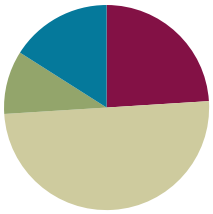
Lesson 11

Objective: Represent decompositions for 6–8 using horizontal and vertical number bonds.

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(5 minutes)
Concept Development	(25 minutes)
Student Debrief	(8 minutes)
Total Time	**(50 minutes)**



Fluency Practice (12 minutes)

- Take Apart Groups of Circles **K.OA.1** (4 minutes)
- Finger Number Pairs **K.OA.3** (3 minutes)
- Make 7 Matching Game **K.OA.1** (5 minutes)

Take Apart Groups of Circles (4 minutes)

Materials: (S) Personal white board

Note: This activity anticipates today's work with decomposition.

T: Draw three circles on your board. (Wait for students to do this.) Put Xs on two of them. How many circles have Xs?
S: 2.
T: How many circles do not have an X?
S: 1.
T: How many circles are on your board?
S: 3.
T: We can tell how we took 3 apart like this: 3 is 2 and 1. Echo me, please.
S: 3 is 2 and 1.
T: Very good. Let's go a little faster now. Erase. Draw 4 circles on your board. (Wait for students to do this.) Put Xs on 3 of them. (Wait.) How many do not have an X?
S: 1.

T: Raise your hand when you can say the number sentence starting with 4. (Wait for all students to raise hands, and then signal.) Ready?

S: 4 is 3 and 1.

Continue working through problems with totals of 1–5.

Finger Number Pairs (3 minutes)

Note: This activity gives students an opportunity to decompose numbers in more than one way, anticipating the work of the lesson. It also serves as an active practice for the Make 7 Matching Game.

T: You've gotten very good at showing fingers the Math Way. I want to challenge you to think of other ways to show numbers on your fingers. Hint … you can use two hands! First, I'll ask you to show me fingers the Math Way. Then, I'll ask you to show me the number another way. Ready? Show me 5.

S: (Hold up all the fingers of the left hand.)

T: Now, show me another way to make 5, using two hands.

S: (Show 3 fingers on one hand and 2 on the other. → Show 1 finger on one hand and 4 on the other.)

T: How we can be sure that we're still showing 5?

S: Count the fingers on both hands.

Continue the process with 6–8. For numbers where more than one combination is possible, have students try each other's combinations.

Make 7 Matching Game (5 minutes)

Materials: (S) Matching game cards 0–5 (Lesson 1 Fluency Template 2), matching game cards 6–10 (Lesson 7 Fluency Template 2) per pair (use 1 picture of each quantity 0–7)

Note: Students find the hidden partners of 7 in support of today's work with composition and decomposition.

Conduct the activity as outlined in Lesson 7, but now, have students find partners of 7.

Application Problem (5 minutes)

Materials: (S) Personal white board

Nesim has 5 toy cars. Draw Nesim's cars.

Awate has 3 toy cars. Draw a picture to show his cars, too. How many cars do they have together? Can you show the number bond to go with the story? Talk with your partner about your work.

Note: Composition of the number 8 serves as an anticipatory set for this lesson.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Scaffold the Application Problem for students with disabilities and students working below grade level who are having difficulty using the number bond by providing them with a number bond that has one of the parts (5 or 3) already filled out.

Concept Development (25 minutes)

Materials: (S) Linking cube 5-stick, 5 additional loose linking cubes (all of one color or with color change at 5), number bond (Lesson 1 Template 2) inserted into personal white board

T: Starting with your 5-stick, make an 8-stick with your linking cubes. How many more cubes did you add?

S: 3.

T: When I say, "Snap!" break your 8-stick into two smaller sticks. Snap! What numbers did you find hiding inside the 8?

S: I have a 2 and a 6.

T: Great! You found a 2 and a 6 inside your 8. How would I show that in a number bond? (Allow students to guide you in creating the number bond on the board.) Make this number bond on your personal white board, too. (Allow students time to create the number bond.) Did anyone do it a different way?

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S: I found a 5 and a 3. → I have a 1 and a 7. (Allow students to share other partners for 8, modeling it in the number bond format each time.)

T: Put your stick back together. You have 8 cubes. Please take 1 off, and put it aside. How many cubes are in your stick now?

S: There are 7.

T: Let's play the game again … but first, please erase your boards, and turn them upside down. Could we still make a number bond this way?

S: Yes! It doesn't matter which way it faces.

T: All right … Snap! What partners to make 7 did you find?

S: I have a 2 and a 5.

T: Let's write this in a number bond, too. (Guide students to help create a number bond in a different orientation. After they copy it onto their boards, ask for other partners for 7.)

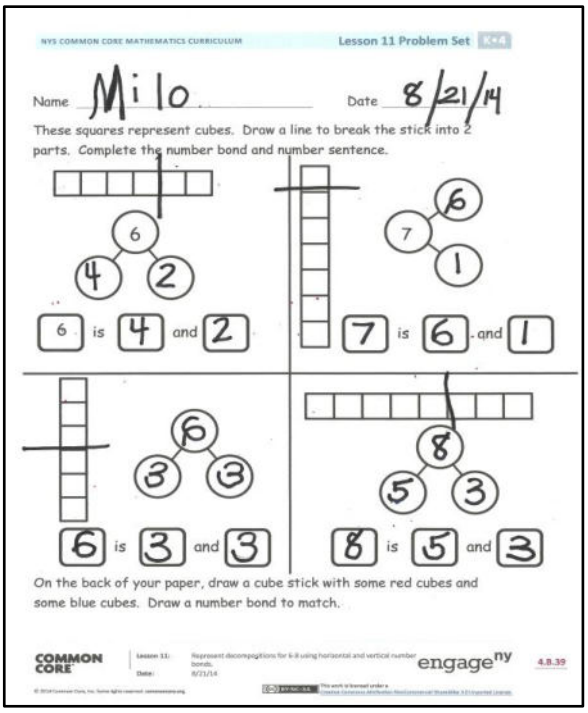
Ask students to repeat the activity with a partner using a cube stick of 6. Students who need support might be in a small group with the teacher for assistance in using the language or identifying multiple decompositions of 6.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Scaffold the lesson for English language learners by keeping a record of the number partners students find in their 8, 7, and 6 linking cubes. Use the format: 8 is 7 and 1, 8 is 5 and 3, etc. This helps all students to keep track of the various number combinations.

Problem Set (10 minutes)

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


NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 11 Problem Set K•4

Name Milo Date 8/21/14

These squares represent cubes. Draw a line to break the stick into 2 parts. Complete the number bond and number sentence.

6 is 4 and 2

7 is 6 and 1

6 is 3 and 3

8 is 5 and 3

On the back of your paper, draw a cube stick with some red cubes and some blue cubes. Draw a number bond to match.

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Student Debrief (8 minutes)

Lesson Objective: Represent decompositions for 6–8 using horizontal and vertical number bonds.

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

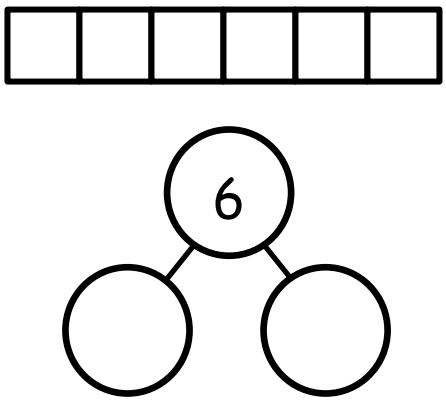
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Student Debrief. Guide students in a conversation to debrief the Problem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

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

- Look at the stick with 6 cubes in the Problem Set. Share with a partner where you drew a line to break the stick. Do you have the same parts?
- When you broke apart your 8-stick, did your number bond have the same numbers as everyone else? Why?
- When you turned the number bond, what did you notice?
- Does the number bond change when it faces different directions?
- With your partner, talk about how many different ways you could break apart the 6-stick, then the 7-stick, and finally the 8-stick.

Name _____ Date _____

These squares represent cubes. Draw a line to break the stick into 2 parts. Complete the number bond and number sentence.



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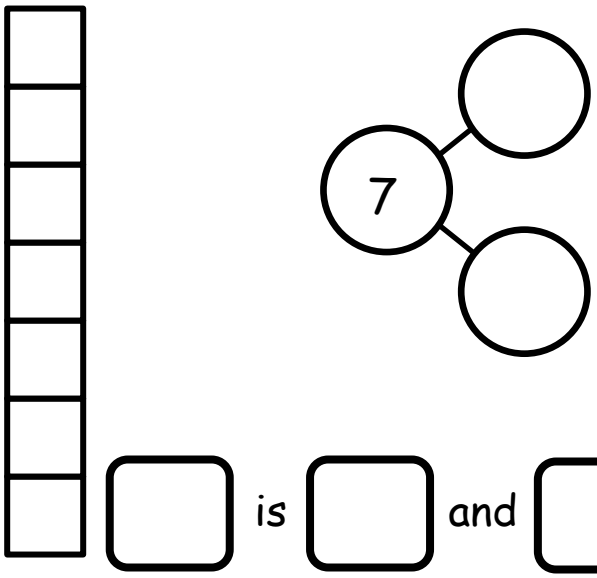

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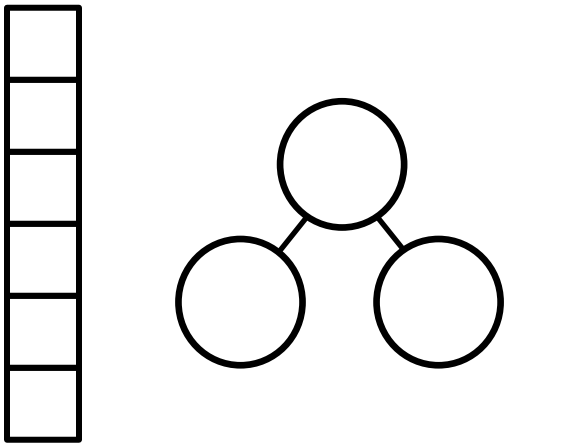

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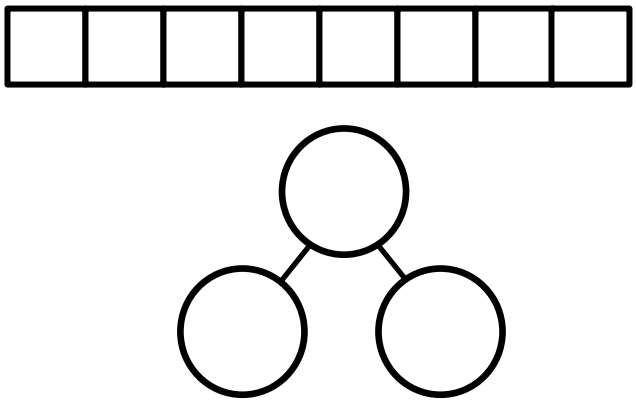

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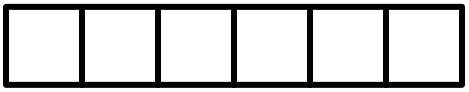
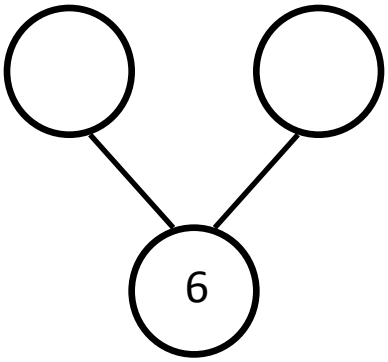
On the back of your paper, draw a cube stick with some red cubes and some blue cubes. Draw a number bond to match.

Name _____ Date _____

These squares represent cubes. Color 5 cubes green and 1 blue. Fill in the number bond.





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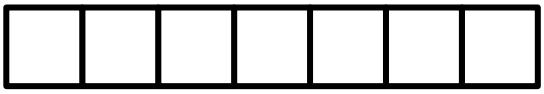
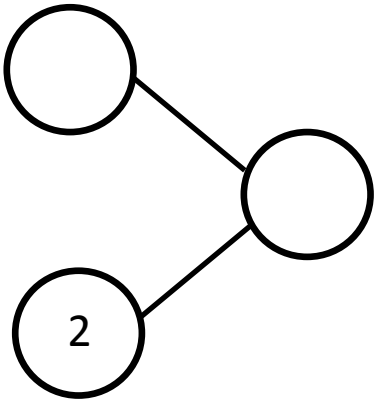
Color 5 cubes green and 2 blue. Fill in the number bond.





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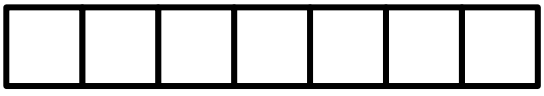
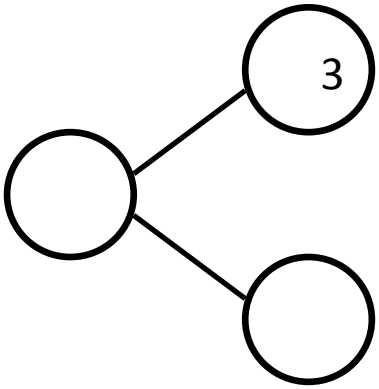
Color 4 cubes green and 3 blue. Fill in the number bond.





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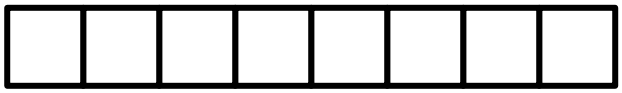
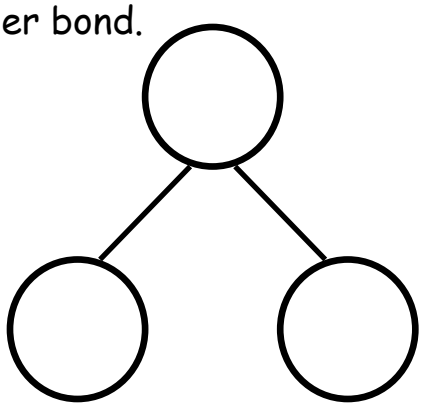
Color 4 cubes green and 4 blue. Fill in the number bond.





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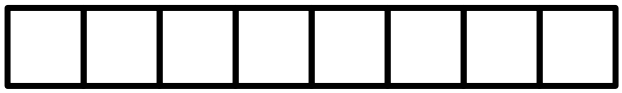
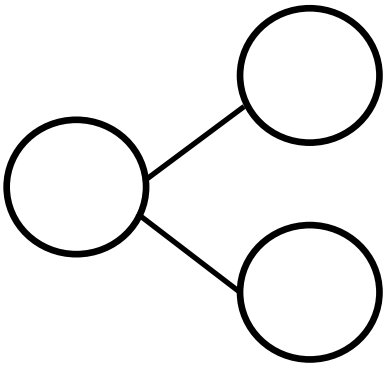
Color 3 cubes green and 5 blue. Fill in the number bond.





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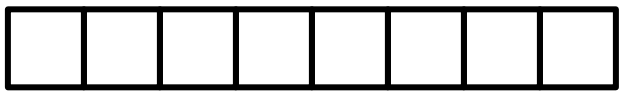
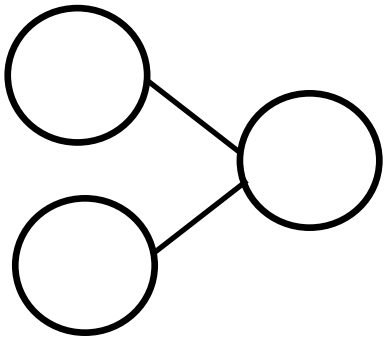
Color 2 cubes green and 6 blue. Fill in the number bond.





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