

Unit 2 – Becoming Fluent with Addition and Subtraction

Georgia Math

Grade 2

Overview

In this unit, students will:

- ❖ Understand the relationship between addition and subtraction
- ❖ Learn and use the many different words for addition and subtraction (join, take away, etc)
- ❖ Use place value to help add and subtract
- ❖ Solve problems adding and subtracting money
- ❖ Improve automatic recall of addition and subtraction facts 0-20 – (knowing facts like $6+3$ quickly without counting on fingers or charts)

Key Common Core Standards

- Represent and solve problems involving addition and subtraction using drawings and equations with a symbol for the unknown number to represent the problem.
- Quickly and smoothly add and subtract within 20. By end of Grade 2, students must know from memory all sums of two one-digit numbers.
- Use place value understanding and properties of operations to add and subtract. Also, students will learn the relationship between addition and subtraction.

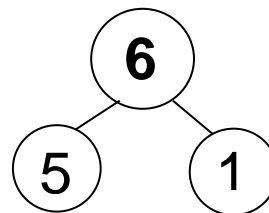
Vocabulary

Students will be using the following words in this unit:

- **Sum:** The total when numbers are added
- **Difference:** The total when numbers are subtracted
- **Doubles:** additions facts with two numbers that are the same, like $4+4 = 8$
- **Equation:** a number sentence with an equal sign. Ex. $17-9 = 8$
- **Estimate:** a number close to the exact amount
- **Fluently:** to solve problems quickly using mental math instead of counting on fingers or charts
- **Strategy:** a plan or way to solve a problem
- **Counting Up:** a way to subtract by starting at the smaller number and counting up to the larger number.

Number Bonds

This is an example of a number bond.



We can see that $5 + 1 = 6$ and $1 + 5 = 6$. It also shows $6 - 1 = 5$ and $6 - 5 = 1$.

Fluency Matters

Knowing basic number facts is an important skill for students. Research shows that it is 1 of the 5 most important parts of being a strong math student. Solving longer and more challenging math problems is only possible when students have a strong understanding of number facts. Everyday tasks such as telling time, measuring, shopping and handling money require being fluent with number facts. It is also helpful for estimation and helping students to know if their answers make sense. Knowing these facts helps students to think about higher level math skills.

Daily practice at school and at home will help students with fact fluency. By the end of Grade 2, students must know from memory all sums of two one-digit numbers. Throughout the year, your child will be working on learning strategies to help strengthen fact fluency. Fact fluency improves as students develop a stronger number sense. This means they can use numbers in many different ways. They see patterns in numbers, they see how numbers can be broken apart into different combinations of smaller numbers (see number bonds), and that numbers have different values in different places (when 2 is in the tens place it is worth 20, when put in the hundreds place it is worth 200).

Often we think of learning math facts using flashcards and timed tests. These activities can cause students to become anxious or frustrated about learning math. It has also been shown that students who memorize these facts often struggle with solving more complex problems because they lack an understanding of how they are getting an answer. You cannot memorize the answer to every math problem, so instead it is better to understand how numbers work and be able to use those strategies to solve many different kinds of math problems.

How You Can Help At Home

Math games or puzzles are a great way for students to build fact fluency and have fun! Give some of these a try:

- Give your child a math problem to solve in their head. Have them explain how they got their answer. Encourage them to use a strategy such as making ten, subtracting from ten, or ten plus.
- Play "How Many Are Hiding?"- You will need 10-20 objects and a cup. One player looks away while the other hides some of the objects under the cup. The other player must figure out (without looking) how many objects are hidden under the cup.
- Use a set of index cards. Write numbers on some of the cards. Then help your child to think of 3 other ways to show that number (words, dots, addition problem, subtraction problem, place value blocks, etc.). Now turn all the cards upside down and play a game of memory. When someone chooses 2 cards that match, they get to keep them. The player with the most matches is the winner.

Addition and Subtraction Strategies

Make ten

Add numbers together to make 10 first.

$$8 + 3 = 8 + 2 + 1$$

Add the 8 and 2 first to make 10. Then add 1.

Subtract from ten

$$15 - 7 = \underline{\quad}$$

$$10 - 7 + 5 = 3 + 5$$

Fifteen is $10 + 5$. Subtract 7 from 10 first. Then add the 5 back.

Ten plus

This strategy helps students add fluently.

$$10 + 3 = 13$$

$$30 + 5 = 35$$

$$70 + 8 = 78$$