

Unit 4: Measurement, Counting, and the Number System

About this Unit

Building Number Skills

Students gain a deeper understanding of numbers and number relationships as they engage in activities in which they count, combine, and compare amounts. They develop visual images of numbers and solve problems in which they find different combinations of the same number. Students are introduced to addition and subtraction situations through story problem contexts.

Measurement

Work with linear measurement continues as students use nonstandard units to measure the length of objects and paths. Students measure the length of an object by lining up multiple units and count a set of up to 15 objects.

TEAMBPCS Office of Mathematics PreK-12

The PreK-12 Mathematics curriculum focuses on problem solving, communication, and critical thinking in order to provide a foundation where every student reaches their potential to become a globally competitive, mathematically literate citizen.



Measuring and Counting





In this unit students use nonstandard units of measurement, such as craft sticks, cubes, and paperclips to determine the length of objects. As they work, students explore key measurement ideas. They learn the importance of lining up tools with the object to be measured, what happens if those units are (or are not) laid straight, or if there are (or are not) gaps between them. Measuring with units is a complicated idea that develops gradually over the elementary years. Students need many opportunities to measure using repeated units with accuracy and precision to describe a length.



Students use cube towers to measure objects.

Solving Story Problems

Students are introduced to the Story Problem Routine in this unit.

<p>1. Listen to the story.</p> 	<p>2. Tell the story in your own words.</p> 	<p>3. Solve the problem. You can:</p> <table border="1"> <tr> <td data-bbox="821 533 911 667">Act it out</td> <td data-bbox="919 533 1008 667">Draw pictures</td> <td data-bbox="1016 533 1105 667">Use cubes</td> </tr> </table> 	Act it out	Draw pictures	Use cubes	<p>4. Show your solution.</p> 
Act it out	Draw pictures	Use cubes				

When students solve story problems, they first need to make sense of the situation. They need to answer questions such as: What action is being described in the problem? What does each amount represent? Is the second amount to be *combined with* the first, or is it to be *separated from* the first? To help them answer such questions students retell the stories, act them out, and solve them by modeling the action involved.

Helping Your Child at Home

Read measurement books.

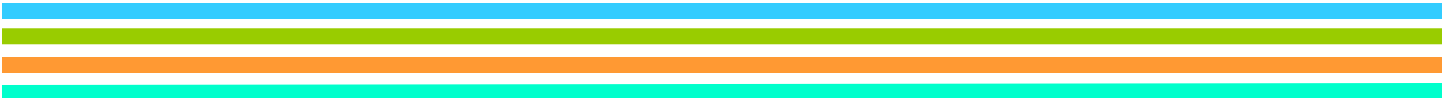
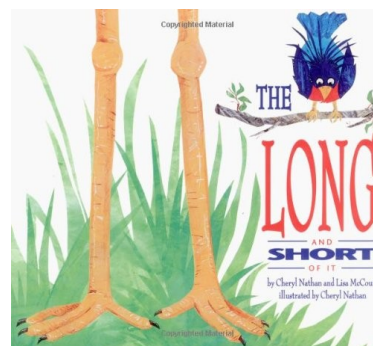
Find 3 objects in the home that are longer or shorter than your shoe.

Measure the length of various items around the house using different objects (crayons, pennies, etc).

Measure distances in your house (e.g., from the kitchen table to the sink, from your bed to your closet) using different objects (e.g., craft sticks, shoes, your own feet).

Find objects in the grocery store that are longer or shorter than a loaf of bread.

Trace your foot with chalk outside. Trace a friend's foot too. Which foot is longer?



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Visit these Web sites for measurement activities.

- Investigations (http://investigations.terc.edu/library/Games_K1.cfm)
Students can explore a variety of games leveled for K-1 students focusing on numbers, addition and subtraction, geometry, measurement, data, and patterns.
- PBS (<http://pbskids.org/games/measurement/>)
How Big Are You? Students measure the length of different dinosaurs.
How Tall? Help Curious George measure objects using silly things.
- Sesame Street (<http://www.sesamestreet.org/games>)
Measure that Animal Students use nonstandard units to measure zoo animals.
- Cool Math (<http://www.coolmath.com/>)
Students can explore a variety of games leveled for all ages that focus on number sense, measurement, computation, and geometry.
- Pearson School (http://www.pearsonschool.com/live/images/custom/envisionmath_ca/games/flea11.html)
The Fearless Flying Fleas: Bold Students measure objects with nonstandard units.
- ABCya (http://www.abcya.com/kindergarten_computers.htm)
Students can explore a variety of Kindergarten games that focus on numbers, measurement, shapes, geometry, and patterns.

