

LESSON 5

Objective

Measure differences in length.

Common Core State Standards

- **2.MD.4** Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.

Measurement and Data

Comparing Two Lengths

Measuring and comparing the lengths of two different objects builds children's concept of size and helps prepare them to work with perimeter, area, and distance. In this activity, children will use Inchworms™ and the Inchworms Ruler to determine how many inches longer one object is than another. They will use their subtraction skills to find the difference.

Try It! Perform the Try It! activity on the next page.

Talk About It

Discuss the Try It! activity.

- **Ask:** How long is the marker? How long is the crayon? How can Darlene find out how much longer the marker is than the crayon? **Say:** To find out how much longer one object is than another, we can measure both objects. Then we subtract the shorter length from the longer length. **Ask:** How much longer is the marker than the crayon?
- **Say:** When we compare the lengths of two objects, we must use the same unit of measurement for both objects. Let's say we compare two pieces of string and one piece is 1 foot long and the other piece is 9 inches long. **Ask:** Which piece is longer? How many inches are in a foot? How much longer is the string that is a foot, or 12 inches, than the one that is 9 inches?

Solve It

With children, reread the problem. Have children measure each item with the Inchworms Ruler. Have them express their findings in a sentence, such as, "The marker is 2 inches longer than the crayon."

More Ideas

For other ways to teach about differences in length—

- Have pairs find five small objects around the room or in their desks to measure. Have one child pick two of the objects to compare. Have each child measure one of the objects using Inchworms and compare their measurements. Then have them complete the sentence: The _____ is _____ inches longer than the _____. Have children take turns picking two of the objects to measure.
- Have pairs use the Inchworms Ruler to measure two large objects in the room and compare the two lengths in feet.

Formative Assessment

Have children try the following problem.

How many inches longer is the bottom line than the top line?



- A. 2 inches B. 3 inches C. 4 inches

Try It! 25 minutes | Pairs

Here is a problem about finding the difference between the lengths of two objects.

Darlene knows that her markers are longer than her crayons, but she wants to know how much longer. How can she find out?

Introduce the problem. Then have children do the activity to solve the problem. Distribute Inchworms, Inchworms Rulers, markers, crayons, paper, and pencils to children.

Materials

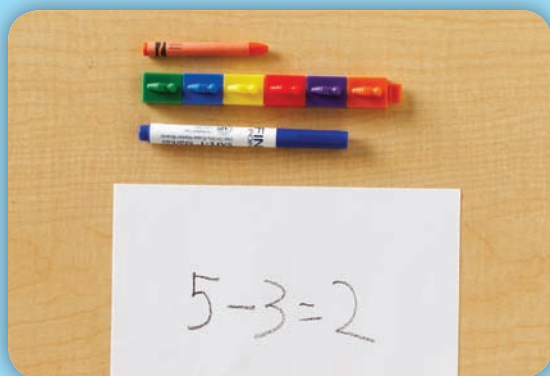
- Inchworms™ (12 per pair)
- Inchworms Ruler (1 per pair)
- markers (1 per pair)
- crayons (1 per pair)
- paper (1 sheet per pair)
- pencils (1 per child)



1. Say: First we need to measure the marker using the Inchworms and the ruler. Remember that Inchworms are an inch long, so our unit of measurement is inches. **Ask:** How many Inchworms, or inches, long is the marker?



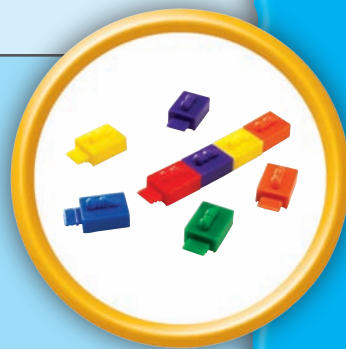
2. Say: Now we need to measure the crayon. Place your crayon so that its flat end lines up with the left end of the marker and Inchworms. **Ask:** How many Inchworms, or inches, long is the crayon?



3. Say: Now you can compare. You can count the number of Inchworms between the right end of the crayon and the right end of the marker. You also can subtract the length of the crayon from the length of the marker. **Ask:** How many inches longer is the marker than the crayon?

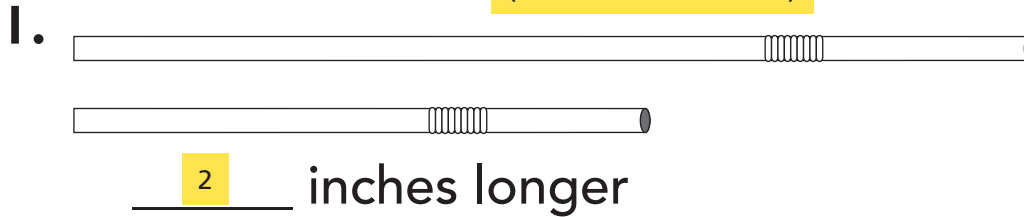
Look Out!

Watch for children who aren't aligning the starting edges. It is easy for children to forget to keep things aligned. These children may benefit from having a book or notepad on the left to define the starting edge; children can place their items and Inchworms against it.



Use Inchworms. Measure each item. Write how many inches longer one item is than the other.

(Check students' work.)



Use an Inchworms Ruler. Measure the items.
Answer the question.

Answers will vary.

4. How much longer is one side of a book than the other side?

one side ____ inches
 other side ____ inches
 ____ inches longer

5. How much longer is one side of your desk than the other side?

one side ____ inches
 other side ____ inches
 ____ inches longer

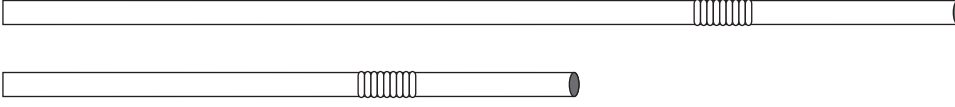
Answer Key

Challenge! Draw two items from your room. Measure each item. Write the lengths. Write how much longer one item is than the other.

Challenge: Answers will vary. Check that children subtract correctly.

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Use Inchworms. Measure each item. Write how many inches longer one item is than the other.

1. 
_____ inches longer

2. 
_____ inch(es) longer

3. 
_____ inches longer

Use an Inchworms Ruler. Measure the items. Answer the question.

4. How much longer is one side of a book than the other side?
one side _____ inches
other side _____ inches
_____ inches longer

5. How much longer is one side of your desk than the other side?
one side _____ inches
other side _____ inches
_____ inches longer

Name _____

Challenge! Draw two items from your room. Measure each item. Write the lengths. Write how much longer one item is than the other.

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