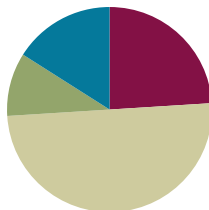


Lesson 15

Objective: Represent decomposition and composition addition stories to 8 with drawings and equations with no unknown.

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)

- 5-Groups: Counting Dots and Spaces **K.OA.4** (3 minutes)
- Show Me Taller/Shorter **K.MD.2** (4 minutes)
- Make 8 Matching Game **K.OA.3** (5 minutes)

5-Groups: Counting Dots and Spaces (3 minutes)

Materials: (T) Large 5-group cards (Lesson 12 Fluency Template 2)

Note: Students use the support of the 5-groups to find partners of 10 easily. This practice prepares them to find partners of 10 and record the combination through drawings and equations in the second half of the module.

T: Raise your hand when you know the number of dots, and then wait for the snap to say the number.
How many dots? (Show 9 dots.) (Snap.)

S: 9.

T: How many spaces?

S: 1.

Continue to show cards with the following possible sequence: 9, 1, 8, 2, 7, 3, 6, 4, 5.

Show Me Taller/Shorter (4 minutes)

Materials: (T) Number towers 1–10 showing color change at 5

Note: This maintenance activity gives students an opportunity to hone their skills in comparing lengths and reiterates the relationship between length and number. Having the color change at 5 reinforces students' work with the $5 + n$ pattern throughout this module.



- T: Do you remember how we use our hands to show taller and shorter? Show me taller.
S: (Hold one hand above head.)
T: Good memories. Now, show me shorter.
S: (Hold hand lower than before, indicating less height.)
T: Nice. I want you to help me compare the height of my number towers. (Hold the 5 and 8 number towers in your hand so it looks like the 5-stick is taller.) Do we know which one is taller?
S: No! → We can't see all of the tower. → You need to line them up!
T: Okay, I'll line up the endpoints. (Show the 8-stick and 5-stick with endpoints aligned.) Is my 5-stick taller or shorter than my 8-stick?
S: The 5-stick is shorter than the 8-stick.

Continue, using the following sequence: 2 and 6, 9 and 4, 4 and 6, 2 and 3, 8 and 6, 7 and 6, 6 and 5. Starting with numbers that are far apart makes it easier to compare. Make sure to set up the question so that the answer fluctuates between taller and shorter.

Make 8 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 only dots, dice, and fingers for the quantities 0–8)

Note: Students find the hidden partners of 8 in support of today's work with composition and decomposition.

Conduct the activity as outlined in Lesson 1, but now, have students find partners of 8.

Application Problem (5 minutes)

Materials: (S) Personal white board

You are having a party! You get 8 presents. 2 presents have stripes, and 6 presents have polka dots. Draw the presents, and write the number sentences two different ways on your personal white board.

Note: Decomposition and composition of the number 8 serves as an anticipatory story context for this lesson.

Concept Development (25 minutes)

Materials: (T) Cup containing 8 loose linking cubes or other small manipulatives, masking tape (S) Personal white board

Stretch a line of tape or chalk down the middle of the rug, table, or desk.

T: We are going to play the gravity game today! Let's pretend my cubes are space rocks. Help me count how many rocks I am putting into my cup.

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

T: I have 8 space rocks in my cup. This side of the tape is the land (point), and this side is the ocean (point). I will use gravity and my magic tape line to help me find some number sentences about 8. How many space rocks fell on land, and how many fell into the ocean? Let me shake it 8 times, and then, I will pour it out to see what happens! (Demonstrate and pour the cubes onto the surface.) What happened?

S: There are some on that side of the line and some on this side. → There are 6 on that side and 2 on this one!

T: Can we make a number sentence about our picture?

MP.4 S: We had 8 rocks, but they broke into a 2 and a 6. → $8 = 2 + 6$. → $2 + 6 = 8$.
(Other varying responses.)

T: Write the number sentence on your personal board.

T: Did anyone think of a different number sentence that tells how our cubes look right now?
(Allow time for sharing and discussion.)

T: Let's try it again, and see if gravity can help us make another sentence! Student B, would you like to try? I wonder how many different number sentences we can find about 8.

Allow several more iterations of the game, directing students to represent the equations for the situation each time. List the equations on the board to help students appreciate all of their new names for 8. Ensure that students are confident as to the placement of the addends and the total in their number sentences.

Problem Set (10 minutes)

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



NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Allow students with disabilities or students working below grade level, who might still need the scaffold, to engage in the lesson by continuing to use number bonds to show what happened when the cubes were poured out. Encourage them to write the number sentences underneath.

Student Debrief (8 minutes)

Lesson Objective: Represent decomposition and composition addition stories to 8 with drawings and equations with no unknown.

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.


- In the Problem Set, how many yellow and red flowers did you draw? What did your number sentence look like?
- Look for a partner whose flowers look different from yours. Talk about how they are different.
- How many different partners did we find to make 8 today? (Count equations on the board. If students try to count equations like $6 + 2 = 8$ and $2 + 6 = 8$ twice, talk about how one set of partners can make two different equations.)
- How do the number sentences on the board look similar? How are they different?
- What if we would have played the gravity game with only 7 cubes?

NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 15 Problem Set K•4

Name ASHLEY Date 2-16-13

Fill in the number sentences.


There are 8 fish. There are 4 striped fish and 4 goldfish.



$$\boxed{8} = \boxed{4} + \boxed{4}$$

$$\boxed{4} + \boxed{4} = \boxed{8}$$

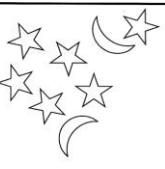
There are 8 shapes. There are 5 triangles and 3 diamonds.



$$\boxed{8} = \boxed{5} + \boxed{3}$$

$$\boxed{5} + \boxed{3} = \boxed{8}$$

There are 6 stars and 2 moons. There are 8 shapes.



$$\boxed{6} + \boxed{2} = \boxed{8}$$

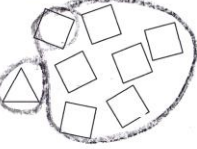
$$\boxed{8} = \boxed{6} + \boxed{2}$$

COMMON CORE Lesson 15: Represent pictorial decomposition and composition addition stories to 8 with drawings and equations with no unknown. 8/20/13

engage^{ny} 4.C.5

NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 15 Problem Set K•4


There are 8 shapes. Count and circle the squares. Count and circle the triangle.



$$\boxed{1} + \boxed{7} = \boxed{8}$$

$$\boxed{8} = \boxed{1} + \boxed{7}$$

There are 8 flowers. Some flowers are yellow and some flowers are red. Draw a picture to go with the story.



$$\boxed{8} = \boxed{5} + \boxed{3}$$

$$\boxed{3} + \boxed{5} = \boxed{8}$$

Create your own story and tell your partner. Have your partner draw a picture of your story and create a number sentence to go with the picture.

COMMON CORE Lesson 15: Represent pictorial decomposition and composition addition stories to 8 with drawings and equations with no unknown. 8/20/13

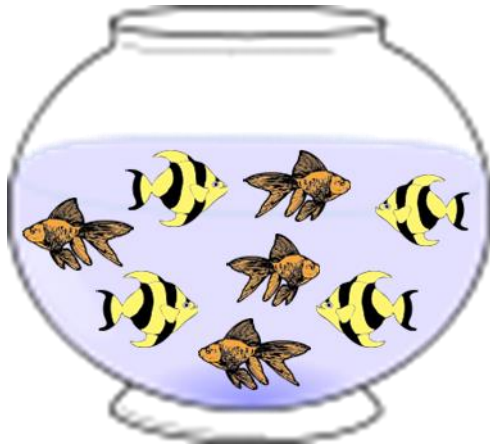
engage^{ny} 4.C.6

Name _____

Date _____

Fill in the number sentences.

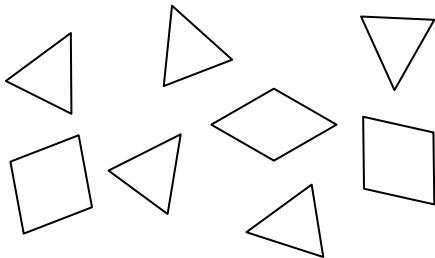
There are 8 fish. There are 4 striped fish and 4 goldfish.



$$\square = \square + \square$$

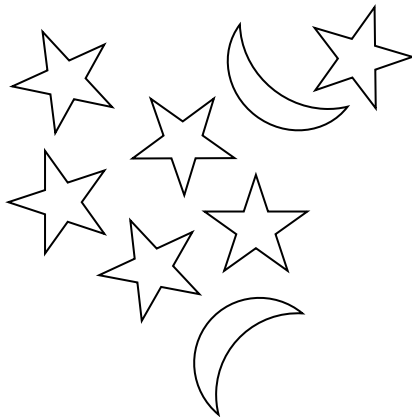
$$\square + \square = \square$$

There are 8 shapes. There are 5 triangles and 3 diamonds.



$$\square = \square + \square$$

$$\square + \square = \square$$



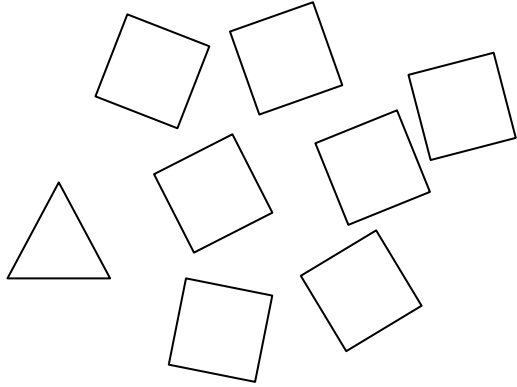
There are 6 stars and 2 moons.

There are 8 shapes.

$$\square + \square = \square$$

$$\square = \square + \square$$

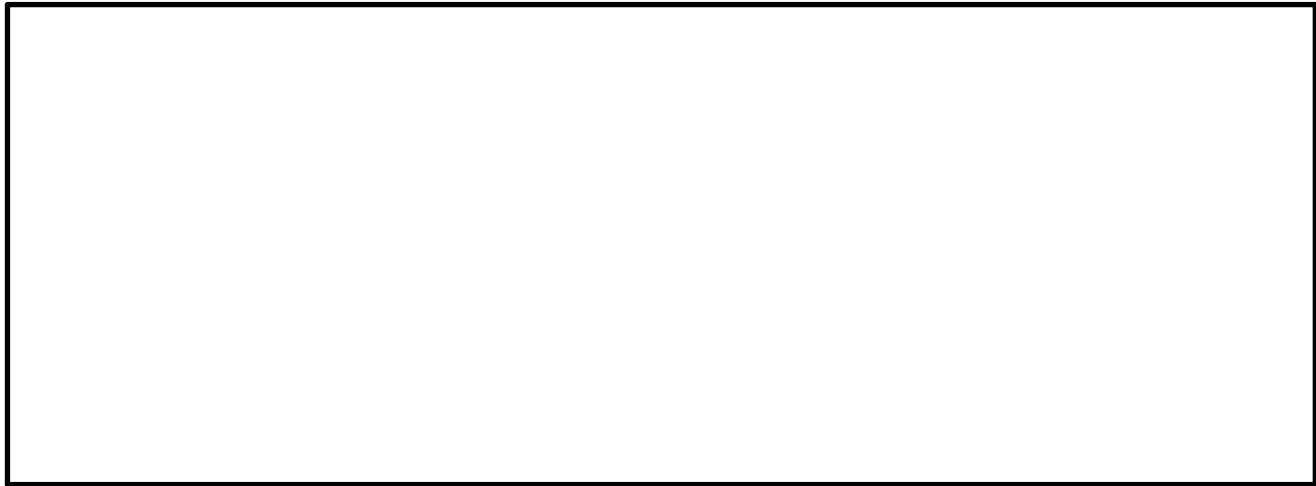
There are 8 shapes. Count and circle the squares. Count and circle the triangle.



$$\square + \square = \square$$

$$\square = \square + \square$$

There are 8 flowers. Some flowers are yellow, and some flowers are red. Draw a picture to go with the story.



$$\square = \square + \square$$

$$\square + \square = \square$$

Create your own story, and tell your partner. Have your partner draw a picture of your story and create a number sentence to go with the picture.

Name _____

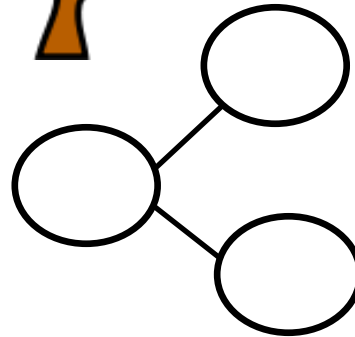
Date _____



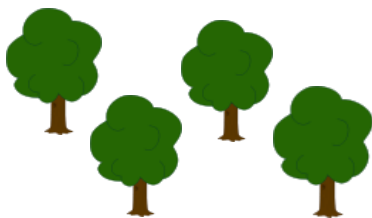
There are 8 trees. 5 are palm trees, and 3 are apple trees. Fill in the number sentences and the number bond.



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There are 8 trees. 4 are oak trees, and 4 are spruce trees. Fill in the number sentences and the number bond.



<input type="text"/>	=	<input type="text"/>	+	<input type="text"/>
<input type="text"/>	+	<input type="text"/>	=	<input type="text"/>

