

Objective

Estimate and measure length using nonstandard units.

Common Core State Standards

- **K.MD.1** Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object.

Measurement and Data

Estimating and Measuring Length

Estimating length incorporates number sense and spatial sense while creating a beginning foundation of reference points for linear measurements. In this lesson, children will estimate the length of classroom objects and then use Color Tiles to create actual measurements.

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

Talk About It

Discuss the Try It! activity.

- **Ask:** *How long did you think the shoe would be before you measured it? How many tiles long was the shoe? Was your guess close?*
- **Say:** *Pick another object in the room that is smaller than the length of the shoe.* **Ask:** *What do you think would be a good estimate for this object's length in tiles?* Allow children to offer their estimates for an object. Then measure the object with children to find the actual length.
- **Ask:** *If you were to measure your shoe using a board eraser, would the answer be the same? Why or why not?*

Solve It

With children, reread the problem. Have children draw a picture to show Angie's shoe being measured with tiles. Ask children to use their drawings to explain how Angie and Tim could find out who guessed correctly.

More Ideas

For other ways to teach about estimating and measuring lengths—

- Have children work in groups and use Pattern Blocks to measure a set of classroom objects. Have each group use a different block shape. Then have groups compare measurements and discuss the different measurements they get by using different blocks. Children should conclude that they need to use the same size block to get the same answers.
- Have children measure length with Snap Cubes®. Children can estimate a length and then use cubes to measure the object to see how close their estimate is to the actual length in cubes.

Formative Assessment

Have children try the following problem.

About how many tiles would you need to measure the length of the crayon?
Circle the answer.



Try It! 25 minutes | Pairs

Here is a problem demonstrating how to estimate and measure length.

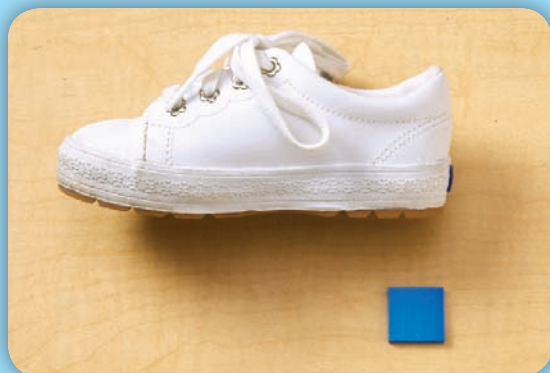
Angie wants to know how many Color Tiles long her shoe is. Tim says he thinks it is 4 tiles long. Angie thinks it is 10 tiles long. How can Angie and Tim find out how long the shoe is?

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

Have children work in pairs. Pass out tiles and paper to each pair. Have one volunteer from each pair, remove a shoe to be measured.

Materials

- Color Tiles (about 50 per pair)
- paper (1 sheet per pair)



1. Have children place one tile next to one shoe. Tell them that they are going to measure the length of a shoe using the tiles.



2. Ask: *How many tiles long do you think the shoe is?* Have children estimate and write down their estimates on paper.



3. Say: *Now we will measure the shoe.* Have children measure the length of the shoe with tiles. **Ask:** *How many tiles long is the shoe?* Allow children to compare the estimates they wrote down to the actual measurements.

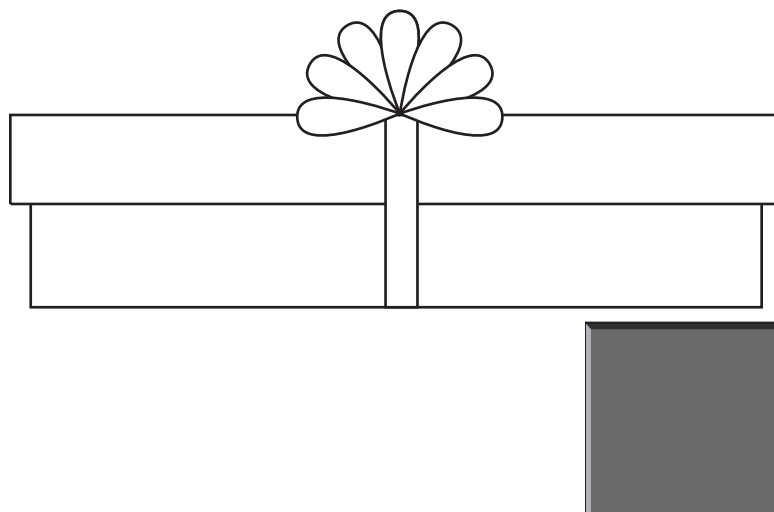
Look Out!

Watch for children who leave gaps between tiles as they measure. Make sure children understand that they must line up the tiles in a straight line, flush with the shoe. Also discuss measuring objects that don't match evenly to whole tiles. Suggest that children round up to the nearest whole tile, or have them measure to the nearest "half-tile" if they are unable to follow the concept of rounding.

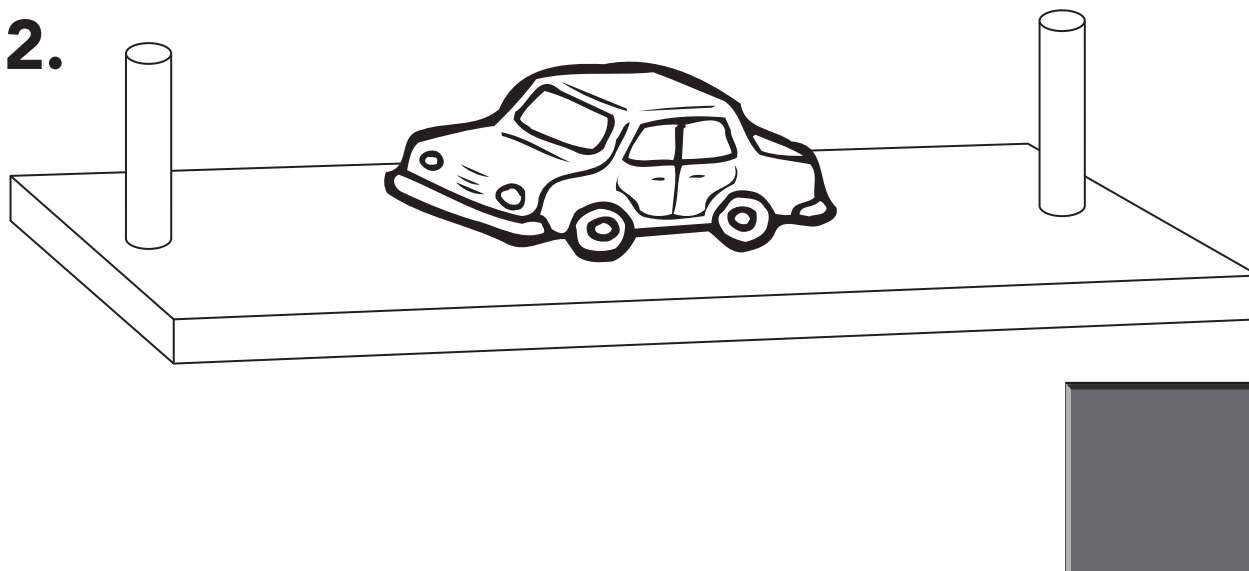


Check children's work.

1.



2.

**Directions**

1. How many tiles long do you think the present is? Write your number on the first line. Then use Color Tiles to measure the present. Write the length on the second line. **2.** How many tiles long do you think the shelf is? Write your number on the first line. Then use Color Tiles to measure the shelf. Write the length on the second line.



Answer Key

Check children's work.

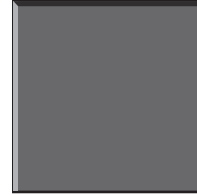
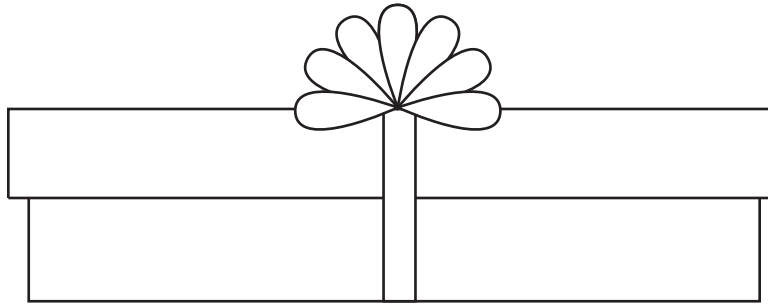
Challenge

Turn your page sideways. Draw a long snake. How many tiles long do you think your snake is? Write your number and underline it. Then use Color Tiles to measure your snake. Write the length and circle it.

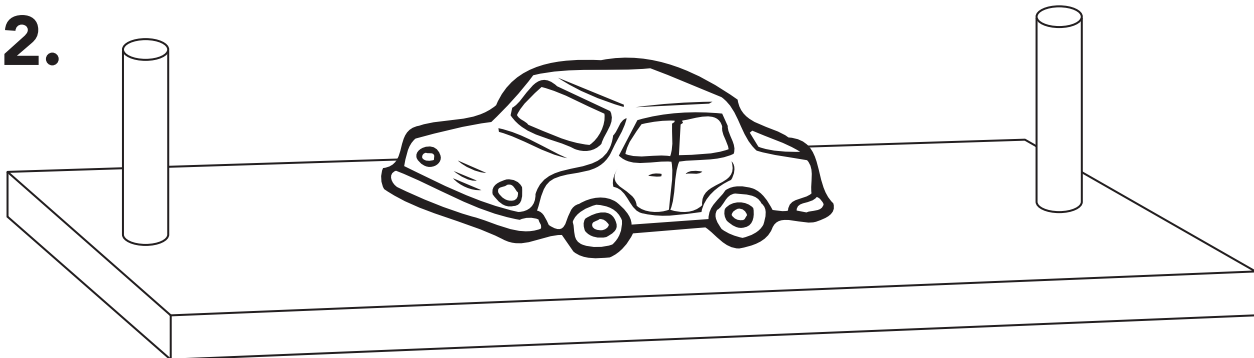
© ETA hand2mind™



1.



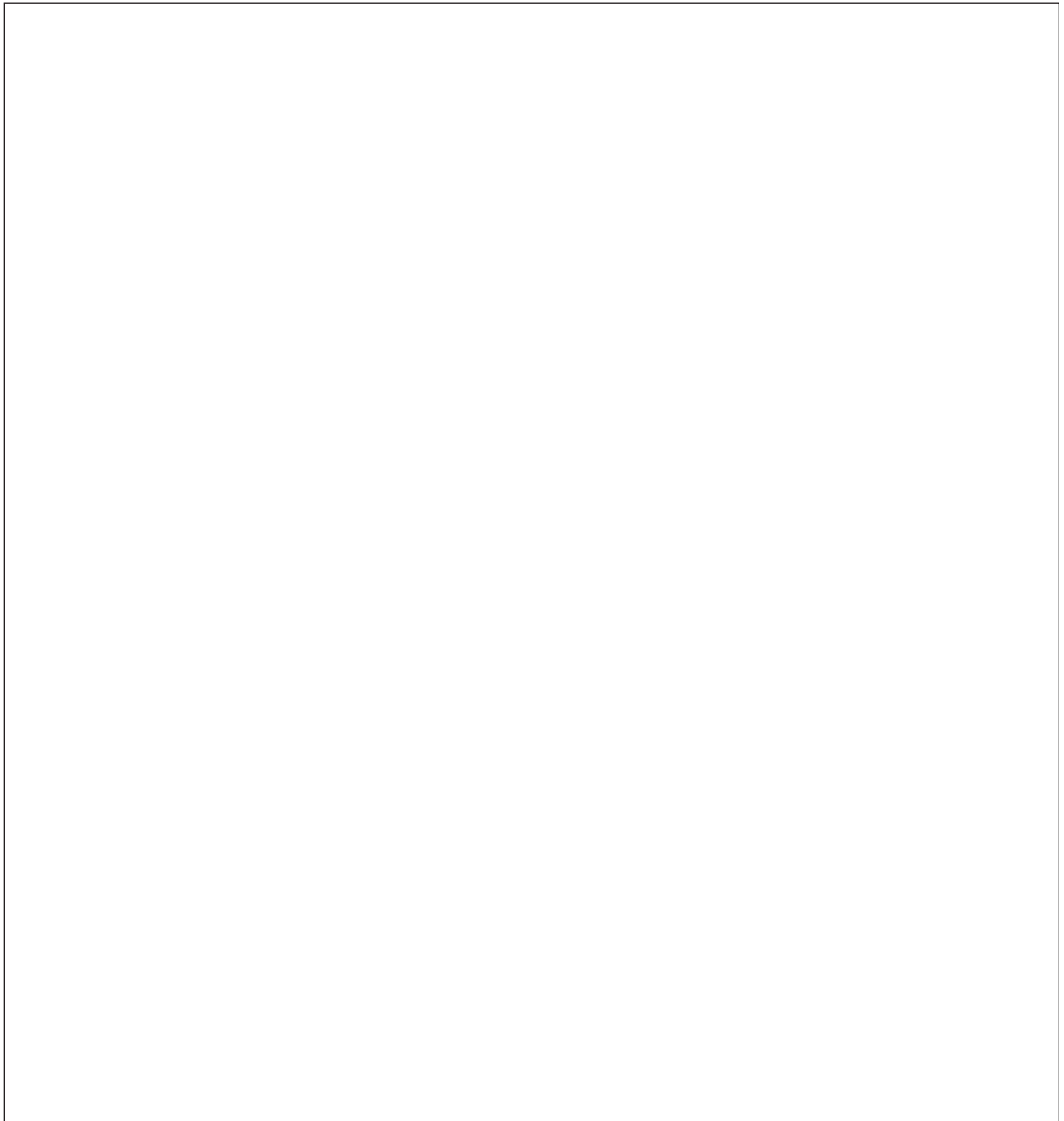
2.



Directions

1. How many tiles long do you think the present is? Write your number on the first line. Then use Color Tiles to measure the present. Write the length on the second line. **2.** How many tiles long do you think the shelf is? Write your number on the first line. Then use Color Tiles to measure the shelf. Write the length on the second line.

Name _____



Challenge

Turn your page sideways. Draw a long snake. How many tiles long do you think your snake is? Write your number and underline it. Then use Color Tiles to measure your snake. Write the length and circle it.