InsightMath California

Adding and Subtracting Within 10

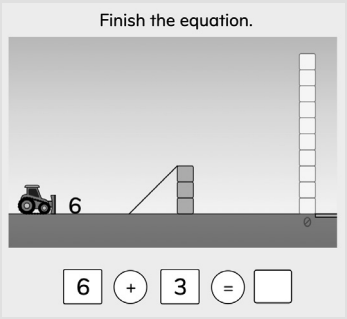
Family Guide | Grade 1 | Unit 1

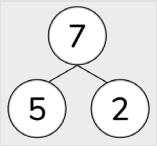
Your student is exploring how addition and subtraction are the mathematics of parts and totals.

Key Math Ideas

The beginning of the unit focuses on active addition and subtraction which asks students to answer questions about how the quantity changes because of an action, such as 3 more blocks being added to a stack. Students act out or use objects to model the addition or subtraction situation. They write equations to represent the actions of adding or subtracting, and they solve using strategies such as counting on and counting back.

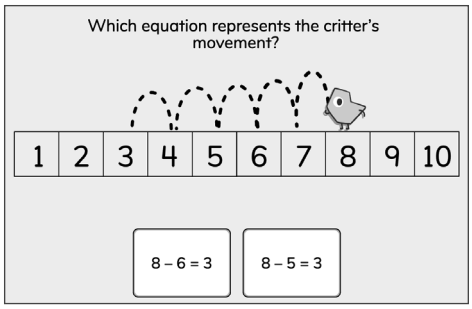
Students extend their addition and subtraction understanding to explore how totals can be split into parts without changing the whole amount. They begin to use number bonds to show the part–part–total relationship. For example, the number bond to the right could show that there are 5 red shirts and 2 green shirts and that there are 7 shirts in total.





→ In the first half of the unit, your student will learn to

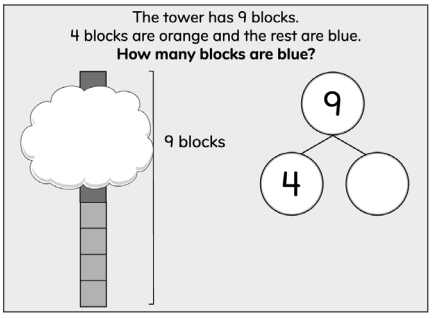
- count on to add numbers up to 20;
- count back to subtract numbers;
- model and solve addition and subtraction problems by acting them out, modeling with objects, and using number paths;
- write equations to describe the action of adding and subtracting;
- explain that addition and subtraction are opposite actions, such as 6 + 3 – 3 equals 6 because adding 3 and subtracting 3 are opposite actions.



Subtracting by counting back on a number path

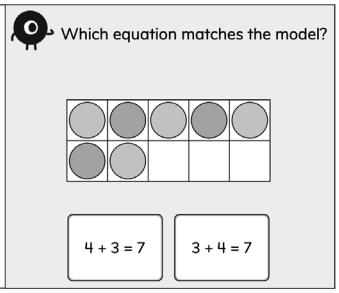
→ In the second half of the unit, your student will learn to

- identify the parts and total in part–part–total situations;
- use objects, number bonds, and equations to model and solve problems where the unknown is the total, one part or both parts using numbers within 10;
- describe that, in addition, the numbers can be added in any order and the total will stay the same;
- write addition and subtraction equations to represent the same situation presented visually in which one part is unknown, as shown in the blocks problem to the right.



Helpful Hint

In this unit, students explore how numbers can be added in any order and the total will remain the same. In later units students use this understanding to add more efficiently, such as counting on from the larger addend even if it is not the first addend. It will also support students' understanding in later grades and eventually extend to multiplication.



Tips for Supporting Your Student at Home

Questions to Ask Your Student

→ In the first half of the unit:

- How did you know how many objects without counting them one by one?
- How did you know what numbers to add?
- How did you know what numbers to subtract?
- What strategy helped you solve the problem?

→ In the second half of the unit:

- How can you write an addition equation and a subtraction equation for the situation?
- What is the total in the situation? What are the parts?
- How can you use a number bond to show the relationship of the number in the problem?

If...	Try...
your student gets confused when they see an equation with one part unknown and interpret the total as a part, such as thinking 3 + __ = 8 means 3 + 8 = __ ...	asking your student to explain what is happening to prompt a response like "A number is added to 3, and you end up with 8." You can also ask your student to draw a number bond to show the part–part–total relationship, pointing out what is unknown.

Student Strengths Spotlight

We learn from our mistakes.

Students may make mistakes, especially when working on part–part–total problems, and that is okay! All experiences help them to learn.

We model our thinking.

Students model addition and subtraction problems by acting them out or using objects. Modeling with objects help students to make sense of the problem. Eventually this helps students model with math drawings and then work with numbers only.

Try This Together!

- **Daily Activity Connections.** During daily activities with your student, such as making lunch or doing the dishes, practice counting on and back starting at how many of an item you have to represent situations. For example, if you have 9 bananas and use 3 bananas, count back to figure out how many are left.
- **Fruit Fun!** Using your student's two favorite types of fruit, ask your student to find all the different combinations of that make a total of 5 pieces of fruit. For example, 1 strawberry and 4 blueberries equal 5 total pieces of fruit, or 2 strawberries and 3 blueberries equal 5 total pieces of fruit. Try it with different totals between 6 and 10. As an added challenge, ask your student to represent the situation with an equation or number bond.
- **Take a Walk!** Take a walk with your student, and while you are walking, pose different part–part–total problems for them to solve. For example, say, "I see 10 flowers; 4 are pink and the rest are blue. How many blue flowers do I see?" Encourage your student can ask you part–part–total questions to answer as well.