InsightMath Texas

Building Approaches to Problem Solving

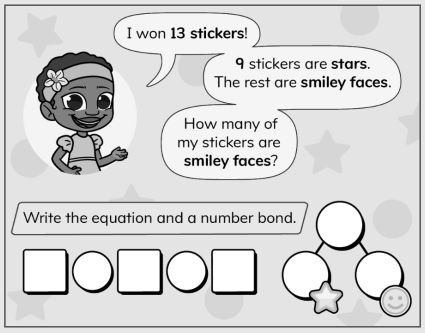
Family Guide | Grade 1 | Unit 2

Your student is exploring how addition and subtraction can help to describe and solve word problems.

Key Math Ideas

In this unit, students represent and solve addition and subtraction word problems with numbers up to 10. A number bond helps show the relationship between numbers in a problem, and it is often used to understand part–part–total relationships, such as in the problem "There are 5 red shirts and 6 green shirts, so how many shirts are there altogether?"

A number bond can also be used to understand active addition or subtraction situations, such as in this problem: "There were 4 birds on the wire, and 5 more birds came. How many birds are on the wire now?" Thinking about whether the given information is a part or the total can help students make sense of the situation and make a plan to solve.



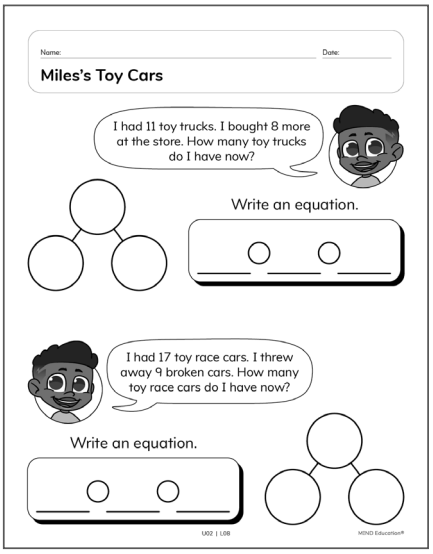
In this problem, the number bond helps students recognize that they know the total and one part.

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

- create models and write equations for part–part–total situations;
- write both addition and subtraction equations to represent the same situation;
- create addition and subtraction word problems to match models and equations.

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

- use number bonds to represent addition and subtraction word problems and write matching equations;
- create active addition or subtraction word problems to match a given visual or equation;
- choose efficient addition and subtraction strategies such as counting on from the greater number or using doubles facts.



Helpful Hint

Sometimes students look for keywords such as "in all" or "how many" in word problems, but these can lead to misconceptions. When supporting your students to solve word problems, avoid asking your student to look for keywords. For example, "how many" can mean "How many more?," which means students need to subtract, or "How many does someone have?" which means students need to add. Instead, support your student's understanding of the word problem by asking them to act out or draw the situation, which helps them understand the bigger picture of the problem. The priority is for students to make sense of a problem holistically so they can be flexible mathematical thinkers.

Tips for Supporting Your Student at Home

Questions to Ask Your Student

→ At the beginning of the unit:

- What can you draw (or show) to help you understand the problem?
- What are the parts? What is the total?
- What do you know? What is unknown?
- Can you write an addition and subtraction equation? Why?
- How can you make a number bond to help you represent the problem?

→ Later in the unit:

- How can you use a number bond to help you understand the problem?
- What equation can you write to represent the word problem?
- What strategy will help you solve the problem most easily? Why?

If...	Try...
your student is struggling to identify the part–part–total relationship in a problem...	acting out the situation with them using physical objects you have at home, such as coins, blocks, or beans. For example, use two different color blocks to represent the two parts in the problem.

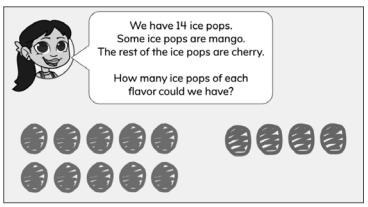
Student Strengths Spotlight

We try our best. When building approaches to problem solving, students do their best even when a problem is difficult.

We make a plan. Students choose and justify strategies for solving problems based on the type of problem.

Try This Together!

- **Problem Solving in Daily Life.** Use household items to create opportunities for problem solving in daily life. For example, when cooking, tell your student that the egg carton has space for 12 eggs and point out how many eggs are left. Ask them to identify how many eggs have been used already.
- **Play a Game!** Choose a set of items you have at home, such as blocks, beans, or stickers. Place between 4 and 10 of the items on a table and ask your student to count the number of items. Then, hide some of the items under a piece of paper or behind your back and ask your student to figure out the number of hidden items. Discuss how the part–part–total relationship helped you figure out the hidden number of items. Switch roles, with your student now hiding the items.
- **Thinking Flexibly.** Make addition and subtraction connections while doing tasks around the house that give your student a total, and ask them to determine the possible parts. For example, provide your student with two types of stickers, like dinosaurs and hearts. Ask them to collect 8 stickers total using both types. How many combinations can make 8? Your student may show 4 dinosaur stickers and 4 heart stickers, or 3 dinosaurs stickers and 5 heart stickers.



- **Shopping Math.** While out shopping, help your student create or solve a math problem using simple amounts. For example, you had $9 to start with and bought an item. Now you have $5. How much was the item you bought?