

Core Content

Cluster Title: Measure and estimate lengths in standard units.

Standard 1: Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.

MASTERY Patterns of Reasoning:

Conceptual:

Students will identify and understand the difference between the standard tools for linear measurement.

Students will understand that longer units of measure take fewer repetitions to measure objects.

Students will understand that shorter units of measure take more repetitions to measure objects.

Students will understand that they will typically use tools closest to the size of the measured object for efficiency (e.g., use a ruler to measure a book, not a meter stick).

Students will identify and understand the beginning point of the appropriate measuring tool.

Procedural:

Students can investigate and use customary and metric tools of linear measurement.

Students can learn tool names and linear measurement vocabulary.

Students can measure a variety of objects using the appropriate tools.

Students can measure accurately (leave no gaps, allow no overlays, and start at 0 on a measurement tool).

Representational:

Students can identify and record the appropriate length and unit (5 inches, 2 yards, or 9 cm).

Supports for Teachers

Critical Background Knowledge	
<p>Conceptual: Students will understand linear measurement (measurement of length). Students will understand repeated use of the same unit of measurement to measure one object. Students will understand units of measure (paper clips, unifix cubes, inches, feet, centimeters, meters, etc.).</p> <p>Procedural: Students can measure length by comparing two (or more) objects and identify which is longer and which is shorter. Students can use multiple copies of one object or one object repeatedly end to end to measure another object (e.g., paper clips to measure a book).</p> <p>Representational: Students can record length and unit of measure.</p>	
Academic Vocabulary and Notation	
inch, foot, yard, yardstick, ruler, centimeter, meter, meter stick, measuring tape, length, customary, metric, measure, unit(s)	
Instructional Strategies Used	Resources Used
Transition from nonstandard to standard units— <i>Read 12 Snails to One Lizard.</i> Show standard tools together for comparison. Use inch squares and rulers to measure in inches; use centimeter cubes and centimeter rulers to measure in centimeters. Measure irregular objects with a soft tape measure. Go outside and measure longer objects with a measuring tape.	Hightower, Susan. <i>12 Snails to One Lizard.</i> Simon & Schuster, 1997. Myller, Rolf. <i>How Big Is a Foot?</i> Yearling, 1991. Briggs, Raymond. <i>Jim and the Beanstalk.</i> Puffin, 1997. http://www.k-5mathteachingresources.com/measurement-and-data-activities.html

Assessment Tasks Used	
<p>Skill-Based Task: Measure the length of the door; include length and unit. Measure the length of your partner's arm. Measure the length of your classroom. Measure the crayon box, length of your pencil, etc. When shown several pictures of different sized items, students determine which measurement tool would be most appropriate for measuring each item.</p>	<p>Problem Task: We need to decorate for our party. How much ribbon will we need to go across four desks placed side by side? Be sure to include your tool and unit of measure. Why did you use that unit?</p>