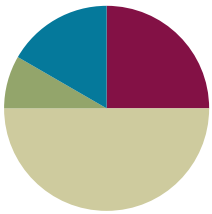
Lesson 1

Objective: Compare length directly and consider the importance of aligning endpoints.

Suggested Lesson Structure



Fluency Practice	(15 minutes)
Application Problem	(5 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

Fluency Practice (15 minutes)

- Speed Writing **1.NBT.1** (2 minutes)
- Tens and Ones **1.NBT.2** (3 minutes)
- Sprint: Subtracting Ones from Teen Numbers **1.OA.6** (10 minutes)

Speed Writing (2 minutes)

Materials: (S) Personal white board

Note: This fluency activity provides students practice with writing numbers while reinforcing place value understanding.

Tell students to write their numbers from 10 to as high as they can in one minute while they whisper count the Say Ten way. Teachers may also want to instruct students to organize their numbers in a column so that the patterns in the tens and ones columns become visible.

Tens and Ones (3 minutes)

Materials: (T) 100-bead Rekenrek

Note: This activity addresses the Grade 1 standard requiring students to understand that two-digit numbers represent amounts of tens and ones.

Practice decomposing numbers into tens and ones using the Rekenrek.

T: (Show 16 on the Rekenrek.) How many tens do you see?
S: 1.
T: How many ones?
S: 6.

T: Say the number the Say Ten way.
S: Ten 6.
T: Good. 1 ten plus 6 ones is…?
S: 16.
T: (Slide over 10 from the next row.) How many tens do you see?
S: 2.
T: How many ones?
S: 6.
T: Say the number the Say Ten way.
S: 2 tens 6.
T: Good. 2 tens plus 6 ones is…?
S: 26.

Slide over the next row and repeat. Continue with the following suggested sequence within 40: 15, 25, 35; 17, 27, 37; and 19, 29, 39.

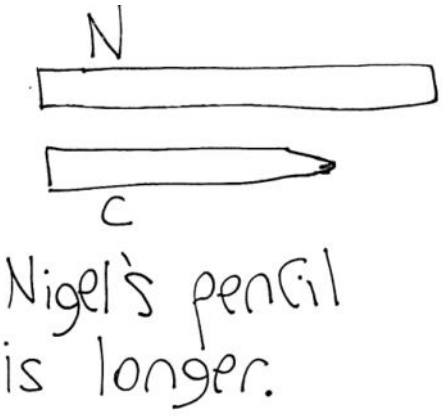
Sprint: Subtracting Ones from Teen Numbers (10 minutes)

Materials: (S) Subtracting Ones from Teen Numbers Sprint

Note: This Sprint addresses the Grade 1 standard of adding and subtracting within 20 and provides continued practice from the lessons at the end of Module 2.

Application Problem (5 minutes)

Nigel and Corey each have new pencils that are the same length. Corey uses his pencil so much that he needs to sharpen it several times. Nigel doesn't use his at all. Nigel and Corey compare pencils. Whose pencil is longer? Draw a picture to show your thinking.



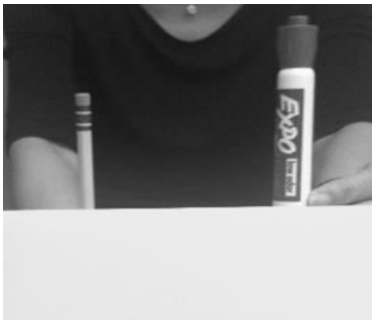
Note: In this Application Problem, students use their prior experiences to consider what happens to a pencil after repeated use and then use that knowledge to compare a new with a used pencil. Students have the opportunity to draw to show their understanding of length and of the term *longer*. During the Student Debrief, students discuss drawings in light of today's lesson, making statements such as, "Corey's pencil is shorter than Nigel's pencil. Nigel's pencil is longer than Corey's pencil."

Concept Development (30 minutes)

Materials: (T) Folder, new crayon, pencil, dry erase marker, jumbo glue stick, *longer than* and *shorter than* sentence frames (Template) (S) Folder, 5 strips of paper (of varying lengths) per pair, various classroom objects

Have students sit in a meeting area in a semicircle.

T: (Prop up a folder on the floor. Hold a dry erase marker and a pencil behind the folder, making the marker appear taller than the pencil.) Which of these items, the marker or the pencil, is longer?



S: The marker!

T: How do you know?

S: The marker is taller. → The pencil is shorter.

T: (Call up a student.) Please take away the folder and reveal what's behind it.

S: (Takes away the folder.)

T: (Keep the way the marker and the pencil were held.) Now, can you tell which one is longer? Turn and talk to your partner.

S: The marker is longer because the top of it is taller. → The pencil is taller. Look at how much higher up the marker is in the air. → It's hard to tell.

T: (Stand both items on the floor, side by side.) Now, can you tell which one is longer?

S: Yes! The pencil is longer!

T: (Project the sentence frame with *longer than* from the Template.) Which is longer? Use this sentence frame to say your answer.

S: The pencil is *longer than* the marker.

T: (Project the sentence frame with *shorter than.*) Which is shorter? Use this sentence frame to say your answer.

S: The marker is shorter than the pencil.

T: Are you sure about your answer?

S: Yes.

T: Turn and talk to your partner about what I did differently to help you be sure that the pencil is longer than the marker.

S: You put both things on the floor. → They started at the same place.

T: So, what do we have to make sure to do when we compare two different objects to see which is longer?

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Highlight the critical vocabulary for English language learners by showing a visual representation of new words. Vocabulary that should be highlighted includes *shorter than*, *longer than*, and *endpoint*. Without understanding these words, English language learners may have difficulty with this module.

S: You have to start at the same spot. That's the fair way to see which is longer.

T: You're right. We have to pay close attention and make sure we line up the very end of each object, which we call the **endpoint**, so that we can accurately compare which is longer or shorter.

T: Let's try it again. (Hold up the crayon in the other hand in a fist and the jumbo glue stick in the other fist, making the crayon appear longer.) Which is longer? Turn and talk to your partner.

S: The crayon. → No. We can't tell. We don't know if they are starting from the same place.

T: Good thinking! You can't be sure which is longer because I'm hiding the endpoints. Turn and talk to your partner about how you would arrange these items so we can accurately figure out which is longer.

Students discuss as the teacher circulates to choose a volunteer with the idea of aligning the endpoints.

T: (Call up a student to demonstrate.) What did he do to make sure we can be accurate about which item is longer?

S: He lined up the endpoints!

T: Which is longer, the crayon or the glue stick? Use the sentence frame to say your answer.

S: The glue stick is longer than the crayon.

Allow students to "fool" their friends with varying endpoints. Pass out the paper strips and folders. Partner A hides behind the folder and selects two paper strips. She holds them up, and Partner B guesses which one is longer. Partner A can then reveal the actual lengths. Students should discuss Partner B's guess and why it was accurate or inaccurate. After discussion, they can switch roles.

T: Now that we know about endpoints, let's practice lining things up! Go on a scavenger hunt. Find two items of different lengths, one longer or shorter than the other. You have one minute to bring those items to your table.

Students look around the room to find two items of different lengths.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Students may need some extra practice understanding how to compare lengths of different objects accurately. Help them to understand the importance of endpoints. Offer opportunities for student leadership as "teacher" for those students who understand the concept of an endpoint.

T: Show how you can compare the length of your two items. Then, make two statements to your partner using the sentence frames.

T: I saw you making sure to line up your items. Now try this: Flip just one of your items, and make it stand upside down. Does this change which item is longer or shorter?

S: (Flip and compare.) No.

T: Why not?

S: Because it doesn't matter if you have them standing the regular way or upside down as long as you line up the endpoints.

T: I observed so many students lining up their endpoints by making them stand from the table. Can you show a different way to line up the endpoints? (Have students share the different ways in which they can align the endpoints.)

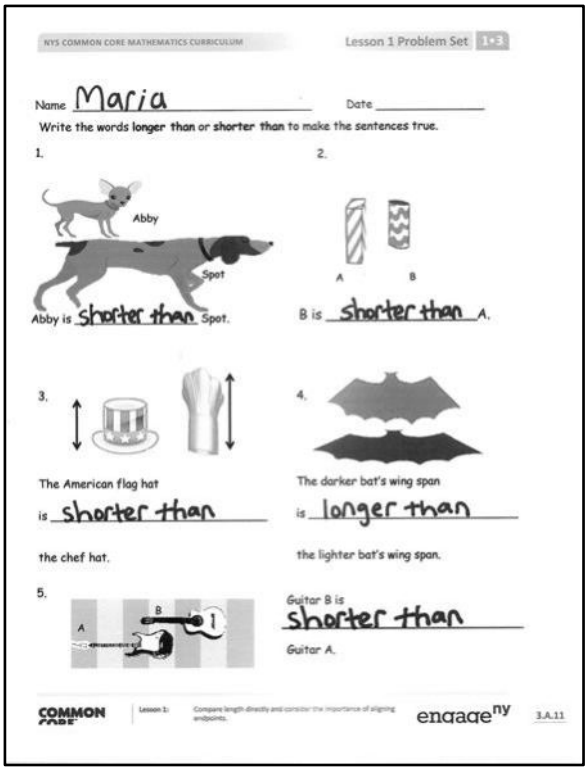
S: You can lay them down, one on top of the other. Just make sure the endpoints are starting at the same line. → You can use the edge of the table and lay down the items so they both start from the same place.

If time allows, give students several one-minute periods to look for more objects and practice comparing lengths by aligning endpoints and making accurate statements.

Problem Set (8 minutes)

Students should do their personal best to complete the Problem Set within the allotted 8 minutes. Some problems do not specify a method for solving. This is an intentional reduction of scaffolding that invokes MP.5, Use Appropriate Tools Strategically. Students should solve these problems using the RDW approach used for Application Problems.

For some classes, it may be appropriate to modify the assignment by specifying which problems students should work on first. With this option, let the purposeful sequencing of the Problem Set guide your selections so that problems continue to be scaffolded. Balance word problems with other problem types to ensure a range of practice. Consider assigning incomplete problems for homework or at another time during the day.


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

Name Maria Date

Write the words longer than or shorter than to make the sentences true.

1. Abby

Spot

Abby is shorter than Spot.

2. A B

B is shorter than A.

3. The American flag hat is shorter than the chef hat.

4. The darker bat's wing span is longer than the lighter bat's wing span.

5. A B

Guitar B is shorter than Guitar A.

COMMON CORE Lesson 1: Compare length directly and consider the importance of aligning endpoints. engage^ny 3.A.11

Student Debrief (10 minutes)

Lesson Objective: Compare length directly and consider the importance of aligning endpoints.

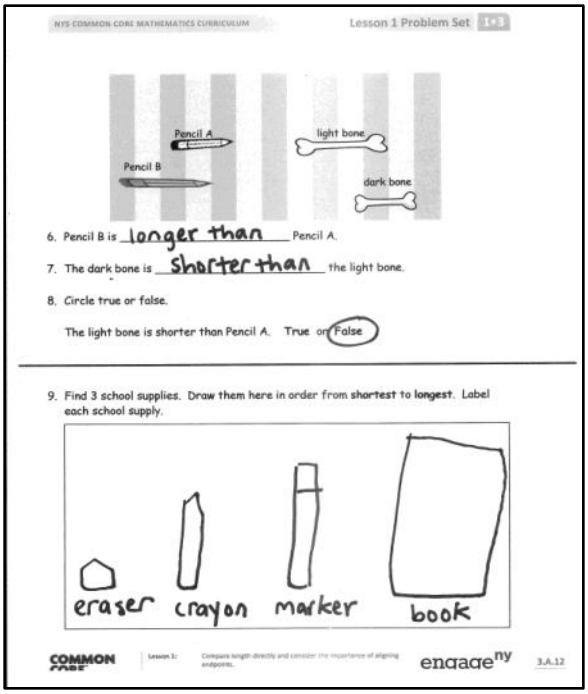
The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

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.

- When we compare lengths of different objects, what do we need to do to make sure we are comparing accurately?
- When you compare two objects and see that one of them is longer, can you make an accurate statement about which is shorter without looking? How?

- I saw one student compare the length of two objects by standing both objects on the table instead of standing the objects on the floor. Will the student be able to compare them accurately? Why or why not?
- Look at the bats in Problem 4. Were the **endpoints** aligned? Could you still see which bat has the longer wingspan? How?
- Look at the pencils and bones from Problems 6 and 7. Compare a pencil to a bone, and talk about how they are longer or shorter than one another and how you know.
- Look at your drawings from today's Application Problem. Do your drawings show an accurate way to compare the length of these two pencils? If not, redraw your solution based on what you now know about endpoints.



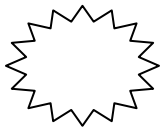
Exit Ticket (3 minutes)

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.

Homework

Homework at the K–1 level is not a convention in all schools. In this curriculum, homework is an opportunity for additional practice of the content from the day's lesson. The teacher is encouraged, with the support of parents, administrators, and colleagues, to discern the appropriate use of homework for his or her students. Fluency exercises can also be considered as an alternative homework assignment.

A

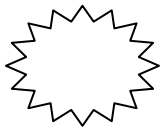
Number Correct: 

Name _____ Date _____

*Write the missing number.

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

B

Number Correct: 

Name _____ Date _____

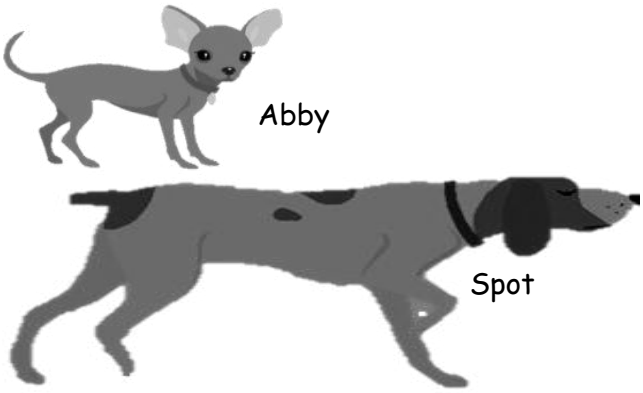
*Write the missing number.

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

Name _____ Date _____

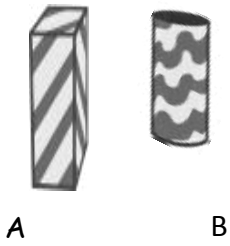
Write the words **longer than** or **shorter than** to make the sentences true.

1.



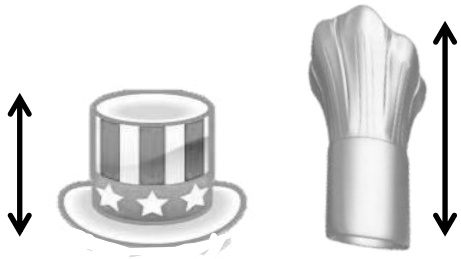
Abby is _____ Spot.

2.



B is _____A.

3.



The American flag hat

is _____

the chef hat.

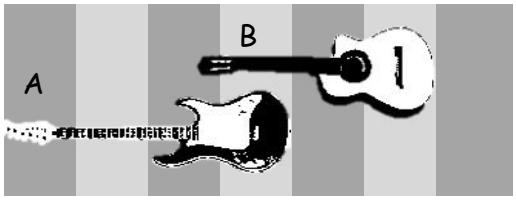
4.

The darker bat's wingspan

is _____

the lighter bat's wingspan.

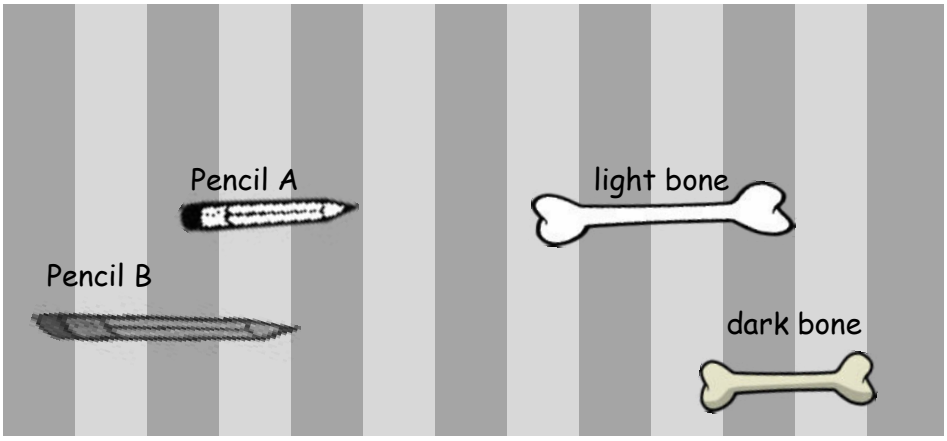
5.



Guitar B is

_____

Guitar A.



6. Pencil B is _____ Pencil A.

7. The dark bone is _____ the light bone.

8. Circle true or false.
   The light bone is shorter than Pencil A. **True** or **False**

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9. Find 3 school supplies. Draw them here in order from **shortest** to **longest**. Label each school supply.

Name _____ Date _____

Write the words **longer than** or **shorter than** to make the sentence true.

A 

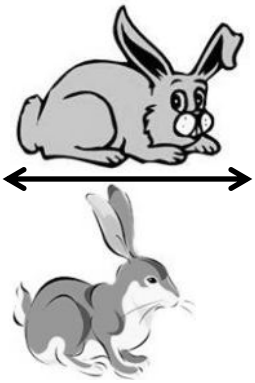
B 

Shoe A is _____ Shoe B.

Name _____ Date _____

Follow the directions. Complete the sentences.

1. Circle the **longer** rabbit.

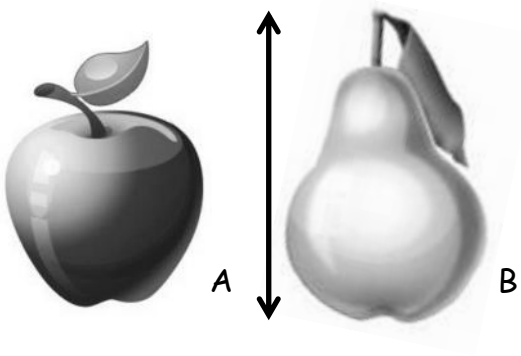


Peter

Floppy

_____ is longer than _____.

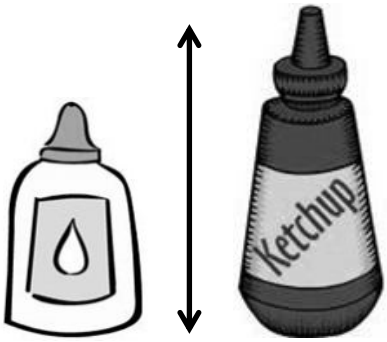
2. Circle the **shorter** fruit.



_____is shorter than _____.

Write the words **longer than** or **shorter than** to make the sentences true.

3.

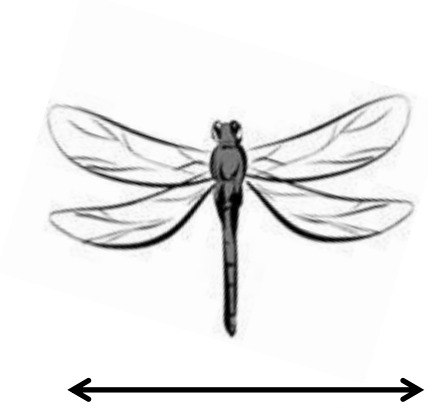


The glue

is _____

the ketchup.

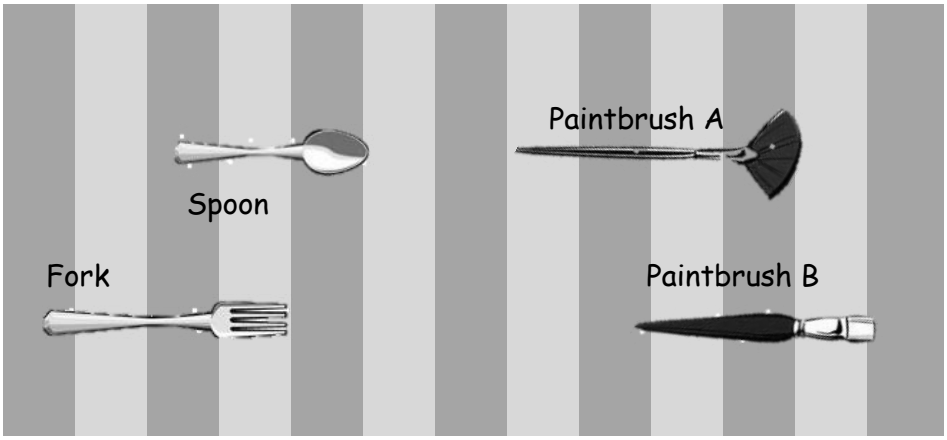
4.



The dragonfly's wingspan

is _____

the butterfly's wingspan.



5. Paintbrush A is _____ Paintbrush B.

6. The spoon is _____ the fork.

7. Circle true or false.

   The spoon is shorter than Paintbrush B. **True** or **False**

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8. Find 3 objects in your room. Draw them here in order from shortest to longest. Label each object.

The _____ is longer than the _____.

The _____ is shorter than the _____.

longer than and *shorter than* sentence frames