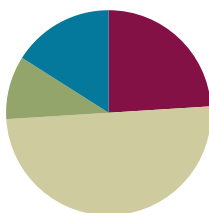


## Lesson 8

**Objective:** Model decompositions of 7 using a story situation, sets, and number bonds.

### Suggested Lesson Structure

■ Fluency Practice	(12 minutes)
■ Application Problem	(5 minutes)
■ Concept Development	(25 minutes)
■ Student Debrief	(8 minutes)
<b>Total Time</b>	<b>(50 minutes)</b>



### Fluency Practice (12 minutes)

- Say Ten Push-Ups **K.NBT.1** (3 minutes)
- Snap **K.OA.3** (5 minutes)
- Comparing Towers **K.MD.2** (4 minutes)

### Say Ten Push-Ups (3 minutes)

Note: This activity reviews students' understanding of numbers to 10 for the work of this module and extends to teen numbers in anticipation of Module 5.

Conduct activity as outlined in Lesson 2, continuing to 20.

### Snap (5 minutes)

Materials: (S) 5-stick of linking cubes

Note: This fast-paced game serves as a very concrete review of the composition and decomposition of numbers to 5. It also supports the part-whole thinking needed in the upcoming lesson.

1. Partner A shows Partner B her 5-stick, and then puts it behind her back.
2. When Partner B says, "Snap!" Partner A quickly breaks her stick into two parts.
3. Partner A shows Partner B one part.
4. Partner B tries to guess the hidden part.
5. Partner A shows the hidden part and checks Partner B's guess.

Partners take turns, continuing with the 5-stick. If time permits, students can also play with a 4-stick, 3-stick, etc.

## Comparing Towers (4 minutes)

Materials: (S) Die and 14 linking cubes (per pair)

Note: This fluency activity relates length with number. It also encourages students to explore how many fewer cubes are needed to make the towers the same length and number. The focus is on decompositions of 7 to prepare for the Concept Development.

Continue play as in Lesson 4, except that one partner starts with a 7-stick. The other partner rolls a die and creates a tower using the number shown on the die. Students compare towers and make a *less than* or *more than* statement. Then, the students take cubes from the 7-stick so it is the same height as the shorter tower.

## Application Problem (5 minutes)

Materials: (S) Small ball of clay, personal white board

Ming had 5 raisins. Represent her raisins with the clay. Dan had 2 raisins. Represent his raisins, too. How many raisins are there in all?

- Put Ming's raisins into a 5-group. Now, put Dan's raisins in a row underneath Ming's raisins like this. Do you still have 7 raisins?
- Hide the bottom 2 raisins. How many raisins do you see now?
- Talk about the raisins with your friend.
- (If time allows, include the following.) Draw a number bond to represent Ming and Dan's raisins.



Note: Representing 7 as 5 and 2 serves as the anticipatory set for today's lesson.

## Concept Development (25 minutes)

Materials: (S) Personal white board, 1 bucket of shapes with multiple variations of squares, triangles, hexagons and circles per table (construction paper cutouts can be used, if desired)

- T: Find 4 shapes with three straight sides and three corners and put them in front of you. You have a set of 4...?
- S: Triangles!
- T: Now, find 3 shapes with no corners and put them in front of you. You have a set of 3...?
- S: Circles!
- T: Push both of your sets together. How many shapes are in front of you?
- S: 7.



### NOTES ON MULTIPLE MEANS OF REPRESENTATION:

So much of this lesson depends on students understanding that circles and triangles are examples of shapes. Remind students, especially English language learners, what qualifies as a shape. Ask, "Who can name a shape they know?" Be sure to point to the words on the word wall as students practice naming the shapes they know.

- T: You have 7 shapes. Let's count them together to be sure.
- S: 1, 2, 3, 4, 5, 6, 7.
- T: Sort your shapes into two sets again. (Draw number bond template on the board.) Let's make a number bond about what you just did. Point to where I should put the number that tells the total number of shapes. As you point, loudly say "whole!"
- S: (Point and speak.)
- T: (You might playfully point to the wrong one so they can correct you.) Point to where I should write the numbers that tell how many triangles and squares. As you point, whisper "two parts!"
- S: (Point and speak.)
- T: Write the number bond on your personal white board.
- T: Great job! You took your 7 shapes and sorted them into 3 circles and 4 triangles. You made two parts! Read with me while I write the number sentence:  $7 = 3 + 4$ .
- S: 7 is the same as 3 and 4.
- T: Put your shapes back in the bucket. Now, find 1 shape with six sides and put it in front of you. What do you see?
- S: A hexagon!
- T: Find 6 shapes with four straight sides and put them in front of you. What do you see?
- S: I see 6 squares.
- T: Make a set of all of your shapes. How many do you have altogether? Let's count.
- S: 1, 2, 3, 4, 5, 6, 7.
- T: You have 7 shapes. Sort them into two groups again. How many are in each of your new groups?
- S: There are 6 squares and 1 hexagon.
- T: Let's make a new number bond for our new sets. (Draw a new number bond in a different configuration.) Where should I put the 7? Where should I put the number of squares and the number of hexagons? (Allow students to guide you in creating the new number bond.) Draw your new number bond on your board.
- T: We can't forget our number sentence. Say it with me. (Write  $7 = 6 + 1$ .)
- S: 7 is the same as 6 and 1.



### NOTES ON MULTIPLE MEANS OF ACTION AND REPRESENTATION:

Challenge students working above grade level during the lesson by giving them personal white boards and asking them to respond to challenges by filling in a number bond and equation to show how many ways to make 7. Give a recording sheet to keep track of the pairs they come up with.

NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 8 Problem Set K•4

Name Amber Date 2-7-13

Tell a story about the shapes. Complete the number bond.

3 triangles 4 squares make 7 shapes

Color the cubes to match the number bond.

Model decompositions of 7 using a story situation, sets and number bonds.

COMMON CORE Lesson 8: Model decompositions of 7 using a story situation, sets and number bonds. Date: 8/28/13 engage<sup>ny</sup> 4.B.5

- MP.2**
- T: Put your attribute blocks back. I wonder if there are any other ways to make 7.
- S: You can use 4 squares and 3 triangles. → You could use 2 circles and 5 hexagons.
- T: Great ideas. Let's make your sets, and then make the number bonds and sentences to go with them. I'm going to give you some time to work on this with your partner. Take turns finding different sets of shapes to make 7. Each time that you do that, write the new number bond on your board.

### Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

### Student Debrief (8 minutes)

**Lesson Objective:** Model decompositions of 7 using a story situation, sets, and number bonds.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.



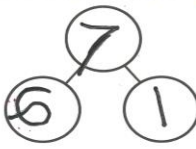
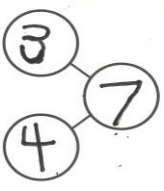
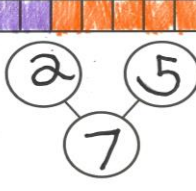
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.



- What are some of the ways you found to make 7? Let's put them in a list!
- How did you find all of those different ways? How did you know that you had found a way to make 7?
- In the Problem Set, what does the number 5 represent? How about the number 2? And the number 7?
- Did the story you and your partner told match the amount you put in each circle of the number bond?
- Why do we have to color all the cubes in the stick in the Problem Set?

NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 8 Problem Set K•4

In each stick, color some cubes orange and the rest purple. Fill out the number bond to match. Tell a story about one of your number bonds to a friend.

Draw a 7-stick and use 2 colors to make 7. Make a number bond and fill it in.

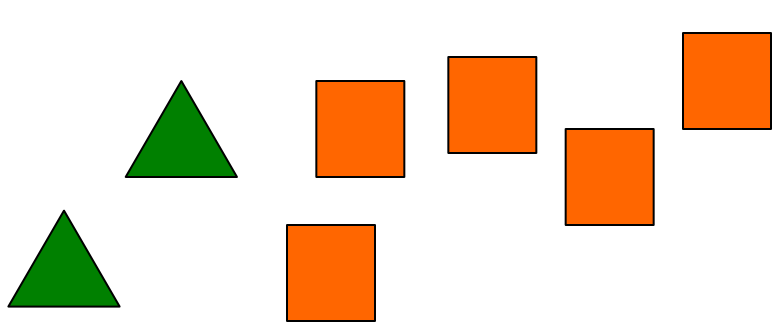
COMMON CORE Lesson 8: Model decompositions of 7 using a story situation, sets, and number bonds. Date: 8/21/14 engage<sup>ny</sup> 4.B.16

$$\begin{aligned}
 7 &= 6 + 1 \\
 7 &= 5 + 2 \\
 7 &= 4 + 3 \\
 7 &= 3 + 4 \\
 7 &= 2 + 5 \\
 7 &= 1 + 6
 \end{aligned}$$

Name \_\_\_\_\_

Date \_\_\_\_\_

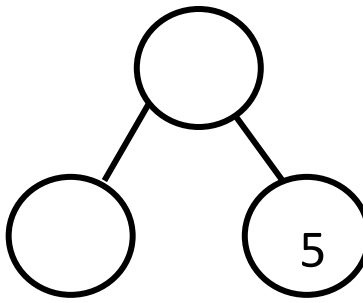
Tell a story about the shapes. Complete the number bond.



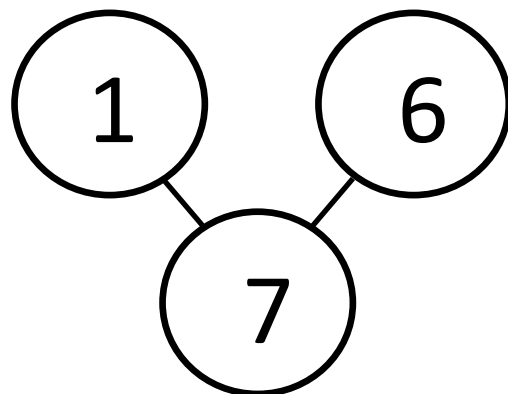
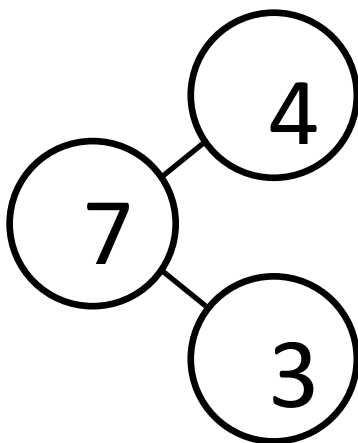
triangles

squares make

shapes

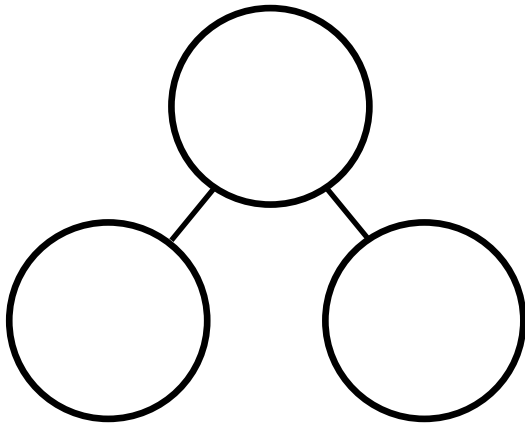


The squares below represent cube sticks. Color the cube stick to match the number bond.

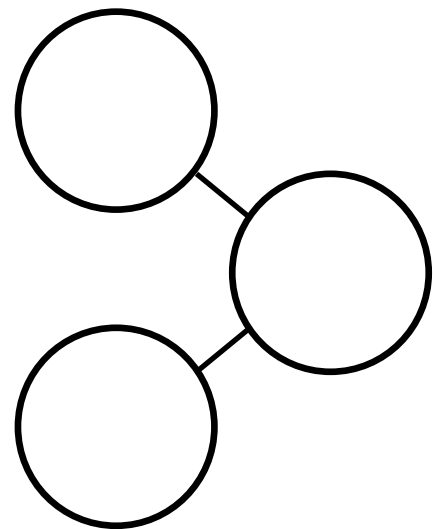


In each stick, color some cubes orange and the rest purple. Fill out the number bond to match. Tell a story about one of your number bonds to a friend.

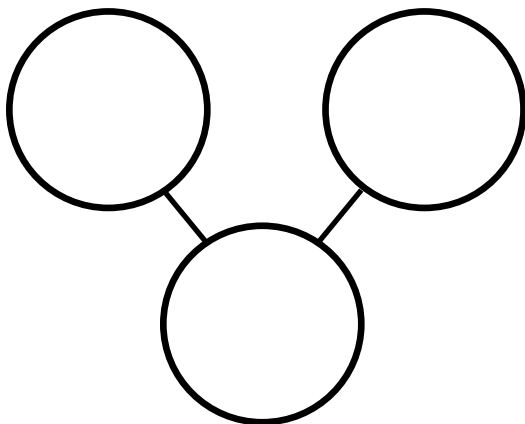
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Draw a 7-stick and use 2 colors to make 7. Make a number bond and fill it in.

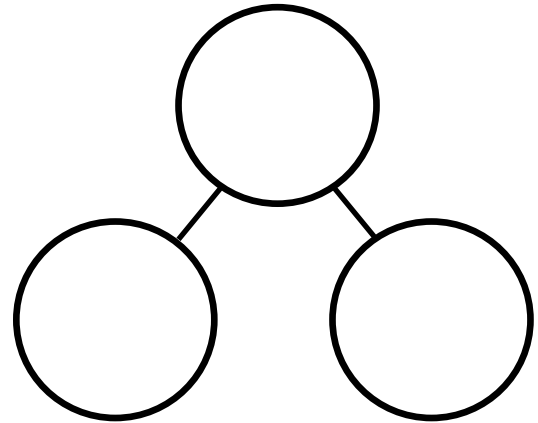
Name \_\_\_\_\_

Date \_\_\_\_\_

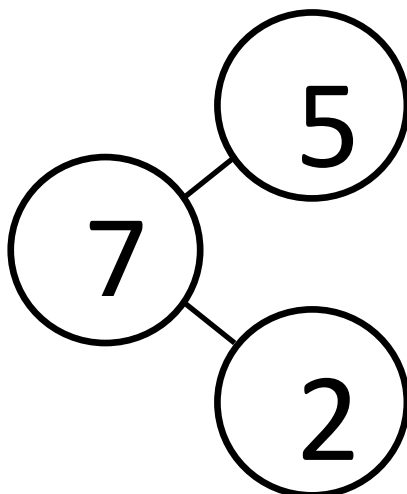
Draw a set of 4 circles and 3 triangles. How many shapes do you have?

Fill in the number sentence and number bond.

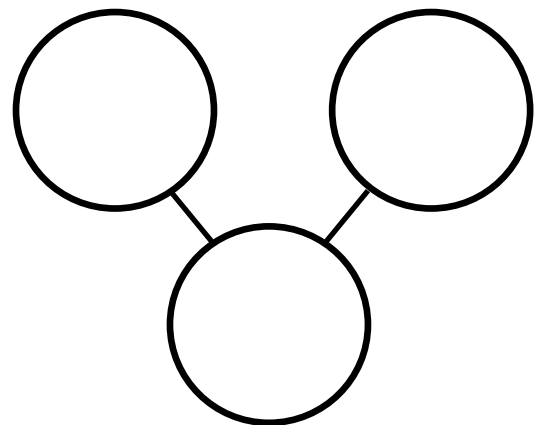
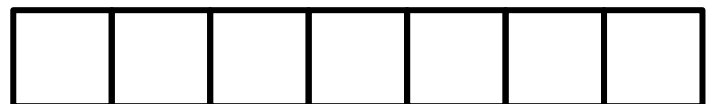
is  and



The squares represent cube sticks. Color the cubes to match the number bond.



Color some cubes red and the rest blue. Fill out the number bond to match.



On the back of your paper, draw a set of 7 squares and circles. Make a number bond and fill it in. Now, write number sentence like the sentence above that tells about your set.