Lesson 34

Objective: Count 10 objects in array configurations.

Suggested Lesson Structure

- Fluency Practice (6 minutes)
- Application Problem (3 minutes)
- Concept Development (13 minutes)
- Student Debrief (3 minutes)

Total Time (25 minutes)

Fluency Practice (6 minutes)

- Change of Pace Counting from 0 to 10 PK.CC.1 (2 minutes)
- Compose a Tower of 10 PK.CC.3.c (4 minutes)

Change of Pace Counting from 0 to 10 (2 minutes)

Materials: (T) 10 small paper plates, 10 forks

Note: By using a change of pace, students also learn to pay attention to the precision of the touch and the count.

T: (Place the 10 plates as if at a rectangular table.) Who remembers how many plates we set yesterday?
S: Not me! → 10.
T: How many forks are already on the table?
S: 0.
T: Let’s count a fork for each plate so the guests can eat birthday cake!
S: 1, ... 2, ... 3, ... 4, ... 5, ... 6, ... 7, ... 8, ... 9, ... 10.

As in Lesson 33, use a change of pace starting with zero, while counting out the forks for each plate. Don’t let students count ahead of the placement of each fork. Keep it playful and fun!
Compose a Tower of 10 (4 minutes)

Materials: (S) 10 loose cubes in one color

Note: This adds a degree of complexity in that the cubes are all the same color, making it harder to count.

T: Use all your blocks to make 2 towers that are exactly the same. (Pause and observe.)
T: Put your 2 small towers together to make 1 tall tower. (Pause and observe.)
T: Break your tower again into 2 towers that are exactly the same. How many cubes are in 1 small tower? (Pause and observe counting strategies.)
T: Put your tower together again. Touch and count to find how many cubes there are in all. (Pause and observe counting strategies.)

Application Problem (3 minutes)

Materials: (S) Per pair: 1 paper, 1 purple and 1 green crayon

T: Partner A, draw 5 eggs in a line with your purple crayon.
T: Partner B, draw 5 eggs in a line with your green crayon.
T: Count all the eggs.
T: Turn your paper upside down. Count the eggs now!
T: Are there more eggs? Fewer eggs? The same number of eggs?

Note: This problem is designed for students to count 10 with a small taste of the commutative property, so that the total doesn’t change when the order of the groups is switched.

Concept Development (13 minutes)

Part 1: Concept Introduction

Materials: (T) 5 pairs of clean socks, dot cards 8–10 (Template 1)

1. Line up 5 socks without their partners, as shown on right. Say, “Last time I did the laundry, I had all these socks with no matches!” Have children count and tell how many socks have no match.
2. Show students the 5 matching socks in a pile. Say, “When I did the laundry this morning, I found more socks. Can you help me find their matches?” As children find matches, make sure pairs stay in an array configuration as shown on right.
3. Say, “Help me count my clean socks.” Point to each sock as children count to 10, moving from left to right, top to bottom. Reinforce that the last number said was the total by asking, “How many clean socks are there?”

4. Place the Dot Cards with the rows of 2 going vertically. Ask children to point to the card with 10 dots to match the socks. As necessary, count the dots on each card. If students do not need to count, ask them to share how they knew which card had the same number of dots as socks.

5. Mix up the Dot Cards, and place them with the rows of 5 going horizontally. Repeat the process in Step 4.

6. Consider saying, “Hey, changing the position of the Dot Card didn’t change the number of dots, like when we turned the nest upside down, the number of eggs stayed the same!”

Part 2: Practice

Materials: (S) Per pair: 10 linking cubes from Fluency, animal array cards (Template 2)

Keep students in a circle for easy passing of cards. Pair students, and give each pair 10 linking cubes and an Animal Array Card.

1. Say, “We are going to be zookeepers again. Pretend these cubes are food.”

2. Have Partner A count the animals on the card and tell Partner B how many pieces of food are needed.

3. Tell Partner B, “Each animal on your card gets 1 piece of food. Count the food as you give each animal 1 piece.” Support students to count accurately as they match each piece of food to an animal.

4. Have partners switch roles. Have each pair pass their card to the right and repeat. Consider supplementing early finishers with extra cards since the time students use to count may vary considerably.

Student Debrief (3 minutes)

Lesson Objective: Count 10 objects in array configurations.

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 Student Debrief.
Any combination of the questions below may be used to help students express ideas, make connections, and use new vocabulary.

- (Show Animal Array Cards with 8, 9, and 10 animals.) What is different about all of these cards? (Help children consider the total number of animals, the number of rows/columns, and the number of animals in each row/column.)

- (Show the elephant card with only 9 linking cubes.) How many more pieces of food do I need? How do you know? How many pieces of food should be in each row? (Point so that students are clear as to what is being called a row.)

- (Show the elephant card and the 5-group formations for 8-10.) Which of these dot cards matches our elephants? How do we know that?

**CENTER CONNECTION:**

Have children take 5 pairs of socks from the Concept Development and build or draw an imaginary animal with 5 legs on one side of its body and 5 legs on the other. Have them place the socks on each leg and count to 10. Note the difference in asking for 5 legs on each side of the body (count out 5 twice) and for 10 legs total (count out 10). Children learn to create a group of 10 from a larger set in Lesson 41.
Lesson 34: Count 10 objects in array configurations.

dot cards 8–10 (5-group formation)
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animal array cards