



CONSTRUCTION MEASUREMENT

Overview

Book: *Goodnight, Goodnight, Construction Site* by Sherri Duskey Rinker and Tom Lichtenheld

Grades 1-2

In this math lesson, students will move through a set of activity centers. Students will perform a variety of measurement activities at each center. These can be adapted for grade appropriate targets.

Standards

1.MD.1	Order three objects by length; compare lengths of two objects indirectly by using a third object.
1.MD.2	Express the length of an object as a whole number of length units by laying multiple copies of a shorter object end to end.
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.2	Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen.
2.MD.3	Estimate lengths using units of inches, feet, centimeters, and meters.
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.

Objectives

Students will order objects by length from shortest to longest.

Students will measure items using everyday objects and standard units of inch and centimeter.

Students will mark out an area with specified length measurements.

Students will estimate lengths of objects using everyday objects or standard units.

Students will measure how much longer one object is than another.

Materials Required

Rulers with both inch and centimeter markings

Yardstick and meter stick

Large paper clips

Masking tape

Small cubes (1cm)

Straws cut to various lengths using whole numbers

Pipe cleaners cut to various lengths with some twisted together to form longer ones

Dowel rods of various lengths (whole numbers)

Rolls of newspaper cut to various lengths (several between 17 and 19 inches) using whole numbers.

Procedure

1. Create the following activity centers
 - Crane Truck needs to lift up the shortest plumbing pipes first, then the longest. Put the straws in order from the shortest to the longest. Next Crane needs to lift up the longest beams first, then the shortest ones. Put the straws in order from the shortest to the longest.
 - Excavator needs to dig some holes in the ground. Use the ruler and masking tape to mark out rectangles so Digger will know how big to make each hole. Have cards that specify 3 or 4 sizes of rectangles to be marked out, depending on the amount of floor space that is available.

- Dump Truck needs to unload the logs (rolls of newspaper) that are about 18 inches long. First estimate which of the logs are about 18 inches long. Then use the yardstick to measure the ones you selected. Measure all of the logs. Did you find all of the right ones the first time?
 - Builders always measure two times. Measure each of the items in two ways. (Measure using paper clips and small cubes for younger students). Measure using inches and centimeters. (Provide a variety of the of objects to be measured)
 - Builders will want to know how big each piece is on the site. Measure each pair. Which item is the longest of the pair? How much longer? (provide of variety of pairs of objects from the materials list)
2. Explain the instructions for each center.
 3. Divide students into groups and provide time for students to move through each center.

Extensions

1. Go outdoors and measure the buildings windows, doors, walls, or objects on the playground. Have students estimate how large each item is first.
2. Ask students to make a list of five items in their homes. Have students measure these and bring back the information.

Assessment

This is an exploratory activity. Formative assessment should be used as the students work through each of the centers.

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