Sorting by Length

Objective

Sort objects by length; use the terms *shortest* and *longest*.

Common Core State Standards

■ **1.MD.1** Order three objects by length; compare the lengths of two objects indirectly by using a third object.

Measuring brings together mathematical disciplines such as geometry and number sense. Comparison of objects helps build a foundation in measurement concepts. In this lesson, children will begin using *shortest* and *longest* to describe objects while sorting them by length.

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

Talk About It

Discuss the Try It! activity.

■ Emphasize that when we put something "in order," we apply the order from left to right or from top to bottom.

■ **Say:** *We put the trains in order from shortest to longest.* **Ask:** *What happens to the middle train if we make the order longest to shortest? Does the middle train help you compare the shortest train to the longest train?*

■ **Ask:** *How can you be sure which train is the shortest? The longest?* (Look for children counting the number of Snap Cubes® or comparing by sight.)

■ **Say:** *Let's make a new train that is eight cubes long.* **Ask:** *Where would we put this train if we wanted to keep our trains in order from shortest to longest?*

Solve It

With children, reread the problem. Have children draw a picture that shows what Alison drew.

More Ideas

For other ways to teach about sorting objects by length—

■ Give children more Snap Cubes to make trains of different sizes. Have them work with partners to sort the trains by length. Help them work on sorting more trains by first asking them to make three trains, then four, then five.

■ Give children Link 'N' Learn® Links to create different-length chains, and then to sort chains by length. Emphasize that children should lay the chains flat to measure their length.

Formative Assessment

Have children try the following problem.

Circle the pencil that is the longest.

Try It!   15 minutes | Pairs

Here is a problem demonstrating how to sort objects by length.

Alison drew a picture of three worms crawling on the ground. She showed the picture to her teacher. Her teacher said that the worms were in order from shortest to longest. How can you show the order of the worms in Alison's picture?

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

Divide the class into pairs. Pass out three trains of Snap Cubes® to each pair. The three trains should be of different lengths.

Materials
• Snap Cubes® (3 trains of different lengths per pair)

1. Instruct children to count their trains. Demonstrate if necessary.

2. Ask children to line up their trains vertically, and have them line up the left-hand sides. A straightedge can be used to help align the trains.

3. Now invite children to rearrange their trains from shortest to longest, with the shortest train on the top. Remind them to line up the edges of their trains correctly.

⚠ Look Out!

Watch out for the children who do not keep their trains aligned on the left ends. Model what happens when the trains are not lined up correctly to show children that the results will be skewed. Give these children a ruler or other straightedge to help them align their trains correctly. Also, make sure that children do not confuse *longest* with *tallest.* Remind children that tallest describes direction from the ground to the sky. Length is left to right or side to side.

Use Snap Cubes. Build each train.

(Check students' work.)
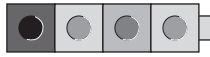
1. Circle the shortest train. Students should circle middle train.

2. Put an X on the longest train. Students should put X on bottom train.

Use Snap Cubes. Build 3 trains. Put them in order from longest to shortest. Write the number of Snap Cubes each train has.

3. _____, _____, _____ Make sure numbers are written in order from greatest to least.

longest ⟶ shortest

Use Snap Cubes. Build each train. Circle the train that is shorter than the first train.

4. Students should circle third train.

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Challenge!   Use Snap Cubes. Build a train. Draw it. Then build 2 more trains of different lengths. How do these 2 trains compare to the first one?

Challenge: (Sample) Students should build three trains of different lengths and compare the last two to the first.

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Name _____

Use Snap Cubes. Build each train.

1. Circle the shortest train.

2. Put an X on the longest train.

Use Snap Cubes. Build 3 trains. Put them in order from longest to shortest. Write the number of Snap Cubes each train has.

3. _____ , _____ , _____

longest ⟶ shortest

Use Snap Cubes. Build each train. Circle the train that is shorter than the first train.

4.

Challenge!   Use Snap Cubes. Build a train. Draw it. Then build 2 more trains of different lengths. How do these 2 trains compare to the first one?

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