

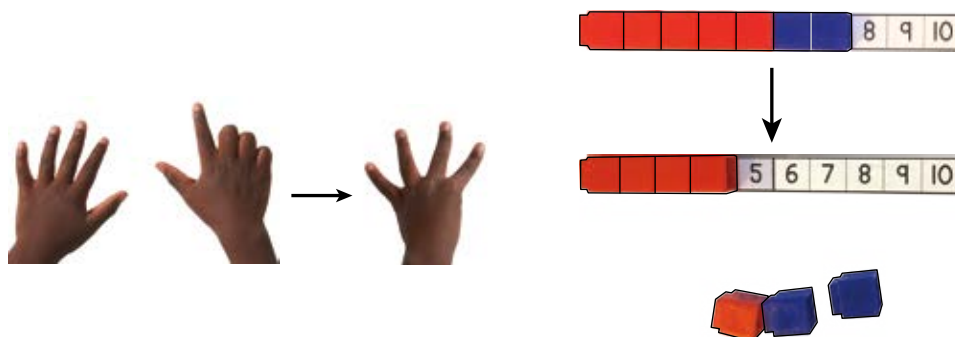
FAMILY MATH

Make Sense of Problems

Dear Family,

Students develop the ability to make sense of addition and subtraction by focusing on questions such as, *What is happening in the story?* and *How can I solve this problem?* instead of focusing on keywords (e.g., *plus*, *altogether*), which can lead to errors as problems increase in complexity. Students make sense of problems by acting out or modeling actions with tools. Modeling helps students determine whether to write an addition or subtraction sentence.

Students are given a choice of tools such as cubes, hands, number paths, drawings, or 10-frames to solve problems.



Students can change course at any time by opting to use a different tool. As students learn to solve story problems, they begin to recognize which tools they personally prefer, and which tools work best for different problems.

At-Home Activities

Activity Idea 1 Plus or Minus?

Invite your student to play a game called Plus or Minus. Students listen to a story and decide if they would write an addition or subtraction sentence to match the story. Prompt your child to say “plus” if they would write an addition sentence to match the story or “minus” if they would write a subtraction sentence to match it. Try a story such as the following: 3 birds are eating worms. 5 more birds come to eat worms. Is this plus or minus?

Activity Idea 2 Number Path Game

For this partner game, gather a die and two small household items, such as a penny and a button. Using the number path provided, the goal is to get both items to the number 8. Partner A rolls the die and places their item on the number they roll. Partner B rolls the die and places their item on the number they roll. Partners take turns rolling the die and moving their item the number of spaces that matches the roll. They may move their game piece forward or backward. Play continues until one partner lands on 8. Once you have finished the round, play again with a new target number. If a player is on 5 and rolls a 6, they should roll again.

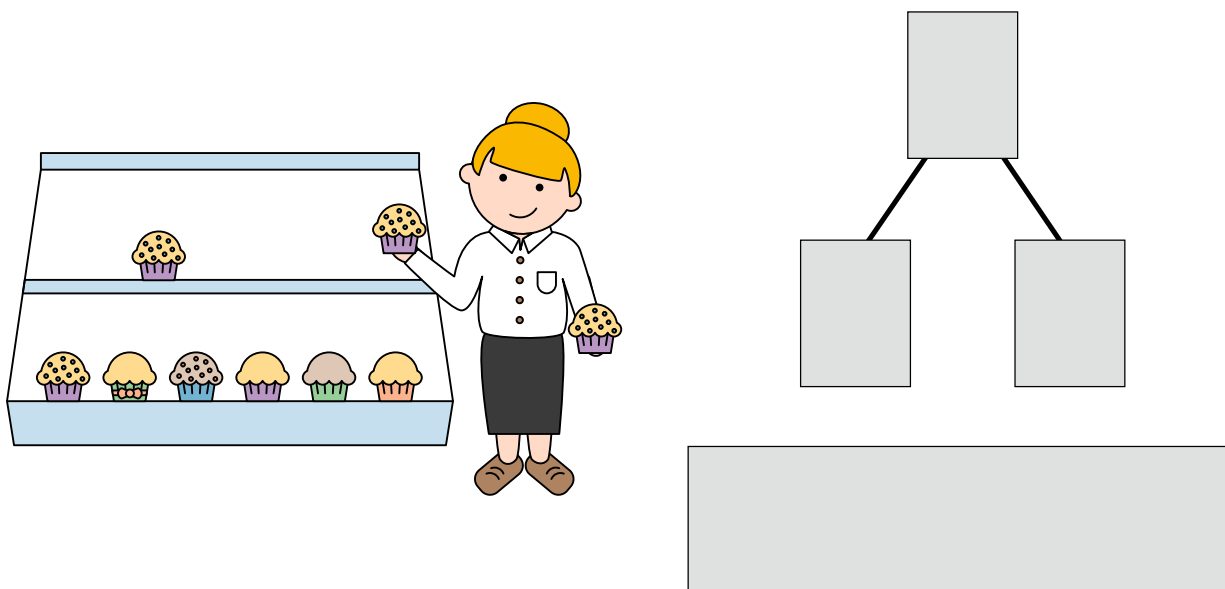
Making Sense of Problems

Students are beginning to solidify their understanding of when and why to use addition or subtraction. They focus on the action of joining or separating within the story to determine the operation.

When solving a story problem, students

- draw or use tools to represent the story,
- write a number sentence to match the story, and
- explain why they used a plus sign or a minus sign.

In the sample below, students could tell an addition or subtraction story based on the image.



The operation is not named in the story problems (e.g., “addition word problem”) to allow for flexible solving. Students will discover the relationship between addition and subtraction and how one can be used to solve the other. It also allows students to see the reversibility of addition and subtraction, such as in the following story: “There were 5 bunnies and 2 more came along. Now there are 7 bunnies. Later, 2 of them ran away. Now there are 5 once again.”

$$5 + 2 = 7 \text{ and } 7 - 2 = 5$$

Both problems have the same parts and total. Students see that one operation undoes the other.

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----