## Lesson 16

Objective: Solve addition story problems using fingers.

## Suggested Lesson Structure

| $\square$ | Fluency Practice |
| :--- | :--- |
| Application Problem | (3 minutes) |
| Concept Development | (13 minutes) |
| Ctudent Debrief | (3 minutes) |
| Stal Time | (25 minutes) |



## Fluency Practice (6 minutes)

- Counting Pennies PK.CC. 4 (3 minutes)
- Birds of a Feather PK.CC. 1 (3 minutes)


## Counting Pennies (3 minutes)

Materials: (S) cup or baggie of 8 pennies, work mat (construction paper)
Note: This fluency activity provides practice with organizing and counting up to 10 objects in linear and array configurations. (If time permits, tell students to make one object disappear by placing it under their chair and repeat the activity.)

Give one cup to each student.
T: Empty your cup onto your work mat. Put your pennies in a straight line and count them. (Pause.) How many pennies? Show me on your fingers.
S: (Show 8 on fingers.)
T : Count them again from the other direction. (Pause.) How many? Show me.
S : (Show 8 on fingers.)
T: Now, put your pennies in two rows that are exactly the same and count them. (Pause.)
S: (Make two rows with four pennies in each row.) How many? Show me.

## NOTES ON <br> MULTIPLE MEANS <br> OF ENGAGEMENT:

As you assess students' counting strategies, ensure success by scaffolding for students who may be having difficulty. Limit the number of objects in the cup until students can accurately count. Add one object at a time after students have experienced success with counting in both linear and array configurations.

S: (Show 8 on fingers.)
T: Put your pennies in a straight line again and count them. (Pause.) How many? Show me.
S: (Show 8 on fingers.)

## Birds of a Feather ( 3 minutes)

Note: This activity targets one of the core fluencies for Pre-K students, rote counting to 20. Varying the speed and context help to keep counting exciting.

T: Let's all pretend we're huge bald eagles soaring through the sky. Flap your arms with me as we count to 20 the Say Ten Way. When we get to 20, let's sit down in our nests.
$\mathrm{T} / \mathrm{S}: 1,2,3 \ldots$...ten 8 , ten 9,2 tens. (Slowly raise and lower arms to mimic an eagle gliding. Sit down.)
T: Good job. I had fun soaring through the sky. Now, let's be baby hummingbirds and fly to a flower to sip sweet nectar. This time flap your wings faster, like a hummingbird. Watch me! (Flap hands next to your body as if they are a baby bird's wings).
T: Are you ready? Let's fly and count to 20 the regular way.
$\mathrm{T} / \mathrm{S}: 1,2,3 \ldots 18,19,20$. (Flap hands at a relatively quick pace but slowly enough to keep movement synchronous with the count.)

## Application Problem (3 minutes)

Materials: (S) 5 pennies per pair
Give one student in each pair five pennies. Instruct the student to count his/her pennies. Then say, "Give some of your pennies to your partner. Each of you count your pennies." Have children tell about how many each partner has, e.g., "I have one penny and my partner has four pennies."

Say, "Combine your pennies and count them." Encourage students to make an addition statement, such as " 2 and 3 makes 5."


Note: Students practice decompositions of 5, which supports their understanding of addition and subtraction stories. If time permits, write the equation to match their addition statements and discuss what is the same about all of the number sentences.

## Concept Development (13 minutes)

## Part 1: Concept Introduction

Materials: (T) 2 paper lunch bags or lunch boxes, 5 small fruits of 2 varieties (e.g., oranges and kiwi)
Prepare one lunch bag/box with three pieces of fruit and the other with one piece of a different fruit. Reuse lunch bags/boxes for each round of the game.

1. Say, "Here are two mystery bags. Let's have two volunteers come forward to peek inside the bags." Without modeling for them, invite each student to count the pieces of fruit in the bag and show how many using fingers.
2. Say, "Jeremiah brought three pieces of fruit for lunch. Show me three fingers on this hand. (Shake right hand.) Priti brought one piece of fruit. Show me one finger on your other hand. (Shake left hand.) How many pieces of fruit do they have all together?"
3. Have students say the answer as they show it with their fingers, "They have four pieces of fruit." Take the fruit out of the bag and confirm that there are four pieces. Write the number sentence as students say it, "3 plus 1 equals 4."
4. Change the bags to have one and two pieces of fruit, and have two new volunteers come up, peek to see what's inside, and show it on their fingers. Say, "Use two hands to show our friends' fruit."
5. Ask, "What question could we ask about their fruit?"

MP. 5 6. Have volunteers confirm the amount of fruit. As before, students state the number sentence as it is written on the board.
7. Play additional rounds of the mystery game as time allows.

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## Part 2: Practice

Materials: (S) per trio: 2 paper lunch bags with 1-4 small objects in each (e.g., pennies, counters, plastic kitchen food)

Create sets of bags in advance, making sure that the total number of objects between the two bags does not exceed 5. Place bag sets in trays or mark to show which bags go together, e.g., use color and shape to match. Place bags in an accessible location so children can exchange easily.

1. Place children in groups of three. They will continue to play the mystery bag game with two children holding the bags and one child showing the total on two hands.
2. Encourage the two children holding the bags to ask the question for the other child to answer, e.g., "How many pennies are there all together?"
3. The holders take the objects out of the bag to confirm the total. All three students say the number sentence together, e.g., "3 plus 2 equals 5."
4. After each round, children select a new set of bags and change roles. Be sure to have at least three rounds of play so that each child has a chance to show the total.

## CENTER CONNECTION:

Place lunch bags with numbers 1-3 written on the outside. Have plastic food from the kitchen in a large basket. Instruct children to make lunches with the indicated number of items in each bag. Once the bags are filled, encourage students to pick two bags to add together. Listen for students saying, for example, " 1 roll and 2 apples are 3 things. 1 plus 2 equals 3 ." Also note children who use their fingers to help them add. Seeing that one finger represents one food item is a foundational understanding for solving word problems.

## Student Debrief (3 minutes)

Lesson Objective: Solve addition story problems using fingers.
The Student Debrief is intended to invite reflection and active processing of the total lesson experience. It is also an opportunity for informal assessment. Consider taking anecdotal notes or using a simple checklist to note each child's progress toward meeting the lesson objective.

As students complete the Practice portion of the Concept Development, listen for misconceptions or misunderstandings that can be addressed in the Debrief.

You may choose to use any combination of the questions below to help students express ideas, make connections, and use new vocabulary.

- (Have Jeremiah and Priti repeat their show of fingers.) What do Jeremiah's fingers tell us? What do Priti's fingers tell us?
- How did you use your fingers to find out how many pieces of fruit there were in all?
- When you played the group mystery bag game, what did you show with your fingers?
- Use your fingers to show my addition story: There were 2 balls in a bag. Three more balls were put in the bag. (Pause.) How many balls are in the bag in all? Which fingers show the balls that were already there? Which fingers show the balls that were added to the bag?

