## Week 2 Lesson 4: Solve *both addends unknown* word problems to 8 to find addition patterns in number pairs.

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

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| Activity 1 Morning Foundational Math Talks | 30 minutes |
| Video Play Time | 28 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.

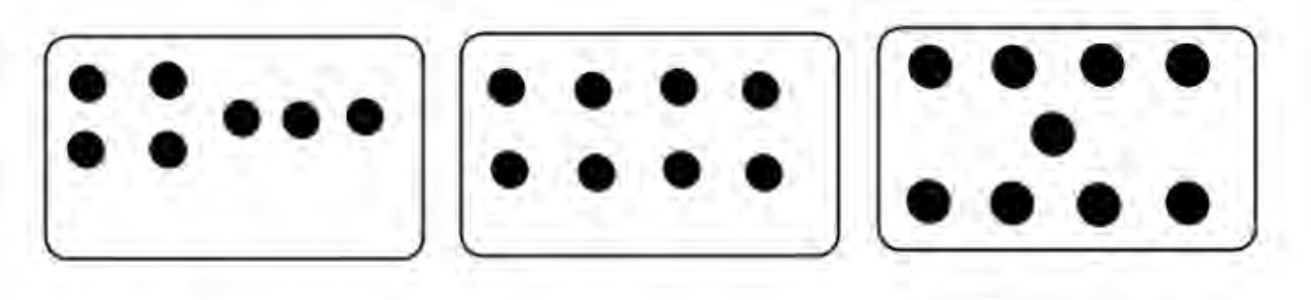
**K.OA.A.4** Find the number that makes 10, when added to any given number, from 1 to 9 using objects or drawings. Record the answer using a drawing or writing an equation.

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=qa5oepQ2z3o

## Activity #1 Application Problem

Materials: (S) 10 linking cubes

Note: A set of 10 linking cubes for each student deliberately gives students more cubes than necessary to model the story so that they can select those needed from the larger set.

3 airplanes were flying in the air. Use your cubes to show the planes. 3 more airplanes came to join the flying fun. Show the airplanes with your cubes.

Now, with your cubes, show how many airplanes were flying in the air. Talk to your partner about what the number sentence would look like.

Teacher Notes:

- This problem sets the stage for solving *add to with result unknown* word problems in today's lesson.
- Help students, especially English language learners, to have meaningful conversations with each other by teaching them to ask questions, such as "Do you agree?" and "Why did you do that?" Teaching students to ask meaningful questions of each other extends their sharing and holds them accountable for sharing their thinking.

## Activity #2 Concept Development

Materials: (T) Large foam die or substitute (S) Personal white board, dry erase markers in black, red, and green (if not available, use paper and crayons), train (Lesson 14 Template) (with train image cut)

T: Listen to my silly story: The students were playing with 7 balls on the playground. They accidentally kicked some of the balls into a big puddle, and now, some are muddy! What is one way the balls might look now? Turn and talk to your partner about your ideas. (Allow time for discussion.)

T: Let's make a math problem about my silly story. Draw 7 balls on your personal white board. (Demonstrate drawing empty circles.) Make some muddy. (Do not draw mud on any of the circles. Let students develop partners of their own.) Student A, show us your drawing. How many of your balls got muddy?

S: 3.

T: (Fill in 3 circles on the drawing.) Could we make a number sentence for Student A's picture?

T: How many balls in all?

S: 7.

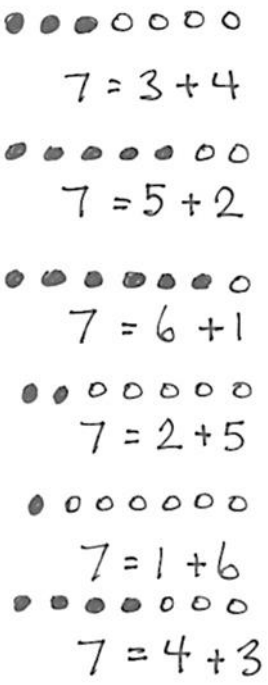
T: How many were muddy?

S: 3.

T: How many were clean?

S: 4.

T: Read the number sentence with me: 7 = 3 + 4. Write the number sentence on your board, too! (Circulate to ensure understanding.)




T: Did anyone have a different picture of the balls?

S: I do! I drew 6 muddy balls and 1 clean ball. → I have 2 muddy balls. (Other varied answers.)

T: Go ahead and write a number sentence to match your picture. Start with the 7. (Circulate to ensure understanding.) If you finish early, figure out another way the balls might have looked, and write another number sentence to match that.

After students have worked, quickly represent all the combinations. Write each one on a separate paper to sequence in the Student Debrief.

T: Erase your board, and listen to my next little story. Close your eyes while you listen and think, and then, I will have you draw your picture on your board.

T: Cora went to a birthday party. At the party, she saw a dish of 8 jelly beans. Some were red, and some were green. Open your eyes, and draw a picture of the jelly beans. (Allow time for drawing.) Who would like to share his picture with the class first? Go ahead, Student A.

S: I drew 1 red jelly bean and 7 green ones.

T: Let's use your idea to write our number sentence. How would I complete the first one? How many jelly beans did Cora have in all?

S: 8.

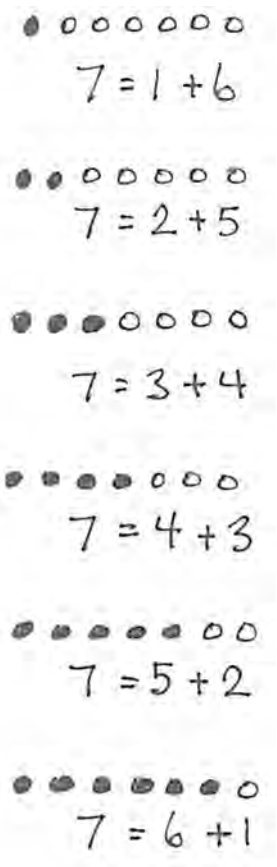
T: (Fill in the equation on the train template). How many were red? (1.) How many were green? (7.) Read with me: 8 = 1 + 7.

T: What if I put the number of green jelly beans first instead, like this: 7 + 1 = 8 (demonstrate). Would that be fair?

S: Yes! It doesn't matter which color you put first. → There are still the same number of jelly beans in the dish.

T: Thank you for sharing your idea, Student A! Look carefully at your own pictures now, and see if you can make some number sentences that show your own idea. Turn and talk to your partner about your work when you are done. Do your jelly beans look the same? (Allow time for sharing and discussion.)

T: Who would like to share another picture and idea with the class? If your picture was different, could it still be true? (Allow time for sharing and discussion.)




Teacher Notes:

- For students working below grade level, repeat the lesson with numbers to 5. Watch students as they are asked to solve a *put together with both addends unknown* problem, and guide them through it step by step: "5 red and green crayons are on the desk. Draw and color crayons using green and red markers. Now, let's fill in the number sentence."

## Problem Set (10 minutes)

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

Teacher Notes:

- The adults should read each problem aloud to their groups and watch to ensure understanding during the completion of the exercise.
- Allow students to use concrete objects if needed.

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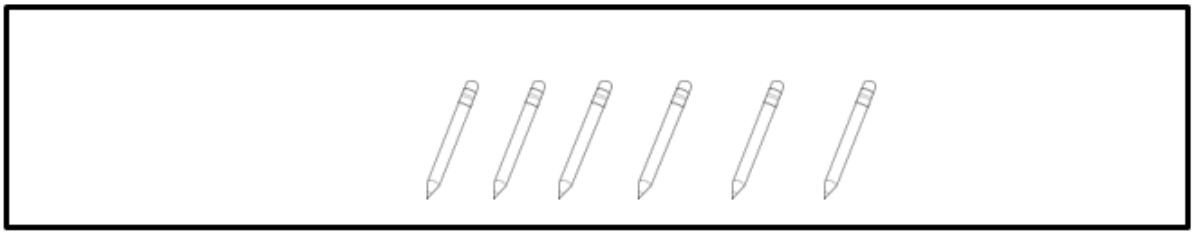
## Problem Set

Name _____ Date _____

Devin has 6 Spiderman pencils. He put some in his desk and the rest in his pencil box. Write a number sentence to show how many pencils Devin might have in his desk and pencil box.



6 = ☐ + ☐

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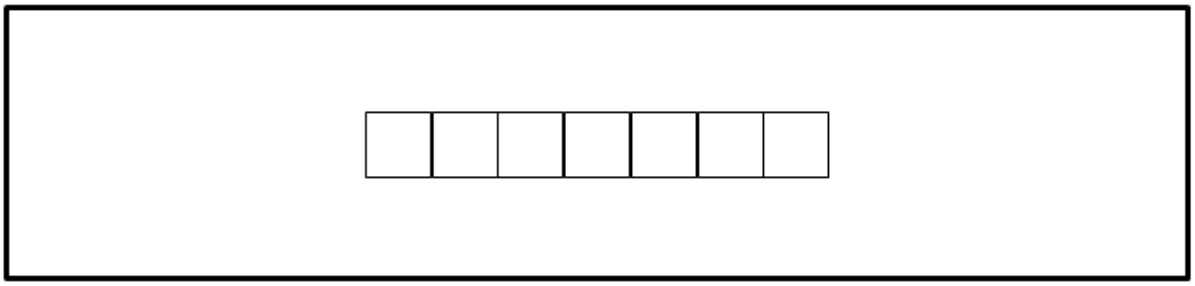
Shania made 7 necklaces. She wore some of the necklaces and put the rest in her jewelry box. Use the linking cubes to help you think about how many necklaces Shania might have on and how many are in her jewelry box. Then, complete the number sentences.



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☐ = ☐ + ☐

Tommy planted 8 flowers. He planted some in his garden and some in flowerpots. Draw how Tommy may have planted the flowers. Fill in the number sentences to match your picture.

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☐ + ☐ = ☐

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Create your own story, and draw a picture. Fill in the number sentences. Tell your story to a friend.

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☐ = ☐ + ☐

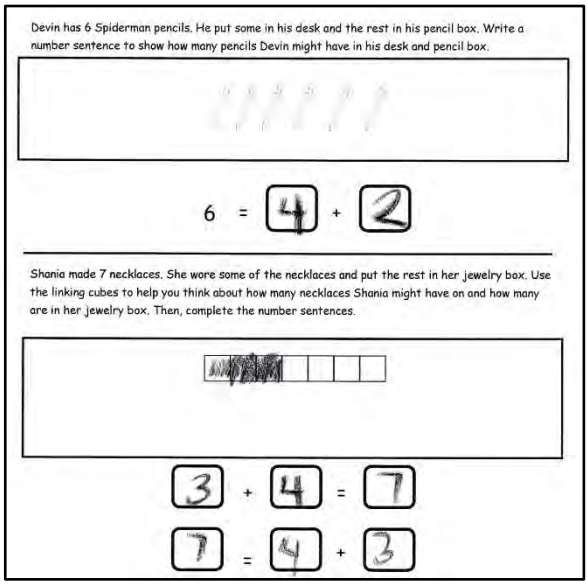
# Student Debrief

**Lesson Objective:** Solve *both addends unknown* word problems to 8 to find addition patterns in number pairs.

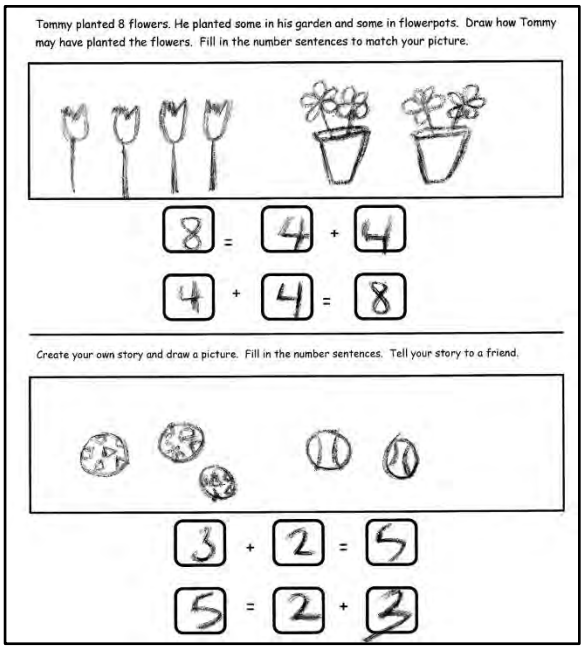
The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

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.




- Talk about the pencils on your Problem Set. Did you and your neighbor put the same amount in the desk and the pencil box?
- How did the cubes help you to think about Shania's necklaces?
- What was the difference between the two types of number sentences we made for each picture on the board?
- When we were drawing our jelly bean number sentences, did it matter which color we wrote about first?
- Could different pictures about the 8 jelly beans still be true? Why?
- Let's put our muddy ball number sentences and pictures in order. I'll put this one first: 7 = 1 + 6. Next comes 7 = 2 + 5 (move the cards). Talk to your partner. Which number sentence will come next in our pattern?
- Talk to your partner. What patterns do you notice?
- What was the same about all of our problems today? (There was more than one way to solve and write the problems.)



## 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 _____

There are 7 bears. 3 bears have bowties. 4 bears have hearts. Fill in the number sentences and the number bond.

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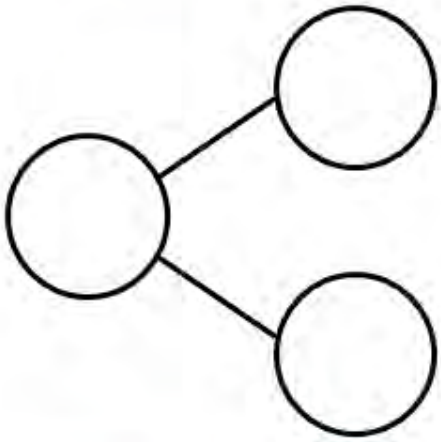

5 bears have scarves on, and 2 do not. There are 7 bears.
Write a number sentence that tells about the bears.

☐ = ☐ + ☐

On the back of your paper, draw a picture about the 7 bears. Write a number sentence, and make a number bond to go with it.

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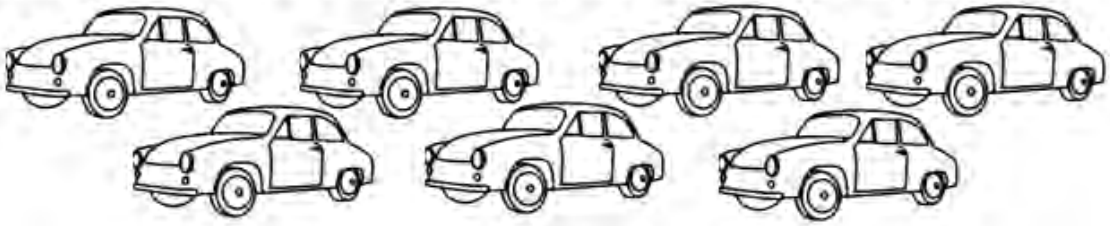
## Additional Practice

Name _____ Date _____

Ted has 7 toy cars. Color some cars red and the rest blue. Write a number sentence that shows how many are red and how many are blue.



7 = ☐ + ☐

☐ + ☐ = ☐

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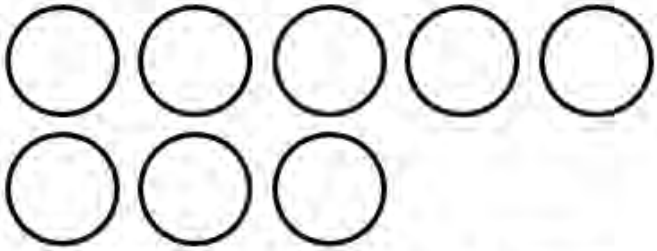
Chuck has 8 balls. Some are red, and the rest are blue. Color to show Chuck's balls. Fill in the number sentences.



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