Unit 4 Family Support Materials

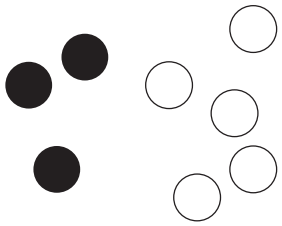
Understanding Addition and Subtraction

In this unit, students relate counting to addition to solve addition and subtraction story problems within 10.

Section A: Count to Add and Subtract

In this section, students are introduced to addition as the counting of the total number of objects in two (2) groups. They are introduced to subtraction as taking away a number of objects from a group and counting the number of remaining objects. The language “add,” “put together,” “subtract,” and “take away” is used throughout the section.

Students also count images in scattered configurations for the first time, recognizing the need to keep track of the images that they have counted. For example, students may count all the black dots first and then the white dots, or they may count the black dots and white dots together.



As they count, students may cross off the dots to keep track of those they have counted. Students see that although they may count the images in a different order, they arrive at the same total.

Section B: Representing and Solving Story Problems

In this section, students represent and solve story problems. This work starts slowly, with students acting out and then representing story problems that don't include a question, such as:

There are 5 students jumping rope at recess. 2 more students come out to play with them.

Questionless story problems encourage students to think about the context and the action in the problem, without feeling pressured or rushed to solve it. Eventually, students answer questions about stories, such as "How many students are jumping rope now?".

Students represent story problems, with objects,

math tools, drawings, and numbers. They may represent each story problem in any way that makes sense to them. The important thing is for students to be able to explain how their representation connects to the story. While students are not required to draw in a particular way, they notice that organized drawings make it easier to see how a drawing matches a story problem. For example, students may use any of these diagrams to represent a story that matches the expression $5 + 2$.

Section C: Addition and Subtraction Expressions

In this section, students work with expressions for the first time. They match expressions to story problems and drawings. Students explain why an expression matches a given problem or drawing.

Students move from working with expressions in relation to story problems to finding the values for expressions without a story. Students may add or subtract in any way that makes sense to them,

including using fingers, objects, or drawings. With repeated experience, students begin to notice patterns when adding and subtracting, such as that adding 1 results in the next counting number and that adding 0 results in the same number.

Try it at home!

Near the end of the unit, ask your kindergartener to draw a picture that goes with each story:

4 students are jumping rope at recess. 2 more students come out to play with them.
There are 6 birds in a tree. 2 fly away.

Questions that may be helpful as they work:

- Explain each picture to me.
- How many students are jumping rope at the end of the first story?
- How many birds are in the tree at the end of the second story?
- Choose an expression that matches each story: $6 + 2$, $4 + 2$, $6 - 2$, or $4 - 2$. How do you know?

Solution:
Answers may vary.

- A picture of 4 students jumping rope, with 2 more students waiting to jump in.
- A picture of 6 birds in a tree, with 2 birds crossed out.

Sample response:

- There are 6 students jumping rope.
- There are 4 birds left in the tree.
- $4 + 2$ matches the first story. I know this because first there are 4 students, and then 2 more come. $4 + 2 = 6$
- $6 - 2$ matches the second story. I know this because there are 6 birds, and then 2 fly away. $6 - 2 = 4$