

Unit 1: Addition, Subtraction, and the Number System

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.



About this Unit

In this first number unit in *Grade 1*, students count, order, compare quantities, and work with the operation of addition. Students also work on finding addition combinations up to 10 and learn to make sense of and solve story problems. They are introduced to several of the classroom routines that practice and reinforce work with counting, developing visual images of number, collecting data, and working with concepts of time (calendar/clock).

Counting and Quantity

Throughout first grade, students work on developing strategies for accurately counting a group of up to 120 objects. They have repeated practice with the counting sequence, both forwards and backward, and with counting and keeping track of sets of objects. Students also connect the number names with the written numbers and the quantities they represent.

Composing and Decomposing Numbers

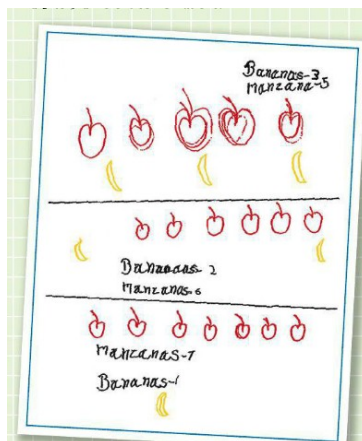
Students have repeated experiences breaking a whole number into two parts or combining two parts to form a whole. Understanding how numbers can be composed (put together) and decomposed (taken apart), and being able to work with numbers in flexible ways is important for future work in addition, subtraction, and algebra.

In this sample problem, students decompose the number 8.

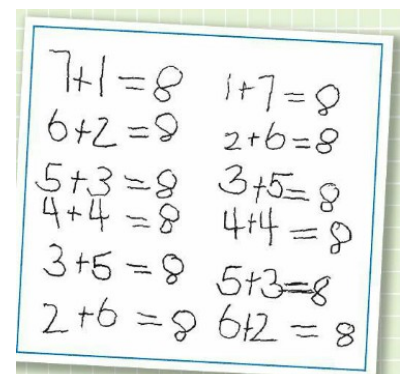
Try to find more than one way to solve the problem. Show your work.

I have 8 fruits.

Some are bananas. Some are oranges. How many of each fruit could I have? How many apples? How many bananas?







Some students may use pictures, numbers, and words to find the combinations.



Other students may find all the combinations as well as a system for keeping track of the combinations.

Story Problems and Addition Strategies

In this unit, students solve story problems. Students are reintroduced to the **Story Problem Routine** from Kindergarten. In the Story Problem Routine, students make sense of the action in a story and visualize the sequence and results of events. There are four steps in the Story Problem Routine: Visualize, Retell, Think, and Share your Strategies.

<p>Visualize Picture the story in your mind.</p> 	<p>Retell Retell the story to a partner.</p> 	<p>Think Will the end result be <u>more</u> or <u>less</u> than the amount you started with?</p> 	<p>Share Your Strategies Share your strategy for solving the problem with the class.</p> 
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In this unit, students will solve story problems such as the sample problem shown below using the Story Problem Routine. As students share their strategies they may share some of the **addition strategies** shown below.

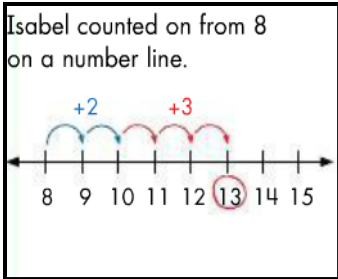
Rosa has 8 shells.
 Sam gives her 3 more shells.
 Max gives her 2 more shells.
 How many shells does Rosa have now?

Count All

Students count out the number in one group, count out the number in the second group, and then count them all from 1.

Count On


Students count on from one number to find the total.



Make a Ten


Students use a combination of ten.

Vic used a combination of 10.




$8 + 2 = 10$

Then he counted on.



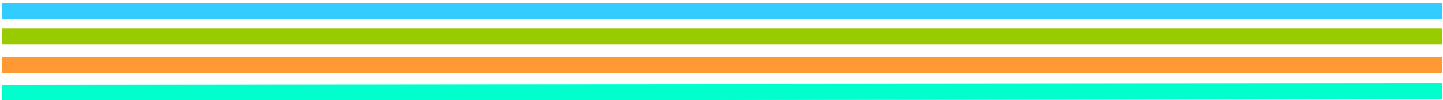
11, 12, 13

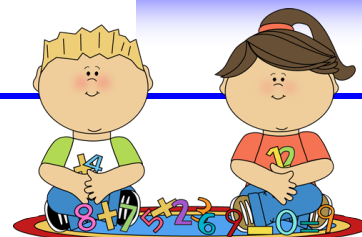


I know that $2 + 3 = 5$.
 Then, I count on
 6, 7, 8, 9, 10,
 11, 12, 13.

Use a Known Combination

Students use a known combination to help them solve.





Helping Your Child at Home

- Look in magazines, books, and newspapers for numbers. Talk about what the numbers represent.
- Make a train with Legos or colored blocks. Write a number sentence for the different colors in the train.
- Give your child an addition or subtraction number sentence and ask them to make up a story problem to go with the number sentence.
- Count objects such as jellybeans in a bowl, pennies in a jar, cheerios in a baggie, etc.
- Practice counting with your child while doing various activities-driving in the car, jumping rope, waiting in line at a store, etc.
- Put different items into groups and talk about which group has more or less items using the terms greater than and less than.
- Practice writing numerals. Make sets of objects to match the numbers.

Visit these Websites for math activities.



- 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.
- Sprout (<http://www.sproutonline.com>)
Spud's Counting Game: Students count objects and match them from a choice of given numerals.