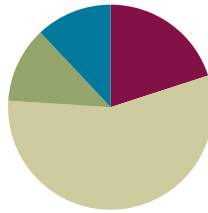


Lesson 7

Objective: Construct a rectangle and a square.

Suggested Lesson Structure

■ Fluency Practice	(5 minutes)
■ Application Problem	(3 minutes)
■ Concept Development	(14 minutes)
■ Student Debrief	(3 minutes)
Total Time	(25 minutes)



Fluency Practice (5 minutes)

- Make 4 Small Balls **PK.CC.3a** (5 minutes)

Make 4 Small Balls (5 minutes)

Materials: (S) Small ball of clay

Note: This fluency activity prepares materials for today's lesson to make rectangles with straws. An extra minute has been added to the time so that the entire sequence can be worked through, from two balls to three to four. An interesting question is, "Which balls are bigger, when we made two balls or when we made four balls?"

T: Show me your ball of clay!

S: (Do so.)

T: How many balls of clay do you have?

S: 1!

T: Use the whole piece of clay to make two smaller balls of clay that are about the same size.

S: (Do so.)

Repeat, making three and four balls. Have students put their four balls at the top of their desk to use during the lesson.

Application Problem (3 minutes)

Materials: (T) Cutouts of different shapes (including 1 rectangle or square for each child in the group; do not include any four-cornered shapes that are not rectangles, e.g., parallelogram or rhombus), music (optional)

Spread out the shapes in the middle of the circle so children can easily access them from all points.

Say, “Jose is having another party! Today, he wants everyone to bring a shape with four corners. Can you find a shape with exactly four corners?”

When children have found their rectangles, have them share the name of the shape with a partner. Consider playing music and having children dance to celebrate the rectangle party. Repeat more than once.

Note: This activity focuses children’s attention on the fact that rectangles have four corners, a fact they will use to construct rectangles in the Concept Development.

Concept Development (14 minutes)

Part 1: Concept Introduction

Materials: (T) Rectangle and square template on paper, 4 straws or stirrer sticks matching each template, 4 small balls of clay (from the fluency activity)

Note: This lesson involves making a rectangle with two pairs of same length sticks for the sides (exemplar rectangle) and a square, using four equal length sticks for the sides. A template for each will need to be created by the teacher to match the materials used.

1. Display rectangle template (two short sides, two long sides) on a flat surface. Ask students to identify the shape. Listen for the descriptions to include attributes: “It’s a rectangle because I see four corners!” “I see four sides!”
2. Hold up four straws that match the template. Count the four straws together, jumping once for each straw counted, “1, 2, 3, 4.”
3. Ask, “How can we use these four straws to build a rectangle?” Match each straw to the corresponding sides on the rectangle template.
4. Ask, “What can we do to hold the four sides of the rectangle together?” Guide students to see the four corners where the straws meet. Ask, “How many clay balls did we make today?”
5. Count the four clay balls, jumping once for each one counted. Guide students to say that the four clay balls can hold the four straws together at the four corners, making a rectangle.
6. Hold up the square template. “Rectangles have four sides and four corners. Is this a rectangle?” Count the sides and corners together, jumping once for each side and corner counted.
7. Say, “Yes! It’s a rectangle. It has four straight sides and four corners, but we can also call it a square because all sides are the same!”

Part 2: Practice

Materials: (S) Rectangle and square template on paper, 4 straws or stirrer sticks matching each template, 4 small balls of clay (from the fluency activity)

Note: Prepare student materials so that *half* the students have two pairs of the same length sides and *half* have equal length sides to build their rectangle or square.

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1. Send students to tables prepared with sides that match their template and clay balls. “It’s your turn to build a rectangle.”
2. “Let’s check to see if we have everything we need. If you have four sides, jump four times. If you have four corners, jump four times.”
3. Guide students to build rectangles on top of their templates. Circulate and provide assistance to those who are struggling. Encourage students to keep their constructions on the paper (not to lift them) so the corners stay square.
4. As they complete their rectangles, encourage students to count the sides and corners, “1, 2, 3, 4.”
5. When all the students are done building their rectangles, lead a gallery walk around the room to look at all the rectangles. “We made wonderful rectangles today! Some have sides that are different lengths and some have four sides that are all the same. We named these *squares*.”



NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

For students are ready for a challenge, give them all eight straws and both of the templates. Providing challenging extensions sustains effort and interest.

Student Debrief (3 minutes)

Lesson Objective: Construct a rectangle and a square.

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 towards 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.

- What tools did you use today to make rectangles? How many straws and clay balls did we need? (The number of straws and clay balls were the same!)
- Hold up an exemplar rectangle and a square. What is the same about these rectangles? What is different about these rectangles?
- What was the same about the triangle and the rectangle you made? (They both had straight sides and corners.)
- What was different about the triangle and the rectangle you made? (The rectangle had one more corner and side than a triangle.)
- (Arrange two long straws and one short straw without the template.) How many straws do I need to finish my rectangle?



CENTER CONNECTION:

Help students build shapes using their bodies in the block center (e.g., by lying on the floor or by holding hands and using arms as sides). After they have built the shapes with their bodies, challenge them to build the shapes with blocks. Children can make larger shapes by using more than one block to create a side.