

Objective

Recognize the relationship between inches and feet.

Common Core State Standards

- **2.MD.1** Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.
- **2.MD.3** Estimate lengths using units of inches, feet, centimeters, and meters.

Measurement and Data**Inches and Feet**

As an important application of mathematics, measurement needs careful attention. Children must understand the need for standard units of measure and that inches and feet are customary units that are used in the United States. The relationship between inches and feet needs to be explored with children as they discover how many inches comprise one foot and how to measure the length of different objects.

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

Talk About It

Discuss the Try It! activity.

- **Ask:** *How long is one Inchworm?* Guide children to use the word *inch* to describe the length.
- **Say:** *One Inchworm is 1 inch long.* **Ask:** *How many inches long is the Inchworms™ Ruler?*
- **Say:** *The ruler is 12 inches long.* **Ask:** *What is another word for something that is 12 inches long?* Guide children to use the word *foot* to describe the length of the ruler.
- **Ask:** *How many inches long is your desk? Is your desk more than a foot long? How does this compare with your estimate?* Ask children to describe the length of their desk in feet and inches.

Solve It

With children, reread the problem. Have children act out the problem, using the measurements of their desks. Tell them that their desks must be at least 2 feet long for the model to fit on it. Have children figure out whether or not the model would fit.

More Ideas

For other ways to teach about the relationship between inches and feet—

- Children can trace their partner's body on butcher paper and then measure the tracing of their own body. First have them estimate their height to the nearest foot. Then have them draw one straight line from head to toe on the tracing and use an Inchworms Ruler to measure the length of the line.
- Have children use the Inchworms and Inchworms Ruler to measure other objects in the classroom. Ask them to make an estimate in inches or feet, measure, and compare estimates and actual measurements.

Formative Assessment

Have children try the following problem.

Which is the most likely measurement for the length of a baseball bat?

- A. 6 inches B. 10 feet C. 3 feet

Try It! 30 minutes | Pairs

Here is a problem about recognizing the relationship between inches and feet.

Billy wants to bring his plane model for show-and-tell. He wants to put it on his desk, but he doesn't want anyone to walk into it and knock it down. He knows that his model is 2 feet long. How can Billy figure out if his model will fit on his desk?

Introduce the problem. Then have children do the activity to solve the problem.

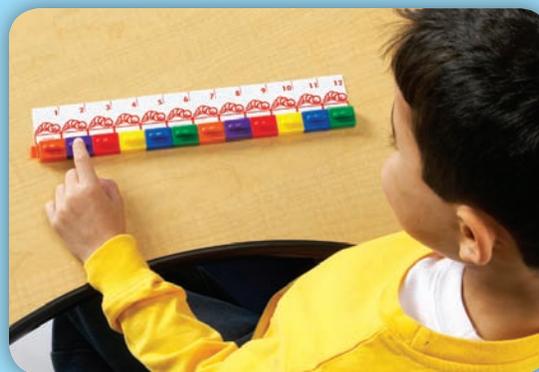
Distribute 12 Inchworms and 1 Inchworms Ruler to each pair of children.

Materials

- Inchworms™ (12 per pair)
- Inchworms Ruler (1 per pair)



1. Ask children to compare the length of one Inchworm to the length of one Inchworms Ruler. Guide them to notice that one Inchworm is the same length as one numbered space on the Inchworms Ruler.



2. Have children explore how many Inchworms equal the length of the Inchworms Ruler. Ask children to make an Inchworms train that is the same length as the Inchworms Ruler. Then have them count the number of Inchworms used. Introduce *foot* as being equal to 12 inches.



3. Ask children to estimate the length of their desks using Inchworms. Ask children to measure the length of their desk or table using the Inchworms Ruler. They should first measure across from left to right. Then have children measure from bottom to top.

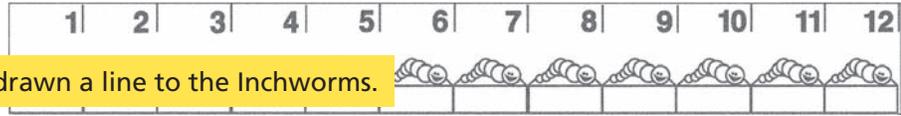
! Look Out!

Children may not have a great deal of practice using rulers. Because of this, they may make errors while measuring. Remind children that they need to make sure that the zero mark of the Inchworms Ruler lines up with the end of the object. If an object is more than 12 inches long, emphasize that they must measure part and then move the Inchworms Ruler, being careful not to measure the same area twice. They can make a mark or put an object, such as a pencil point, at the end of the Inchworms Ruler to mark its place.



Use Inchworms and an Inchworms Ruler.
Draw a line to match the measuring tool
with the unit it measures. (Check students' work.)

1. inch



Check that students have drawn a line to the Inchworms.

2. foot



Check that students have drawn a line to the Inchworms Ruler.

Estimate the length of each. Use Inchworms
and an Inchworms Ruler to measure each
item in your class. Answers will vary.

3. width of door

Estimate

_____ feet

_____ inches

Actual

_____ feet

_____ inches

4. table

Estimate

_____ feet

_____ inches

Actual

_____ feet

_____ inches

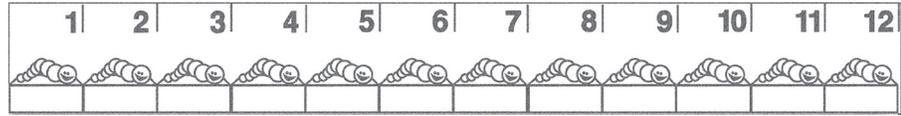
Answer Key

Challenge! Name something that is about 1 inch long. Name something that is about 1 foot long.

Challenge: Answers will vary.

Use Inchworms and an Inchworms Ruler.
Draw a line to match the measuring tool
with the unit it measures.

1. inch



2. foot



Estimate the length of each. Use Inchworms
and an Inchworms Ruler to measure each
item in your class.

3. width of door

Estimate

_____ feet

_____ inches

Actual

_____ feet

_____ inches

4. table

Estimate

_____ feet

_____ inches

Actual

_____ feet

_____ inches

Name _____

Challenge! Name something that is about 1 inch long. Name something that is about 1 foot long.
