

Unit 2: Measurement and the Number System

About this Unit



Exploring Numbers

Students explore numbers through a variety of counting activities. They build knowledge of the counting sequence of quantities up to 12, use numerals and visual images to represent quantities, represent equivalent amounts, and develop skills for accurate counting backwards and forwards. They also begin to compare quantities and develop an understanding of the magnitude and position of numbers.

Measurement

As an introduction to linear measurement, students measure and compare the lengths of objects using direct comparison. Students use this method to determine which object is longer or shorter, and to sort objects into two categories according to length.

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.

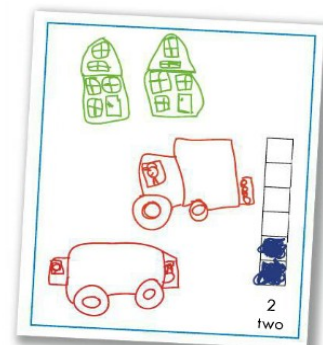


Counting is More Than 1, 2, 3

Counting is the basis for understanding our number system and for almost all of the number work in the primary grades. Students need to understand more than rote counting. Rote counting is when know more than just the number names, their sequence, and how to write each number.

Beyond Rote Counting: While it may seem simple, counting actually requires the use of a wide variety of skills and concepts. Just as saying the alphabet does not indicate that a student can use written language, being able to say, "one, two, three, four, five, six, seven, eight, nine, ten" does not necessarily indicate that students know what those counting words mean. Students need to be able to use numbers in meaningful ways in order to build an understanding of quantity and number relationships.

The picture on the right shows how a Kindergarten student may represent the quantity of two.



Sample Student Work

Measurement:

In Kindergarten, students start working with ideas about what is *long*, *longer*, *short*, and *shorter*. Their ideas about length begin to develop as they compare the lengths of different objects.

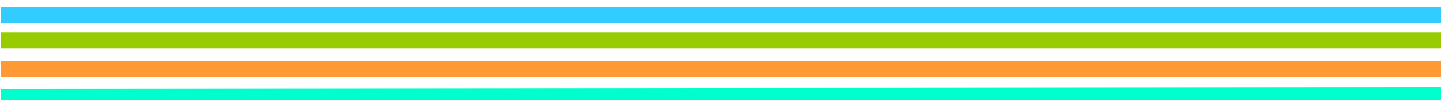
Common Errors as Students Begin to Measure

As students begin to measure, they may not line up objects accurately to compare their lengths. Rather than simply telling your child how to measure, talk with your child and help them think through their own ideas. Ask questions such as, "Which object is longer?, Which object is shorter?, How do you know?" As children discuss and compare ways of measuring, they gradually develop a sense of length and how to measure accurately.

Helping Your Child at Home



- Read **counting and measurement books**.
- Make a **number book**. Write a number word on each page, and let your child write the numeral as well as draw or glue on the correct number of items.
- Help your child look for sets of objects to count when you are reading, shopping, cooking, or playing.
- Make a **Grab and Count Game** at home. Fill a bag or basket with a collection of toys or items from around the house. Have your child grab a handful and count the quantity.
- Encourage your child to make comparisons using measurement words (e.g., long, longer, short, and shorter).
- Create a family growth chart. Compare family members' heights.



Visit these websites for counting 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, data, and patterns.
- PBS (<http://pbskids.org/games/123/>)
Students can explore a variety of games that focus on basic number sense skills such as counting, measuring, and comparing.
- Sesame Street (<http://www.sesamestreet.org/games>)
Students can explore a variety of games that focus on basic numbers, measurement, shapes, and counting.
- Cool Math (<http://www.coolmath.com/>)
Students can explore a variety of games leveled for all ages that focus on number sense, computation, and geometry.
- Sprout (<http://www.sproutonline.com/games/spuds-counting-game>)
Students count objects and match them from a choice of given numerals.
- ABCya (http://www.abcya.com/kindergarten_computers.htm)
Students can explore a variety of Kindergarten games that focus on numbers, shapes, geometry, and patterns.

