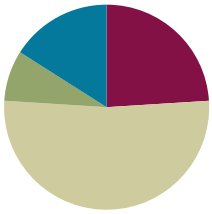
Lesson 24

Objective: Decompose the number 8 using 5-group drawings and crossing off a part, and record each decomposition with a drawing and subtraction equation.

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(4 minutes)
Concept Development	(26 minutes)
Student Debrief	(8 minutes)
Total Time	**(50 minutes)**



Fluency Practice (12 minutes)

- Happy Counting **K.CC.2** (3 minutes)
- Roll and Draw 5-Groups **K.OA.3** (5 minutes)
- Take Apart Groups of Circles **K.OA.1** (4 minutes)

Happy Counting (3 minutes)

Note: Fluidity with counting forward and backward builds students' number sense and sets the stage for counting on strategies used in Grade 1.

Conduct the activity as described in Lesson 19, but continue the count to 20.

Roll and Draw 5-Groups (5 minutes)

Materials: (S) Pair of dice (with the 6 sides covered), personal white board

Note: This activity helps students see numbers in relationship to the five and prepares them for using 5-groups with subtraction operations.

Have students roll the dice, count the dots, and then draw the number as a 5-group. Observe to see which students erase completely and begin each time from one rather than draw more or erase some to adjust to the new number.

Take Apart Groups of Circles (4 minutes)

Materials: (S) Personal white board

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

T: Draw 4 circles on your personal white 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: 2.
T: Raise your hand when you can say the **subtraction** number sentence starting with 4. (Wait for all students to raise hands, and then signal). Ready?
S: 4 minus 2 is 2.

Continue working through problems with subtrahends of 2 to 7. The following is a suggested sequence: 5 – 2, 6 – 2, 7 – 2, 3 – 2, 4 – 3, 5 – 4, 6 – 5, and 7 – 6.

Application Problem (4 minutes)

Materials: (S) Personal white board

Robin had 8 cats in her house. 3 of the cats went outside to play in the sunshine. Draw her cats. Use your picture to help you draw a number bond about the cats. How many cats were still in the house? Can you make a number sentence to tell how many cats were still inside?

Share your work with your partner. Did he do it the same way?

Note: Practice in exploring the relationships among representational drawings, number bonds, and number sentences serves as the anticipatory set for today's lesson with 8.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Scaffold the Application Problem for students with disabilities by providing a blackline master insert of a number bond and the outline for writing a number sentence. This enables them to focus on the mathematics and build their conceptual understanding. The inserts also can be used as a mat for use with linking cubes to show the problem.

Concept Development (26 minutes)

Materials: (T) Large foam die (S) Linking cube 8-stick, personal white board, 1 die (per pair)

T: Count the number of cubes in your stick. How many?
S: There are 8.
T: Break 1 cube off the end of your stick, and put it on your desk. How many cubes do you still have left in your hand?
S: 7.
T: Tell me a number sentence about what you just did.
S: We took 1 away. → 8 take away 1 is 7.

T: Draw the cubes on your personal white board, and cross off the one you took off. Now, let's make a number bond about your picture. You have 1 cube on your desk and 7 cubes in your hand. Help me draw the number bond. What is the whole? (8.) What are your parts? (1 and 7.) (Demonstrate the number bond on the board.) You took 1 away. (Cover part of the number bond.) How many were left?

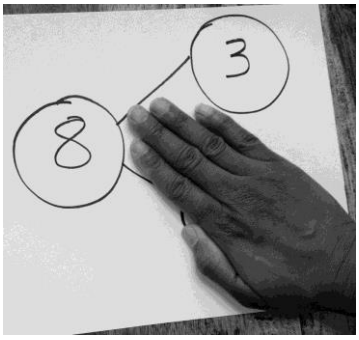
S: 7.

T: Write the number bond on your board, too. You can cross out the part of 1 to show what you did when you took the cube away. How would we write our number sentence? (Demonstrate 8 – 1 = 7.)

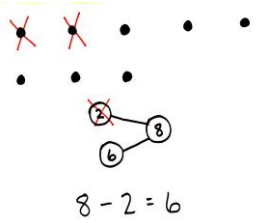
S: 8 take away 1 is 7.

T: Great! Put your 8-stick back together. This time, take 2 cubes off the end. Draw the picture on your board. What would our number bond look like this time?

Repeat the exercise several times, each time increasing the subtrahend by 1 until there is 8 – 7 = 1. In each situation, demonstrate and allow students to record a picture of the action, the number bond, and the number sentence on their boards. Show how hiding a part in the number bond is a representation of the take away concept.



8 take away 5 leaves 3.



T: Put your cubes away, and erase your board. Does anyone remember how we could draw 8 the 5-group way? (Allow students to guide the creation of the representation on the board.) Let's roll the die to see how many we should take away from our 8. (Demonstrate.) How many?

S: 2.

T: I will cross off 2 to show the ones we are taking away. (Demonstrate.) How many are left?

S: There are 6 left.

T: What would my number sentence be?

S: 8 – 2 = 6.

T: How could we make a number bond about our picture and then show that we are taking part away? (Allow time for discussion and demonstration.)

MP.4

T: On your board, draw the 5-group for the number 8. With your partner, take turns rolling the die to find out how many you should take away each time. When you roll, cross off the dots, and work with your partner to make the number bond and write the number sentence. Let's see how many different number sentences we can find! (Circulate during the activity to check for understanding and correct representation of the 5-group situations.)

T: Who would like to share one of her number sentences with the class? I will list them on the board.

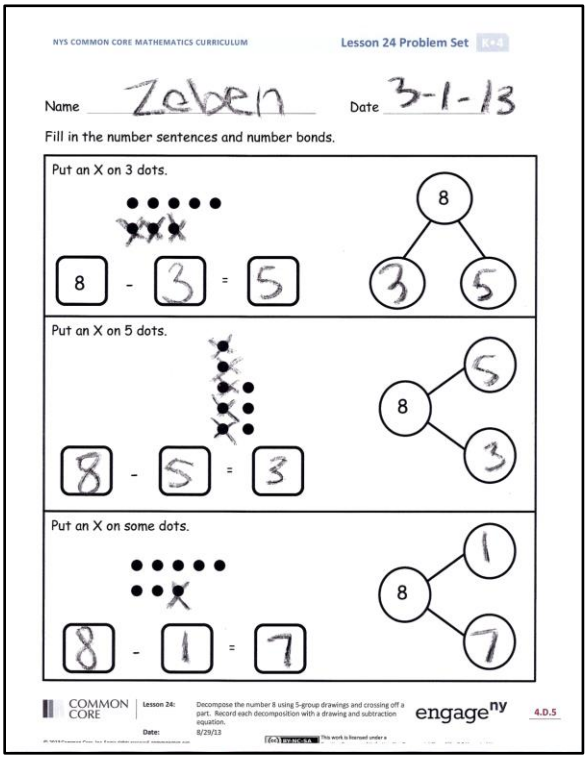
S: 8 – 1 = 7. → 8 – 4 = 4. → We found 8 – 2 = 6.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Scaffold the lesson for English language learners by pointing to images on the board (or word wall) that correspond to the words. For example, point to a number sentence while asking, "What would my number sentence be?"

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 24 Problem Set K•4

Name Zeben Date 3-1-13

Fill in the number sentences and number bonds.

Put an X on 3 dots.

8 - 3 = 5

8 (3, 5)

Put an X on 5 dots.

8 - 5 = 3

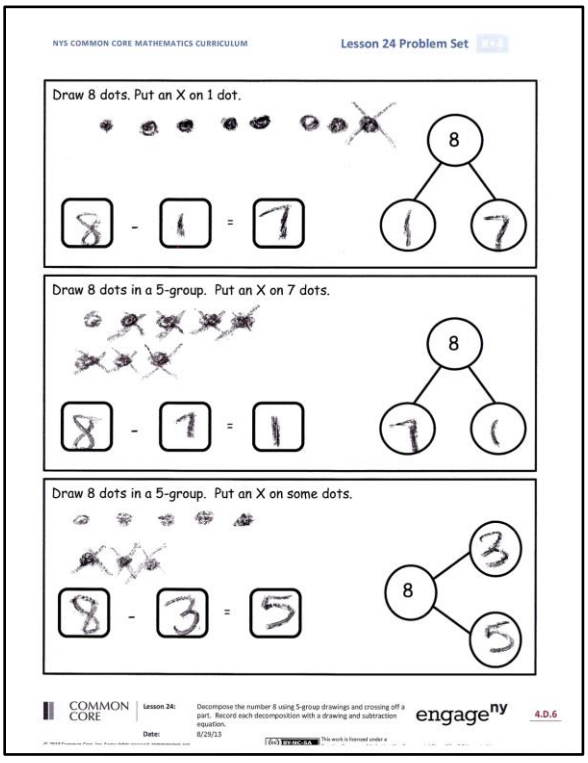
8 (5, 3)

Put an X on some dots.

8 - 1 = 7

8 (1, 7)

COMMON CORE Lesson 24: Decompose the number 8 using 5-group drawings and crossing off a part. Record each decomposition with a drawing and subtraction equation. Date: 8/29/13 engage^ny 4.D.5


NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 24 Problem Set K•4

Draw 8 dots. Put an X on 1 dot.

8 - 1 = 7

8 (1, 7)

Draw 8 dots in a 5-group. Put an X on 7 dots.

8 - 7 = 1

8 (7, 1)

Draw 8 dots in a 5-group. Put an X on some dots.

8 - 3 = 5

8 (3, 5)

COMMON CORE Lesson 24: Decompose the number 8 using 5-group drawings and crossing off a part. Record each decomposition with a drawing and subtraction equation. Date: 8/29/13 engage^ny 4.D.6

Student Debrief (8 minutes)

Lesson Objective: Decompose the number 8 using 5-group drawings and crossing off a part, and record each decomposition with a drawing and subtraction equation.

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.

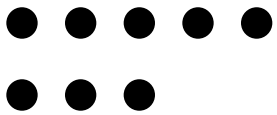
Any combination of the questions below may be used to lead the discussion.

- In the Problem Set, did the 5-group dots make it easier to see how many dots were left? Why?
- In the last problem, how many dots did you put an X on? What did your number sentence and number bond look like?
- Look at the first problem. Tell me all the numbers in your number bond and number sentence.
  - Show me which dots the 8 belongs with.
  - Show me which dots the 3 belongs with.
  - Show me which dots the 5 belongs with.
- What number is the same in all of the number bonds and all of the number sentences? Why is 8 in all of them?
- How did the number bonds and the number sentences help one another in our lesson?

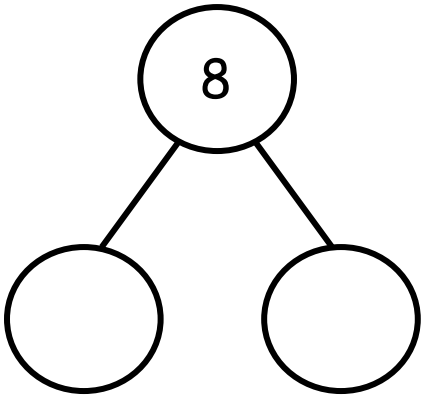
Name _____ Date _____

Fill in the number sentences and number bonds.

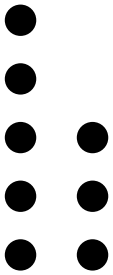
Put an X on 3 dots.



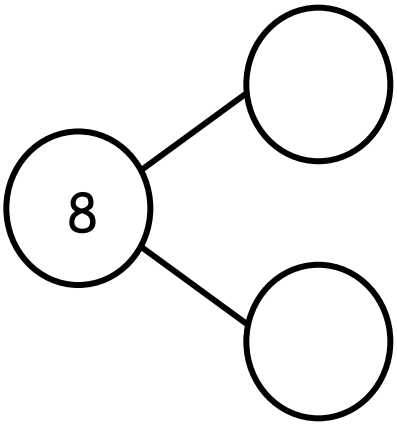
8 - ☐ = ☐



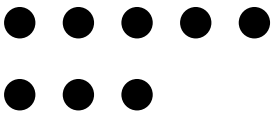
Put an X on 5 dots.



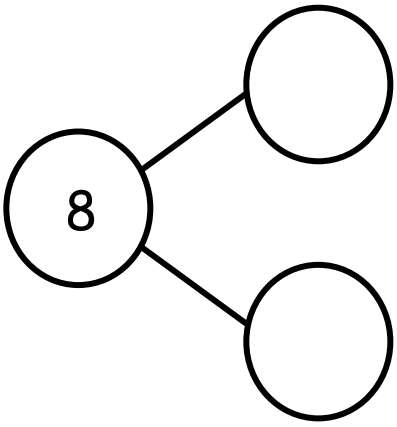
☐ - ☐ = ☐



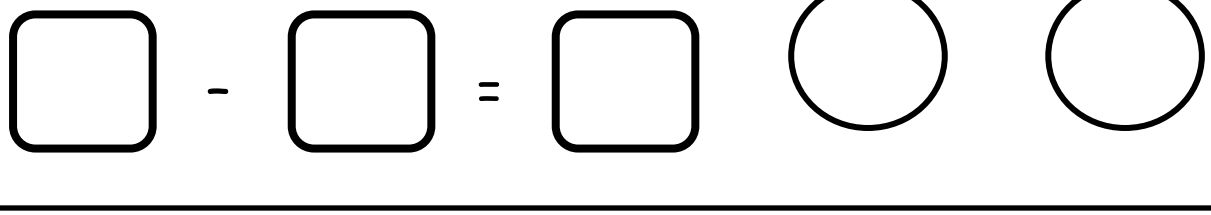
Put an X on some dots.



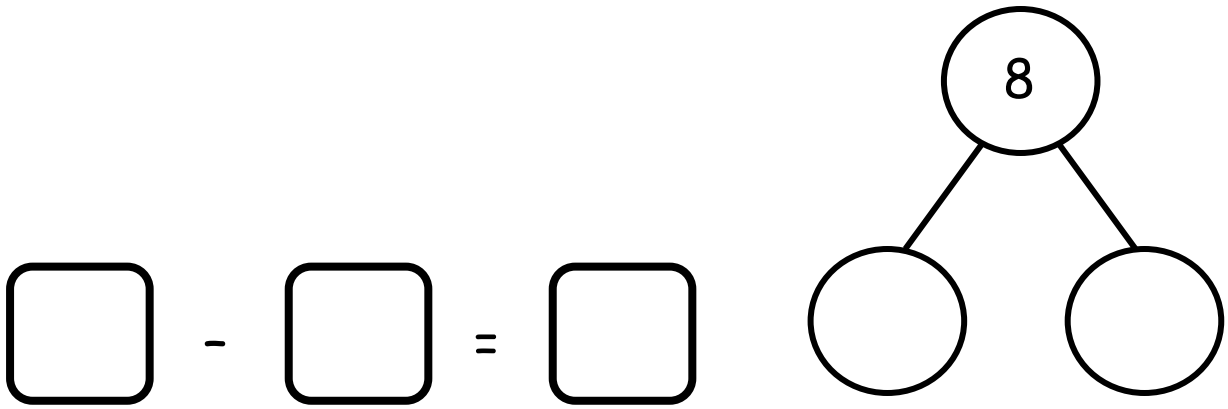
☐ - ☐ = ☐



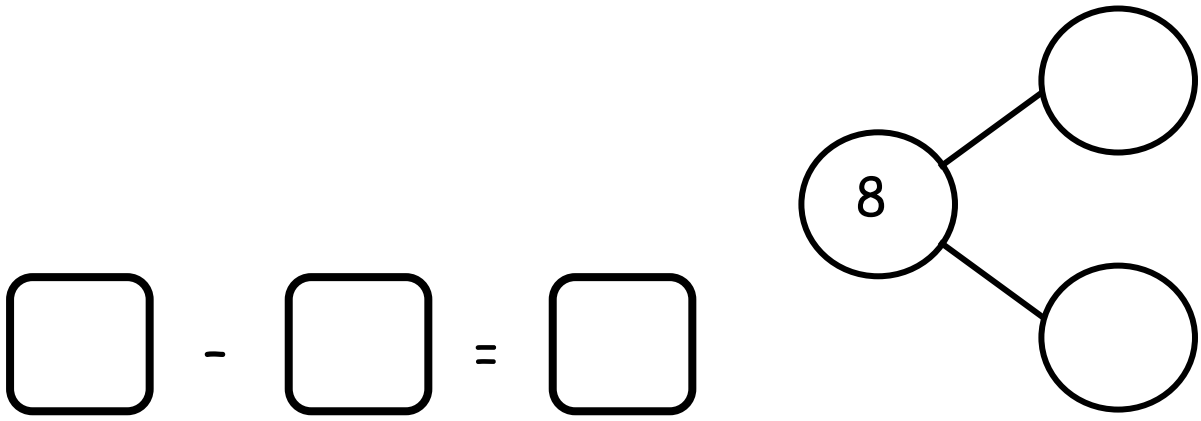
Draw 8 dots. Put an X on 1 dot.



Draw 8 dots in a 5-group. Put an X on 7 dots.

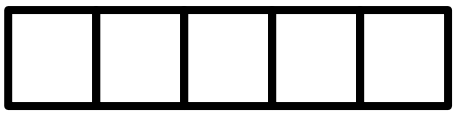


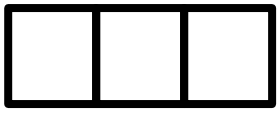
Draw 8 dots in a 5-group. Put an X on some dots.



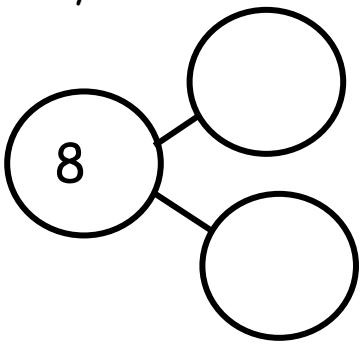
Name _____ Date _____

Here is 8 the 5-group way. Put an X on 2 cubes. How many are left? Fill in the number sentence and number bond.

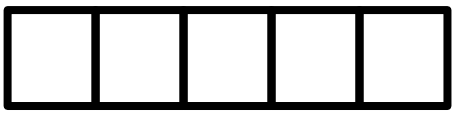


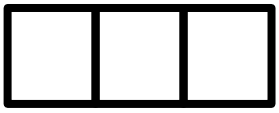


8 - ☐ = ☐

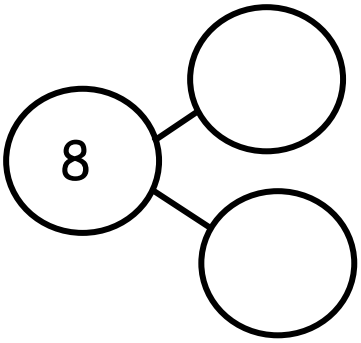


Here is 8 the 5-group way. Put an X on 4 cubes. How many are left? Fill in the number sentence and number bond.



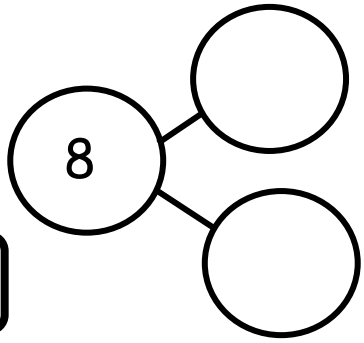


8 - ☐ = ☐



Draw 8 the 5-group way. Put an X on some cubes. How many are left? Write the number sentence and the number bond.

8 - ☐ = ☐



On the back of your paper, draw 7 the 5-group way. Put an X on some, and write a number sentence and number bond.