

## Core Content

**Cluster Title:** Measure lengths indirectly and by iterating length units.

**Standard 2:** Express the length of an object as a whole number of length units by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.

**MASTERY Patterns of Reasoning:**

**Conceptual:**

Students will understand linear measurement.

Students will understand that to measure an object, one must use the same unit of measurement, end to end, with no gaps or overlaps.

Students will understand that almost any object can become a unit of measurement (paperclips, unifix cubes, teddy bear counters, mittens, shoes, etc.).

Students will understand how to record measurements and correctly label with the unit used.

**Procedural:**

Students can measure a variety of objects using a variety of nonstandard tools (paperclips, unifix cubes, teddy bear counters, etc.).

Students can measure accurately (i.e., line up end to end, leave no gaps, allow no overlays, and use a starting point).

Students can express the length of the object with a whole number and label with the appropriate units.

When comparing objects, students will use the same unit to measure both items (e.g., the book is 10 counters long, the desk is 40 counters long). Using that information, students will draw conclusions about the length of the two objects (the desk is longer than the book).

**Representational:**

Students can record measurements through words and pictures and label the nonstandard units.

## Supports for Teachers

<b>Critical Background Knowledge</b>
<p><b>Conceptual:</b>                  Students will understand that all objects have length.                  Students will understand that the words “long,” “tall,” and “short” describe length.                  Students will understand that length and height can be measured.</p> <p><b>Procedural:</b>                  Students can directly compare two objects according to length (e.g., directly compare the heights of two children and describe one as taller/shorter).</p> <p><b>Representational:</b>                  Given a picture, students can draw an additional object that is longer/taller or shorter than the given object.                  Students can compose a picture and identify objects as longer/taller or shorter than another object in the same picture.</p>
<b>Academic Vocabulary and Notation</b>
unit, measurement, data, record, length, height, starting point, compare, iterate, long, longer, longest, tall, taller, tallest, short, shorter, shortest

Instructional Strategies Used	Resources Used
<p>Read <i>Super Sandcastle Saturday</i> and discuss as an introduction to measurement.</p> <p>Provide a variety of manipulatives (paperclips, unifix cubes, teddy bear counters, etc.) for students to use as tools when measuring a variety of objects.</p> <p>Have multiple students measure the same thing using different units.</p> <p>Read and discuss <i>How Big Is a Foot?</i> Have students use their own feet to measure a predetermined distance (e.g., the hallway between two points, the basketball court). Compare results and discuss.</p> <p>Have students trace their hand. Using a variety of materials, (buttons, beans, counters, links, etc.), have students measure their hand in four different ways. Record their findings inside of their hand outline.</p> <p>Use seasonal themes to measure different items (e.g., measure with candy canes in December, measure your feet with different manipulatives during Dr. Seuss Week, etc.).</p>	<p>Lesson plans and activities:  <a href="http://www.uen.org/Lessonplan/preview?LPid=10729">http://www.uen.org/Lessonplan/preview?LPid=10729</a>  <a href="http://www.proteacher.org/c/335_Linear_Measurement.html">http://www.proteacher.org/c/335_Linear_Measurement.html</a></p> <p>Murphy, Stuart. <i>Super Sand Castle Saturday</i>. HarperCollins, 1999.</p> <p>Leedy, Loreen. <i>Measuring Penny</i>. Henry Holt &amp; Co (BYR), 2000.</p> <p>Lionni, Leo. <i>Inch by Inch</i>. Knopf Books for Young Readers, 2010.</p> <p>Myllar, Rolf. <i>How Big Is a Foot?</i> Yearling, 1991.</p>

<b>Assessment Tasks Used</b>	
<b>Skill-Based Task:</b> Provide a paper with a variety of lines (different lengths and directions). Have students use a few different manipulatives to measure the same line (e.g., Skittles, marshmallows, cubes, counters, etc.).	<b>Problem Task:</b> Here is a sample problem-task:  You got a new book from the library. It is 10 paperclips tall and 8 paperclips wide. Will the book fit in your backpack? How do you know?