

Grade K: Fly Away

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K.OA.A.2 - Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

Instructions

Instruct students to solve the problem and shade in the correct answer. You may also read the question aloud to students, if you prefer. Ask students to explain their answer. This could be done in partners, small groups, or with the full class.

5  on the grass.

2  flew away.

How many  now?

0

1

2

3

4

5

6

7

8

9

Solution

Correct if student shades in the number 3.

There were 5 birds on the grass, and two birds flew away, so now there are 3 birds left ($5 - 2 = 3$).

One way to calculate the answer is simply to know—thanks to experiences during the school year—that $5 - 2 = 3$.

Alternatively, some students might use fingers to solve the problem, like so:

- First, hold up 5 fingers (the 5 birds on the grass).
- To show the 2 birds that fly away, fold down 2 fingers—if this is too uncomfortable for little hands, hide 2 fingers by encircling them with the other hand.
- Now wiggle the fingers that show the remaining birds. How many are there?

Some students might solve the problem by drawing circles or other marks that stand for the five birds. To represent the birds flying away, the student can cross out three of the circles, then solve the problem by counting the circles that remain as “1, 2, 3.”

If a student solves the problem by counting fingers or circles as “1, 2, 3,” be sure not to accept “1, 2, 3” as the final answer. Ask the student: “How many birds are left?” The student can then give the final answer, “3.”

If a student answered the problem incorrectly, ask how they solved the problem. It’s possible they selected the wrong number by mistake, or had a hard time understanding the situation. You could try setting up the problem at a desk or table using pennies for the birds. Place a group of five pennies on the table (“birds on the grass”). Slide two pennies some distance away (“two birds flew away”). Then ask the student to tell how many birds are left on the grass.

When you slide the two pennies away, you are acting out the central subtraction idea in the problem.

If a student is having a hard time finding the value of $5 - 2$, use pennies to show the number 5 as being made of two parts: a group of 3 and a group of 2. If the group of 2 is taken away, the group of 3 remains. (This also explains why $5 - 3 = 2$.)

Elaboration on Alignment

The meanings of subtraction are inverse to the meanings of addition. There are two basic meanings or uses of subtraction: one is about separating collections, and the other is about taking away from a collection. (One meaning is atemporal; the other is temporal.) This problem involves the taking-from sense of subtraction.

(Subtraction finds the size of one part when the size of the other part is known, and subtraction also finds the size of the part that remains when a part is removed. The difference between separating and taking away is often a matter of perspective.)

Subtraction is generally harder than addition, and not many students will “just know” that $5 - 2 = 3$.

The problem does not include a cartoon showing the birds on the grass and in the act of flying away. In the Kindergarten curriculum for subtraction, many problems of this type would include such a cartoon. However, to include such a cartoon here would take away the student’s initiative to represent the problem by using fingers or drawing a model of the situation.

The minuend is chosen as 5 to allow for a strategy of using fingers. Linguistically, “bird” was chosen as an easy vocabulary word. In terms of the situation, it is natural for a bird to be on the grass and also natural for a bird to fly away.

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Name: _____

5  on the grass.

2  flew away.

How many  now?

0 1 2 3 4

5 6 7 8 9