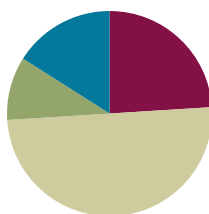# Lesson 22

Objective: Decompose the number 6 using 5-group drawings by breaking off or removing a part, and record each decomposition with a drawing and subtraction equation.

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)

- ▪ Sprint: Complete the Number Bond **K.OA.1**   (12 minutes)

Sprint: Complete the Number Bond (12 minutes)

Materials: (S) Complete the Number Bond Sprint (2 copies)

Note: This Sprint focuses on part–whole relationships in anticipation of the Concept Development.

   T: It's time for a Sprint! (Briefly recall previous Sprint preparation activities, and distribute Sprints facedown.) Take out your pencil and one crayon—any color. For this Sprint, you are going to complete the number bond. You can use drawings or numbers. (Demonstrate the first problem as needed.)

Continue to follow the Sprint procedure as outlined in Lesson 3. Today, students work on two different Sprints. Continue to emphasize that the goal is simply to do better than the first time and celebrate improvement.

Application Problem (5 minutes)

Materials: (S) Linking cube 6-stick per pair, personal white board

   T: Let's play a game of Snap! Count the cubes in your stick. How many are you starting with?

   S: 6.

> **NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**
>
> Scaffold the Application Problem for English language learners by providing sentence starters to use during the game. "You have __ cubes behind your back." Encourage students to say, "You have __cubes behind your back because __take away __is __." Students learn the mathematical language as they use it regularly.

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T: Put the stick behind your back. When your partner says, "Snap!" break your stick. Show him how many cubes you have left.

T: Can he figure out how many are still behind your back? If not, show him.

T: Make a number bond about your snap on your personal white board.

T: Can you and your partner think of a take away number sentence to tell about the snap?

Note: Reintroduction of this game and reviewing the number bond helps students to contemplate the relationships between addition and subtraction. Focusing on the decomposition of 6 serves as an additional anticipatory set for this lesson.

Concept Development (25 minutes)

Materials: (T) Large foam die (S) Linking cube 6-sticks, personal white board, 1 die (per pair)

T: Count the number of cubes in your stick. How many?

S: 6.

T: Break 2 cubes off the end of your stick, and put them in your lap. How many cubes do you still have left in your hand?

S: 4.

T: Tell me a number sentence about what you just did.

S: 6 take away 2 equals 4.

T: Draw a picture to show what you did. Draw your 6 cubes. Now, cross off 2 to show the ones you broke off. Count the ones that are left. Write a number sentence to tell about your cubes. (Allow time for drawing and creation of the number sentence. Circulate to assist students who still need additional help.) Would anyone like to share her number sentence with the class?

S: $6 - 2 = 4$.

T: Put your stick back together, and we will make a number bond about what we just did. You had 2 cubes and 4 cubes. How many together?

S: 6.

T: (Demonstrate the number bond on the board.) Then, you took 2 away. (Cover part of the number bond.) How many were left?

S: 4.

T: Write the number bond on your personal white board. You can cross out the part of 2 to show what you did.
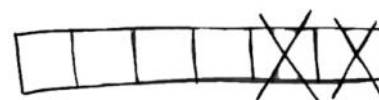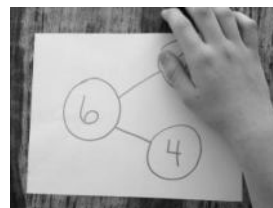
NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

For students with disabilities, consider breaking down the steps of the lesson while they work: "Draw your 6 cubes. Now, cross out 2. Let's count what's left: 1, 2, 3, 4. Show me how you write the number sentence." Practice with more problems until students feel confident enough to work independently.

Repeat the exercise several times with varying subtrahends. Each time, allow students to record the action, the number bond, and the number sentence on their personal white boards.

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T: Put your cubes away. We learned another way to show 6 this year with our 5-groups. Does anyone remember how we could draw 6 the 5-group way? (Allow students to offer guidance in creating the representation on the board.)

T: Let's roll the die to see how many we should take away from our 6. (Demonstrate.) How many?

S: 3.

T: I will cross off 3 to show the ones we are taking away. (Demonstrate.) How many are left?

S: 3.

T: What would my number sentence be?

S: 6 – 3 = 3.

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.)

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T: On your board, draw the 5-group for the number 6. 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 number, and work with your partner to write the number bond and the number sentence. Let's see how many different number sentences we can find! (Circulate during the activity to ensure understanding and correct representation of the 5-group situations, number bonds, and equations.)

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

S: 6 – 2 = 4. → We got 6 – 5 = 1. → What about 6 – 1 = 5? → We found 6 – 3 = 3 again.
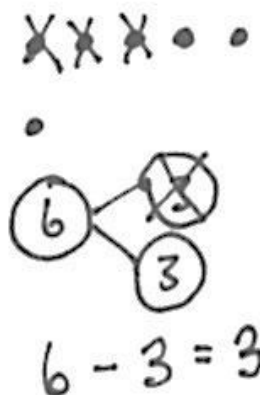
Problem Set (10 minutes)

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

Student Debrief (8 minutes)

Lesson Objective: Decompose the number 6 using 5-group drawings by breaking off or removing 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.

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

- In the Problem Set, what did your number bond and number sentence look like with the hats? Did your partner's number bond and number sentence look the same as yours?

- Look at the snowflakes. Show a partner which snowflakes you crossed out. Can you tell your partner which snowflakes the other numbers in the number sentence are talking about?

- Did drawing the 5-group help you to cross out the objects and easily count how many were left? Why?

- What are some of the take away number sentences you found for 6?

- How do these make you think about the ways we made 6 in our number bonds before?

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Complete the number bond.

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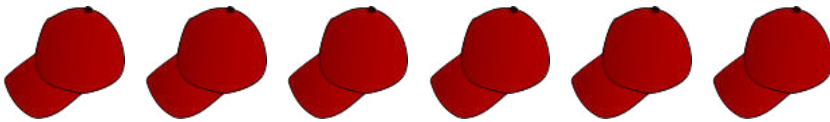
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Complete the number bond.

□ ← 1, 1	□ ← 2, 3
2, 1 → □	4, 1 → □
1, 3 → □	□, □ → 3
□ ← 2, 2	5 → □, □

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Name _____   Date _____

Fill in the number bonds.

Cross out 1 hat.

6 – 1 = 5
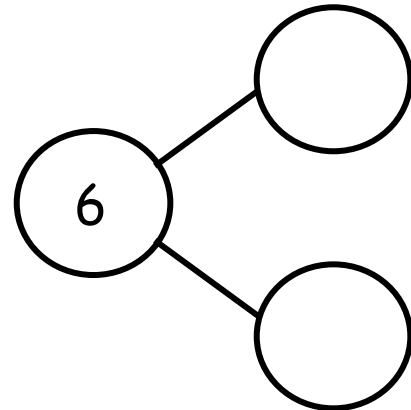
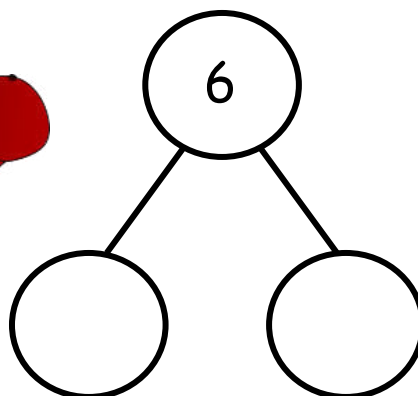Cross out 5 snowflakes.

6 – 5 = 1
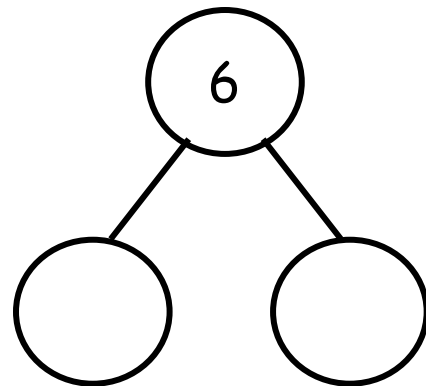
Cross out 2 snowflakes.

6 – 2 = 4

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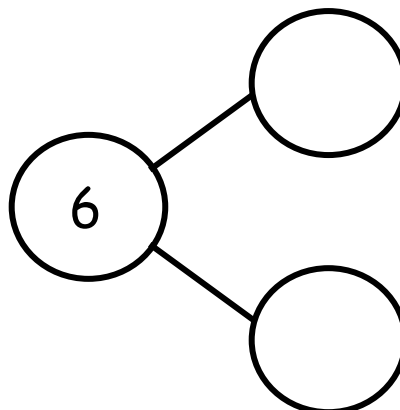**214**
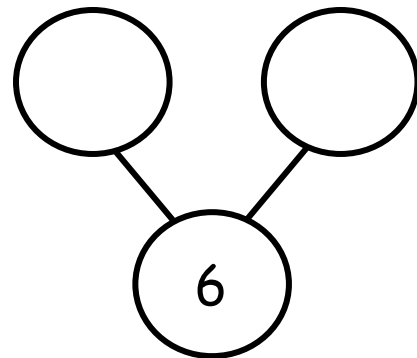
Fill in the number sentences and the number bonds.

Take away 3 hats.

$6 - \boxed{} = \boxed{}$

Take away 4 cubes.
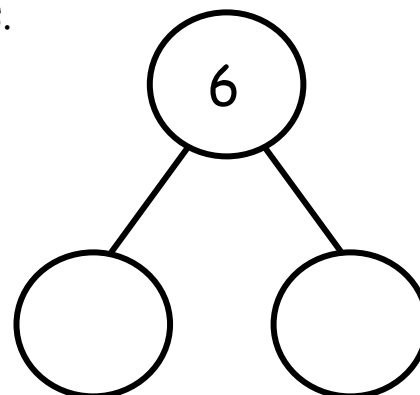
$6 - \boxed{} = \boxed{}$
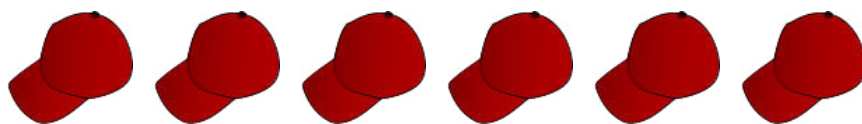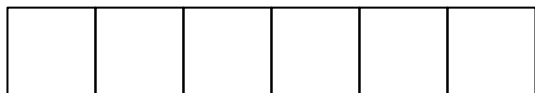
Draw 6 circles in a 5-group. Take away 2 circles.

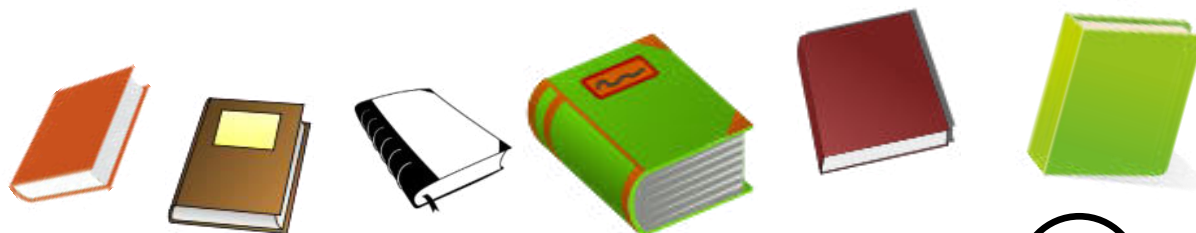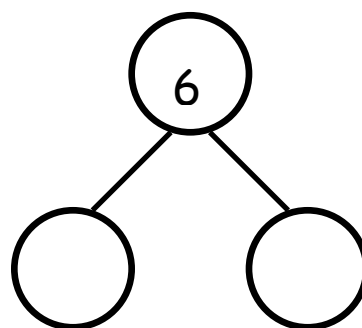$\boxed{} - \boxed{} = \boxed{}$

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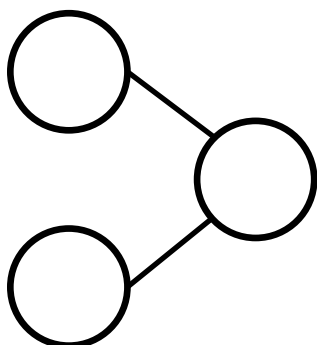
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Name _____   Date _____

Here are 6 books. Cross out 2. How many are left? Fill in the number bond and the number sentence.
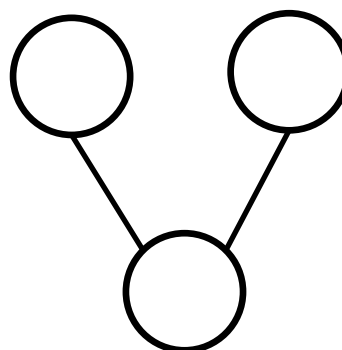
6 - ☐ = ☐

6

Draw 6 stars. Cross out 4. Fill in the number sentence and the number bond.

☐ ☐ ☐

Draw 6 objects. Cross out 5. Fill in the number sentence and the number bond.

☐ - ☐ = ☐

On the back of your paper, draw 6 triangles. Cross out 1. Write a number sentence, and draw a number bond to match.

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