

Ordinal Numbers (K.CC.4d)

Lesson 1

Objective: Describe the systematic construction of flat shapes using ordinal numbers.

Concept Development (25 minutes)

Materials: (S) 15 coffee stir sticks or similar material marked at the midpoint with permanent marker, scissors, small ball of clay, pencil, piece of construction paper, ruler

T: Listen to my directions. **First**, stand up. **Second**, put your hands on your shoulders. Go!

S: (Stand up and then put hands on their shoulders.)

T: What did I ask you to do first?

S: Stand up!

T: What was the second thing I asked you to do?

S: Put our hands on our shoulders.

T: Good! Please sit down. Listen to my directions. **First**, stand up. **Second**, put your hands on your shoulders.

Third, jump up and down! (Allow time for activity.)

Please sit down. What did I ask you to do first?

S: Stand up!

T: What was the second thing I asked you to do?

S: Put our hands on our shoulders.

T: And the third thing?

S: Jump up and down!

T: Good listening! Let's play one more time. Listen carefully! **First**, clap two times. **Second**, stomp three times. **Third**, shout "Hooray!" once. (Allow time for activity.) What did you do first?

S: Clapped two times!

T: Second?

S: We stomped three times!

T: Third?

S: We shouted "Hooray!"

T: You are going to be builders today. We are going to be making shapes. Look at the materials you have. What do you notice?

S: We have some sticks! → There is clay, too.

T: Pick up your sticks and arrange them on your desk. Try to make a shape. Who has an idea?

S: I used four sticks. I made a square.

T: How do you know it is a square?

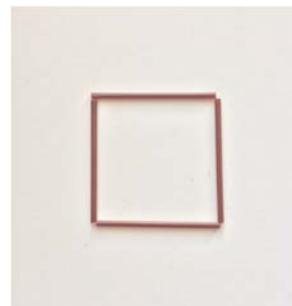


NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Scaffold below grade level students' understanding of ordinal numbers by modeling for them. Ask students to get up one at a time to demonstrate *first* in line, *second* in line, and *third* in line. Have students practice saying who is *first*, *second*, and *third* in line as you point to each corresponding student.



First

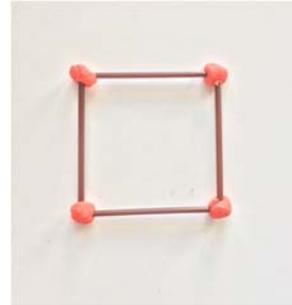


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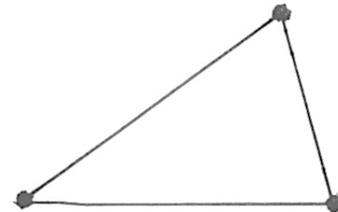
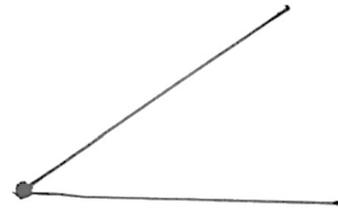
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- S: There are four sides, and they are all the same! → It has four corners. → It is closed.
- T: Did anyone think of something else?
- S: I only used three sticks. I made a triangle.
- S: There are three straight sides. → There are three corners, and they are all connected.
- T: We are going to practice more shape-making.
- First*, use your scissors to cut each of your sticks at the mark in the middle.
- Second*, arrange your little sticks to make different flat shapes.
- Third*, use bits of clay to connect the corners of your new shapes.

**Third**

- T: If you haven't made a square already, please do so now. Then, you may experiment. How many different shapes can you make? We will have a shape show when you are done. (Allow ample time for experimentation and construction.)
- T: Who would like to share one of their shapes? Tell us what you did first, second, and third. Use your math words!
- S: I made a triangle! First, I cut the sticks. Second, I picked three sticks for the sides. Third, I stuck them together with clay!
- S: I made a hexagon. First, I cut the sticks. Second, I chose six and put them on my desk. Third, I used balls of clay to connect them.
- T: Listen again. Get your pencil and construction paper ready. First, put a dot on the left side of your paper. Second, draw a line that starts at that dot with your ruler. Third, draw another line that starts at the same dot with your ruler.
- S: (Work.)
- T: Show me your work.
- S: (Show their work.)
- T: Listen again. First, put a dot at the ends of both your lines. Second, draw a line with your ruler to connect those dots. Third, show your work to a friend and tell him or her what shape you drew. (Allow time for sharing.)
- T: Now, share about *all* your shapes with your friends, the ones we made with straws *and* the one we made with your ruler.



Allow time for sharing and discussion. If students built shapes with five sides, or more than six sides, casually mention the name of the shape. Five sides is a pentagon. Seven sides is a heptagon. Eight sides is an octagon. Nine sides is a nonagon. Ten sides is a decagon.

- T: Listen carefully. First, put your name on your construction paper. Second, carefully lift your shapes onto your paper. Third, stand up and get ready to look at the shapes the rest of the class created! It's time for a shape show! (Allow students to circulate to view and discuss one another's work. Encourage mathematical discussion and precision in vocabulary. When they are done, move the papers carefully to a part of the room where they may be saved for use in Lesson 3 of this module.)

Student Debrief (8 minutes)

Lesson Objective: Describe the systematic construction of flat shapes using ordinal numbers.

- What words did we use to help us complete our Problem Set in order?
- What was the first thing we did in our Problem Set? Did everyone draw a line to complete the triangle first, before they colored their triangle green?
- Look at the triangles and squares you drew in your Problem Set. Are all the sides equal in length? Find someone who drew their shapes with equal length sides; find someone who drew their shapes with unequal length sides.
- How did the words **first**, **second**, and **third** help us be good builders today?
- Can you think of a time when order is important? What would happen if we put our shoes on first and our socks on second?
- Can you think of other ways that we use words like *first*, *second*, and *third*?

NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 1 Problem Set 6•6

Name Robin Date 5-24-13

Listen to the directions.

First, draw the missing line to finish the triangle using a ruler. **Second**, color the corners red. **Third**, draw another triangle.

First, use your ruler to draw 2 lines to make a square. **Second**, color the corners red. **Third**, draw another square.

First, draw a triangle using your ruler. **Second**, draw a different triangle using your ruler. **Third**, show your pictures to your partner.

COMMON CORE Lesson 1: Describe the systematic construction of flat shapes using ordinal numbers, 5/23/13 Date: engageNY 6.A.7

Lesson 3

Objective: Compose solids using flat shapes as a foundation.

Application Problem (5 minutes)

Materials: (S) Geoboard and rubber bands per pair (or dot paper, markers, ruler if geoboards are not available)

You have a challenge today! Work with your partner. On your geoboard, make a shape with three sides. Now leave your shape on your board and let your partner make a three-sided shape as well. Do they look the same? Name the shapes.

Now make a shape with four sides. Have your partner make another four-sided shape. Do they look alike? Name the shapes.

Try it with five sides! Then, six! How far can you and your partner go?

Note: Reviewing the construction of a variety of flat shapes will serve as the anticipatory set for extending a flat shape into a solid in today's lesson.



NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Below grade level students, as well as students with disabilities, will benefit from extra practice creating a variety of three- and four-sided shapes. Give them extended time with a geoboard, or make time for using interactive technology as that found at <http://www.mathlearningcenter.org/w eb-apps/geoboard/>.

Lesson 4

Objective: Describe the relative position of shapes using ordinal numbers.

Application Problem (5 minutes)

Materials: (S) Personal white boards

- First, draw 3 three-sided shapes on your board.
- Second, draw 4 four-sided shapes on your paper.
- Third, draw a number bond and write a number sentence to tell how many shapes you have in all.

Share your work with your partner. Do your shapes look the same? Do your number bonds look the same? How about your number sentences?

Note: Today's Application Problem serves as a link among the ordinal number discussions, shape constructions, number bonds, and number sentences. It serves as a review of some of the concepts from earlier modules as well as providing the anticipatory set for today's lesson.



NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Break the third step into smaller steps for students working below grade level. Ask, "How many three-sided shapes? How many four-sided shapes? How many altogether?" They can also work directly on a number bond template.

Concept Development (25 minutes)

Materials: (S) Shape template, scissors

T: How many shapes do you see on your paper? Raise your hand when you know. Call it out at my signal! (Wait until most hands are raised and then signal.)

S: 10!

T: Cut out your shapes on the dotted lines and put them on your desk. (Allow students time to cut.)

T: Make a row out of your shapes. Now, rearrange your shapes so that the first shape from the left is a circle. (If necessary, review left and right.) Make your second shape the smaller triangle. Keep your row straight! Now arrange it so that your third shape is a circle with a chunk missing. Share with your partner. What is the next shape in your row?

S: It is a heart. → Mine is a square. → Mine is a different triangle.

T: Student A, count your shapes starting from the left, stopping at the cross.

S: 1, 2, 3, 4.

T: You stopped at shape number 4. We would say that



NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Challenge students performing above grade level by giving them an opportunity to call out an arrangement of shapes using ordinal numbers. Explain what they are to do clearly, e.g., "call out different shapes by saying, for instance, first put your square on the table, put your triangle second in the row, etc.," and let them lead the game for the whole class on in small group.

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the heart is your fourth shape!

T: Tell your partner your fourth shape. Use the words, "My fourth shape is _____."

S: (Do so.)

T: Student B, what is the last shape in your row?

S: Mine is the big triangle.

T: Student B, count your shapes starting from the left and stopping at the big triangle.

S: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.

T: Tell your partner what your tenth shape is. Use the words, "My tenth shape is _____."

S: My tenth shape is the one that looks like the outside of a can. → My tenth shape is the heart.

T: Mix up all of your shapes again.

T: This time, we are going to make a column of your shapes. Our columns will all be the same, so listen carefully.

- Make the first shape, the one at the top of your column, a square.
- Second, the large triangle.
- Third, a cross.
- Fourth, a circle.
- Fifth, a heart.
- Sixth, the hexagon.
- Seventh, the circle with a chunk out of it.
- Eighth, the small triangle.
- Ninth, the diamond.
- Tenth, the one that looks like part of a can.

T: Start at the top of your column and count down 5 shapes. What is your fifth shape? Use the words, "My fifth shape is _____."

S: My fifth shape is a heart.

T: Count from the top and then put your finger on the last shape in your column. How many shapes did you count?

S: 10.

T: Yes, your finger is on your tenth shape. What is your tenth shape? Use your words.

S: My tenth shape is the one that looks like a can.



Continue practicing this way until students demonstrate an understanding of the relationship between the positions of the shapes and the resulting ordinal descriptions.

T: We are going to play Simon Says with your shapes. Simon says, make a row of shapes. Simon says, make your sixth shape a heart. Simon says, make your ninth shape a square. Simon says, make sure that your first shape is a triangle. Put your finger on the third shape.

S: You didn't say Simon Says!

Continue the game in this manner, monitoring accuracy and allowing students to gain fluency in identifying the ordinal positions in preparation for the Problem Set.

T: Turn to your partner and tell him about your column of shapes. Use your math words to describe the position of each shape in the line.

S: My first shape is a circle. My second shape is a heart. My third shape is a circle with a chunk missing. (Continue through to tenth.)

Circulate to observe the conversations and to encourage precision in the language.

Student Debrief (8 minutes)

Lesson Objective: Describe the relative position of shapes using ordinal numbers.

You may choose to use any combination of the questions below to lead the discussion.

- Tell your partner how you marked the second, fifth, and ninth truck. Did you start counting from the beginning each time or did you count on each time you were marking the next truck?
- Look at the next problem with the vehicles. Could you use the counting on strategy this time? Why or why not? (In the first problem the students were asked to mark the trucks in sequential order; in this next problem they are asked to mark the vehicles out of order.)
- What's different about the line of horses and the first two problems we did with the vehicles? (All the horses are exactly the same.) Did that make it easier or harder to find the one to mark?
- Today we talked about standing up *first* and then about putting a shape *first* in the row. How are those ideas similar? How are they different? Is it fair to use first in both of those sentences?

NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 4 Problem Set K-6

Name Adam Date 5-27-14

Circle the 2nd truck from the stop sign. Draw a square around the 5th truck. Draw an X on the 9th truck.

Draw a triangle around the 4th vehicle from the stop sign. Draw a circle around the 1st vehicle. Draw a square around the 6th vehicle.

Put an X on the 10th horse from the stop sign. Draw a triangle around the 7th horse. Draw a circle around the 3rd horse. Draw a square around the 8th horse.

COMMON CORE Lesson 4: Describe the relative positions of shapes using ordinal numbers. engage^{ny} E.A.6

NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 4 Problem Set K-6

Draw a line from the shape to the correct ordinal number starting at the top.

COMMON CORE Lesson 4: Describe the relative positions of shapes using ordinal numbers. engage^{ny} E.A.7

Lesson 5

Objective: Compose flat shapes using pattern blocks and drawings.

Fluency Practice (13 minutes)

Finish Line (4 minutes)

Materials: (T/S) Personal white board (turned to landscape orientation), 10 linking cubes

Note: This activity gives students practice in using ordinal numbers to describe relative position.

T: (Distribute linking cubes as 10-sticks.) How many cubes do you have? (Give students time to count if necessary.)

S: 10.

T: Pretend that your 10-stick of cubes is a little train. (Have students orient their trains the same way by giving them a point of reference in the classroom.) Put your finger on the first cube.

S: (Touch the first cube.)

T: Let's use our number order words as we touch each cube. Ready?

S: First, second, third, fourth, fifth, sixth, seventh, eighth, ninth, tenth.

T: Good. Now break apart your cubes so none are connected. (Give students a moment to do this.) This time I want you to pretend that they are little people running in a race! The start line is the edge of your personal board. The finish line is the opposite side of your board. Watch me make my people run. (Demonstrate how to make cubes run.)

T: On your mark, get set, go!

S: (Move the cubes around as if running.)

T: Stop! The race is over. (Do not allow students to change the position of the cubes at this point.) Get out your marker. Listen carefully to what I want you to do. Circle the first runner.

S: (Circle the cube that is closest to the finish line.)

T: Make an X next to the tenth runner.

S: (Make an X next to the cube that is farthest from the finish line.)

T: Underline the fifth runner.

S: (Underline the fifth cube.)

T: Now point and show your partner who is first, second, and so on.

Have students clear their boards and play again alone or with a partner. Give instructions to mark different ordinal positions each time.

Have students change the location of the finish line so that they can describe the position of the runners relative to it.

Application Problem (5 minutes)

Materials: (S) Personal white boards

Listen carefully to my instructions. You are going to draw a house!

- First, draw a square to make the big part of your house.
- Second, use a triangle to make a roof.
- Third, use a shape of your choice for a door.
- Fourth, find somewhere in your picture where you can use two more squares or rectangles.
- Fifth, use a circle somewhere in your scene.
- Sixth, find a place where you could draw a hexagon in your scene.

Take another minute to finish your scene with more shapes and details. Don't forget to draw yourself!

Now show your picture to your partner. Tell her about each of your shapes. Do your houses look alike? How did you use shapes differently in your pictures?

Note: The activity of creating a scene using a number of assigned shapes is an opportunity for students to practice drawing the shapes. It also will serve as an anticipatory set for composition with shapes in today's lesson. Circulate during the activity to see if there are students who still need help drawing any of the basic shapes.



NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Because drawing might present a further challenge, below grade level students and those with disabilities would benefit from using manipulatives to create a house. Provide attribute blocks or pattern blocks to make the house as the first step toward drawing the shapes on personal white boards.