_____.
(classroom object)

My foot is about the same
length as _____.
(classroom object)