

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

This unit focuses on counting and comparing quantities, composing and decomposing numbers, and understanding the operations of addition and subtraction. Students develop strategies for comparing, combining, and doubling quantities, as well as taking one quantity away. They also achieve fluency with three sets of addition combinations (10s, + 1, + 2). During this first unit of the year, students are introduced to several year-long classroom routines that offer regular practice with composing and decomposing numbers; developing visual images of quantities; counting, collecting, and analyzing data; and telling time.

Telling Time and Counting Money

Students are introduced to telling time to the hour and half-hour using analog and digital clocks. Throughout the year telling time to five minute intervals will continue to be developed.

Students will identify coins and their values, and learn about coin equivalencies.



Story Problems and Addition and Subtraction Strategies

In this unit, students solve story problems. Students are reintroduced to the **Story Problem Routine** from first grade. 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.

Visualize
Picture the story in your mind.

Retell
Retell the story to a partner.

Think
Will the end result be more or less than the amount you started with?


Share Your Strategies
Share your strategy for solving the problem with the class.

Story Problem Routine and Addition and Subtraction Strategies (continued)

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 and subtraction strategies** shown.

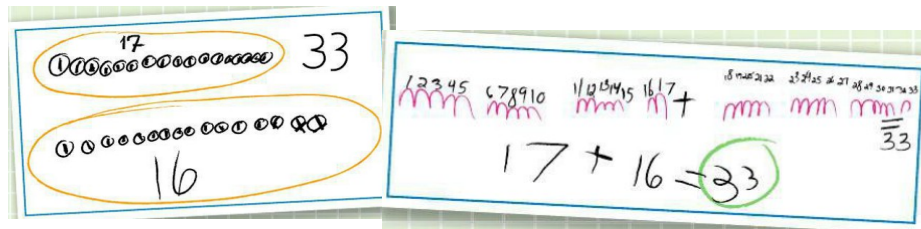
Solve the problem. Show your work.
Write an equation.

The second grade is collecting cans for recycling.
One class collected 17 cans.
The other class collected 16 cans.
How many cans do they have so far?



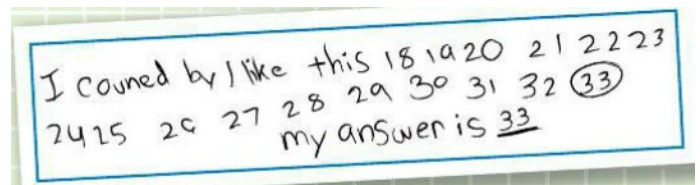
Count All

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



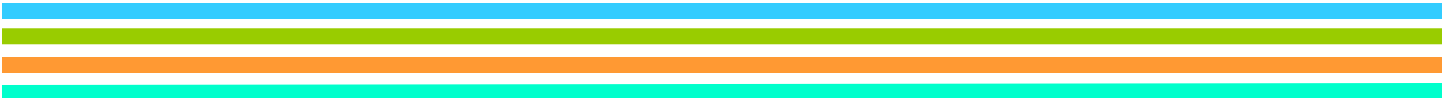
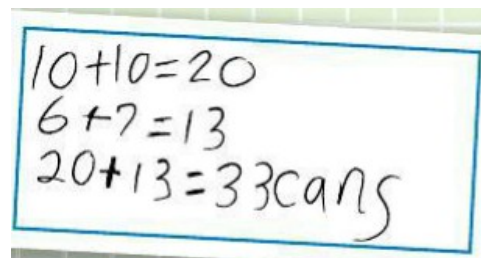
Count On

Students count on from one number to find the total.



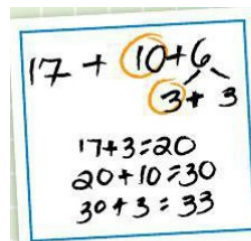
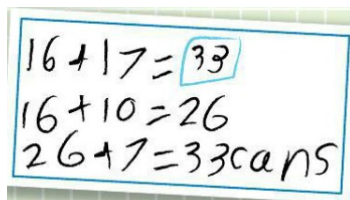
Adding by Place

Students may add using their understanding of place value; adding tens, adding ones, and then adding the two sums together. For example, $10 + 10 = 20$, $6 + 7 = 13$, $20 + 13 = 33$.



Adding Keeping One Number Whole

Students keep one of the numbers (addends) whole and break the other number apart, making the problem easier to solve.



Doubles

Students develop and record strategies for doubling a quantity and for developing fluency with the doubles combinations, such as $4 + 4 = 8$ and $7 + 7 = 14$. Arrays are used to develop the concept of doubling a number or quantity.



Using Doubles

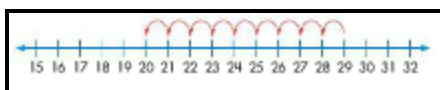
Students may use a doubles fact they know and then add on the remaining amount.

$8 + 9 = \underline{\quad}$

I know that $8 + 8 = 16$. 9 is 1 more than 8, so $8 + 9 = 17$.

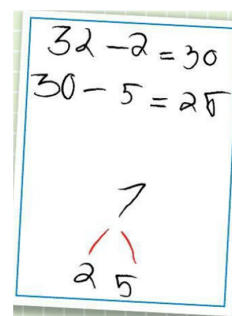
Counting Back

Students count back to solve subtraction problems. They may count back in their head, on their fingers, or on the 100 chart or number line. $29 - 9 = ?$



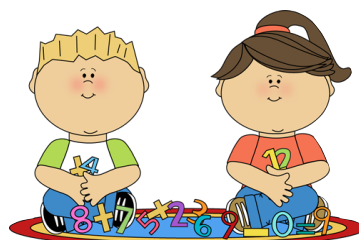
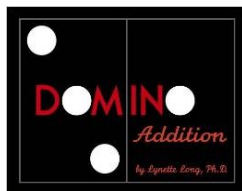
Subtracting in Parts

Students subtract the 7 in parts, first subtracting 2 to get 30, and then subtracting 5 to get 25. $32 - 7 = ?$



Helping Your Child at Home

- 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 by 2's, 5's, and 10's with your child while doing various activities like driving in the car, jumping rope, waiting in line at a store, etc.
- Practice counting coins at home identifying the names and values.
- Put different items into groups and talk about which group has more or less items using the terms greater than and less than.
- Read books about counting and money.



Visit These Websites for Interactive Math Activities

- Learning Coins (http://www.abcya.com/learning_coins.htm)

Students learn about and sort coins.

- Investigations (http://investigations.terc.edu/library/Games_23.cfm)

Students can explore a variety of games leveled for 2-3 students focusing on numbers, addition and subtraction, place value, money, and other mathematical topics.

- Soft Schools (<http://www.softschools.com/math/games>)

Students can explore a variety of games at varying levels of difficulty focusing on addition and subtraction.

- Money Bingo (http://www.abcya.com/money_bingo.htm)

Students add money amounts with coins.

- Primary Games (<http://www.primarygames.com/math/mathlines>)

Students can earn points by finding multiple combinations of ten.

- Save the Whale (http://www.ictgames.com/save_the_whale_v4.html)

Students find missing numbers to make ten.

