

Week 2 Lesson 2 Represent number bonds with composition and decomposition story situations.

Standard(s) Covered:

K.OA.A.1 Represent addition and subtraction with objects, fingers, mental images, drawings, sounds, acting out situations, verbal explanations, expressions, or equations.

K.OA.A.2 Add and subtract within 10 to solve contextual problems using objects or drawings to represent the problem.

K.OA.A.3 Decompose numbers less than or equal to 10 into addend pairs in more than one way (e.g., $5 = 2 + 3$ and $5 = 4 + 1$) by using objects or drawings. Record each decomposition using a drawing or writing an equation.

Lesson Structure

Activity 1 Morning Foundational Math Talks	30 minutes
Video Play Time	22 minutes
Activity 1 Application Problem	5 minutes
Activity 2 Concept Development	25 minutes
Student Debrief	10 minutes
Exit Ticket	3 minutes
Additional Practice	10 minutes

Activity #1 Morning Foundational Math Talks

We will continue developing a routine for you to begin each math lesson with. The Foundational Math Talks will focus on the following Kindergarten standards from the Counting and Cardinality and Operations and Algebraic Thinking Domains.

K.CC.A.1 Count to 100 by ones, fives, and tens. Count backward from 10.

K.CC.A.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

K.CC.A.3 Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20.

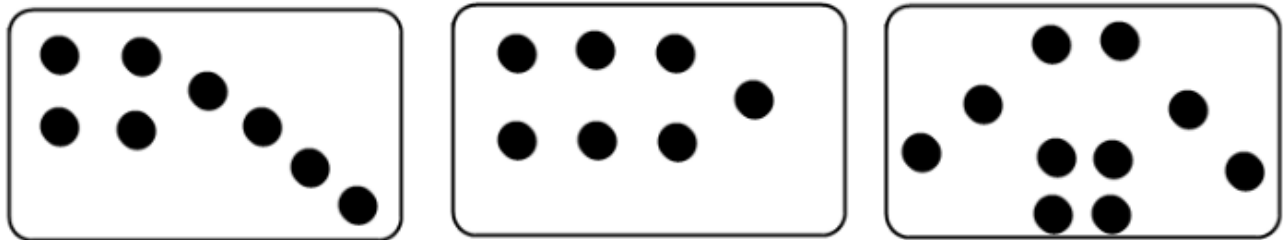
K.OA.A.4 Find the number that makes 10, when added to any given number, from 1 to 9 using objects or drawings. Record the answer using a drawing or writing an equation.

We will begin with the number game! This is great for listening and counting in various ways. Everyone stands up around a meeting rug, or in a circle. Today, we will count to 50. We start counting and each person counts on as we go around the circle. If you say the designated number of the day (50), then you sit down. The counting starts all over again with the students that are still standing, and is continued until 1 person is left standing. Be sure that you are involved in playing the game too!

Another game that we can play during our morning activity is “I Have Who Has” The teacher passes out cards in random order with a number written on it. The first student says “I have ____ who has ____ (the number that comes after their number),” The student that has that card goes next and the game continues until each student and teacher has read his/her card. Today, you will need cards numbered 1-20 or at least one card for each player.

After playing the “I Have Who Has” game, students should then form a human number line by ordering themselves with their cards from 1-20. Once they are done, practice counting again and have each student take one step forward as you say the number they are holding.

The next activity for Morning Math Talks is using number dots. Students need to see each of the dot patterns below, one at a time. Then the teacher calls on different students to explain how many dots they saw, and how they saw them. The teacher can use a white board, or a piece of paper that has dots pre-drawn on it. This is also a time where teachers can model equations as students explain their thinking.



The final activity for Morning Foundational Math Talks is a great transitional game once you are ready for students to their desk for the next activity. Teachers can use a large foam die, number cards, ten frame cards, etc. to show one addend and have each student tell you the number needed to make a sum of 10. This is a great transitional game once you are ready for students to go to their desk for the next activity.

Lesson Video <https://www.youtube.com/watch?v=GMJCCaeOSCY>

Activity #1 Application Problem

Materials: (S) 5-stick of linking cubes, pencil, paper

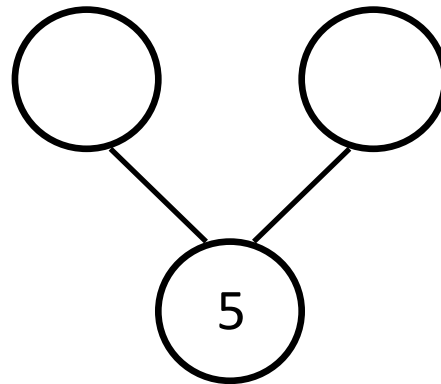
Play a game called Snap with your friend! Show him your 5-stick. Now, put your linking cube stick behind your back. When he says, “Snap!” quickly break your linking stick into two parts. Show him one of the parts. Can he guess the other one? If not, show him. Draw a number bond to show what you did with your cubes. Then, it is his turn! If you have time, play it with a 4-stick, a 3-stick, and a 2-stick!

Teacher Notes:

- This game serves as a concrete review of the composition and decomposition of the numbers to 5, as well as a chance to practice creating number bonds.

Activity #2 Concept Development

Materials: (T) White board and markers (S) 5-stick



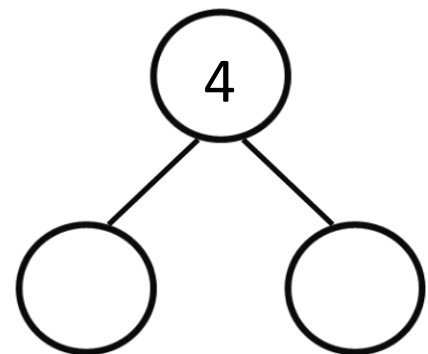
- T: (Draw the number bond on the white board.) Oh, no! I have a number bond and no story! Who could help me? Use your 5-sticks to help me make up a story. Think about the missing numbers, and let's talk about a story to go with your picture. Does anyone have an idea?
- S: There were 5 red and green balls. 2 were red. 3 were green. → There was 1 horse sleeping, and 4 horses came running up. Then, there were 5 horses. → (Various answers might move from parts to whole or whole to parts. Accept all responses. We are not encouraging a rigid interpretation of the number bond but rather want students to think flexibly. What matters is that within their stories, the sum of the parts equals the whole, though not using those terms.)
- T: That's a great story! Let's fill in the number bond. (Demonstrate.) You are right. 5 is the same as 2 and 3 together! We can also write the story in a number sentence like this: $5 = 2 + 3$.

T: Let's try one more. (Draw the number bond to the right on the board.)

- T: Oh, no! We have another number bond with empty circles! Could you use your linking cubes to help us solve the problem? Could one of my friends help me make up a story to go with this picture?

S: There were 2 sleeping cats and 2 awake cats. How many cats were there in all? → There were 4 cats sleeping. 2 woke up, and 2 were still sleeping.

T: Yes! 2 sleeping cats and 2 awake cats make 4 cats in all. Let's fill in our number bond. (Demonstrate.) We could also write it in a number sentence like this: $2 + 2 = 4$.



Teacher Notes:

- Repeat the exercise for several more number bonds for 5, 4, 3, and 2 before proceeding to the Problem Set. Allow students to share and discuss their stories. Model the associated number sentences in a

casual manner, but do not focus on them. Students begin formal work with expressions (e.g., $3 + 4$) and equations (e.g., $3 + 4 = 7$) in subsequent lessons.

- To help English language learners, ask them to repeat the term *number sentence*, and post it on the math word wall to be able to point to while teaching. Ask students to give an example of a number sentence, and ask them, “What do we call $2 + 3 = 5$?” With practice, students feel more confident to participate in the lessons.

Problem Set (10 minutes)

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

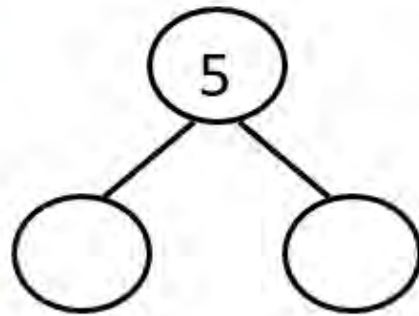
Teacher Notes:

As students are working, circulate to provide support. Ask questions like those used during the Activity. The purpose of this time is to support students as they shift to working problems independently.

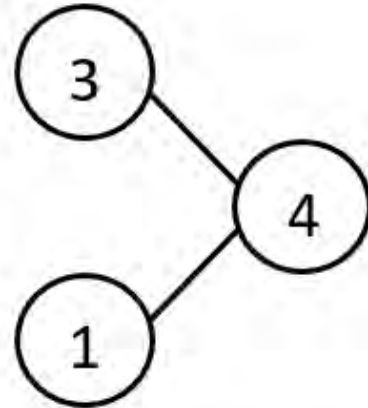
Problem Set

Name _____ Date _____

Fill in the number bond. Tell a story about the birds to your friend.

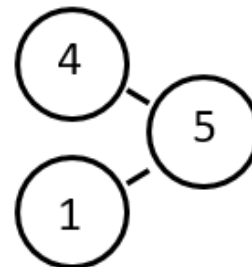
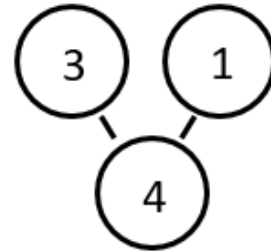
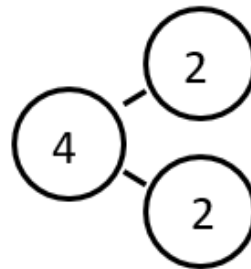
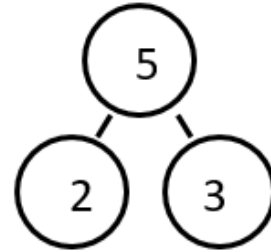
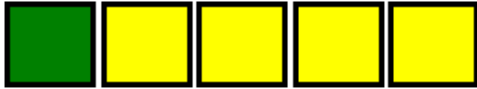


Tell a story that matches the number bond. Draw pictures that match your story.



Tell a story. Draw pictures and a number bond that match your story.

The squares below represent cube sticks. Draw a line to match the number bond to the cube stick.



Student Debrief

Lesson Objective: Represent number bonds with composition and decomposition story situations.

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.

- How did you decide what numbers to use for your number story?
- Do your stories and the number bonds tell the same thing?
- How were your number stories different from your friends'?
- How did the Snap game connect to today's lesson?
- Look at the Problem Set with the cubes. Look at the first two sticks. How many cubes are in each stick? (5.) Look at the matching number bond. Are the numbers the same in each bond? There are 5 cubes in each stick, so why are the parts different?

Fill in the number bond. Tell a story about the birds to your friend.



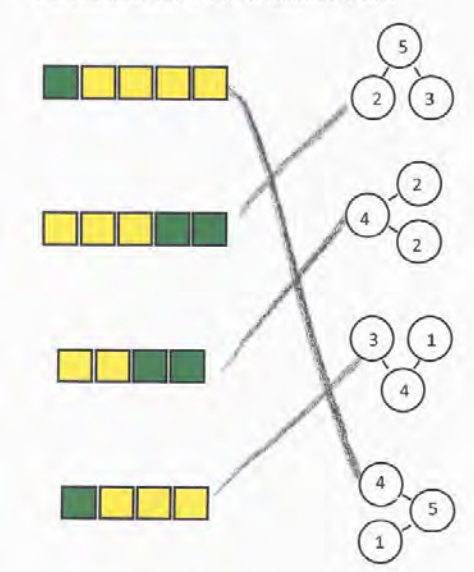
Tell a story that matches the number bond. Draw pictures that match your story.



Tell a story. Draw pictures and a number bond that match your story.



Draw a line to match the number bond with the cube stick.



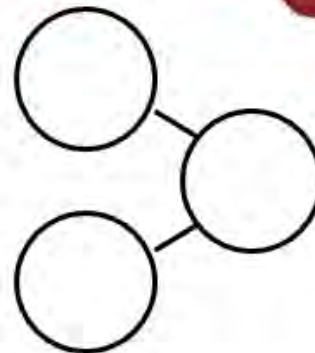
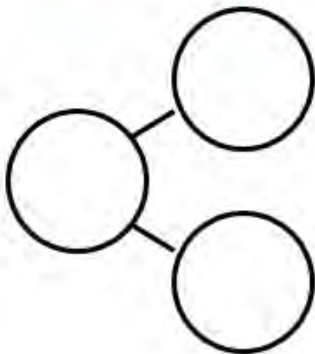
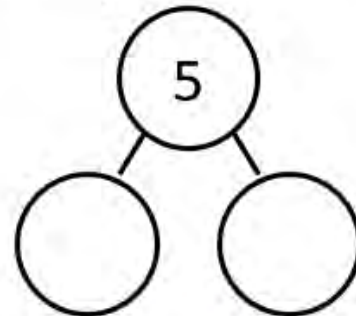
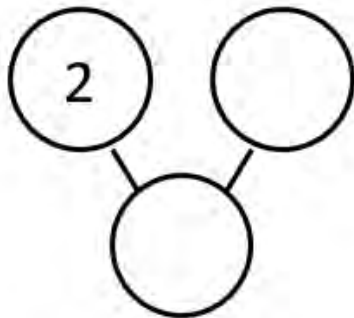
Exit Ticket

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Exit Ticket

Name _____ Date _____

Write numbers to fill in the number bonds.

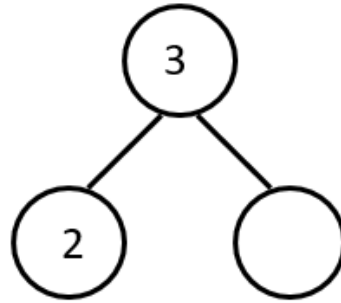


Additional Practice

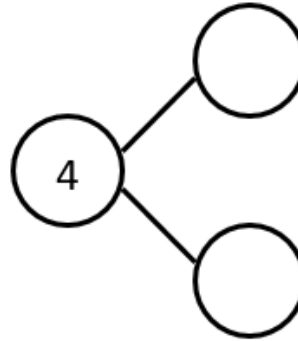
Name _____ Date _____

Tell a story. Complete the number bonds. Draw pictures that match your story and number bonds

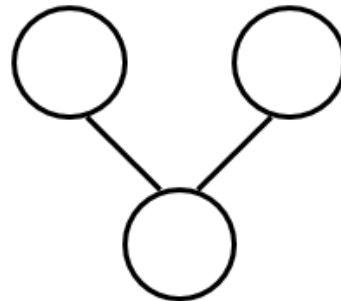
Draw some balls for your story.



Draw some crayons for your story.



Draw some shapes for your story.



On the back of your paper, draw a picture and make a number bond.