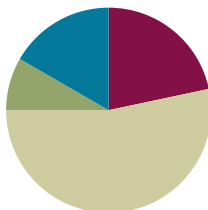


## Lesson 31

**Objective:** Solve *take from with change unknown* math stories with drawings.

### Suggested Lesson Structure

■ Fluency Practice	(13 minutes)
■ Application Problem	(5 minutes)
■ Concept Development	(32 minutes)
■ Student Debrief	(10 minutes)
<b>Total Time</b>	<b>(60 minutes)</b>



### Fluency Practice (13 minutes)

- Beep Counting by Tens **1.NBT.5** (3 minutes)
- Penny Drop: Count On from 10 **1.OA.6** (5 minutes)
- Number Bond Dash: 10 **1.OA.6** (5 minutes)

### Beep Counting by Tens (3 minutes)

Note: This fluency activity helps students recognize patterns while building fluency with adding and subtracting 10.

Say a series of three numbers but replace one of the numbers with the word *beep*. When signaled, students say the *beep* number. (See Lesson 28.)

Suggested sequence types are basic multiples of 10 (10, 20, beep; 80, 90, beep; etc.) and 10 more with some ones (25, 35, beep; 48, 58, beep; etc.). If students are ready, try counting backwards or placing the beep first or second in the sequence.

### Penny Drop: Count on from 10 (5 minutes)

Materials: (T) 15 pennies, 1 can

Note: This activity reviews the Kindergarten standards of identifying 10 ones and some additional ones. This concept is foundational for Module 2, where students use the make ten strategy to add within 20.

Tell students that 10 pennies are in the can. Have students close their eyes and listen. Drop 1 to 5 pennies in the can, one at a time. Ask students to open their eyes and tell you how many pennies are in the can now.



#### NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Scaffold tasks by carefully selecting numbers that are most appropriate for learners. Some students would benefit from a longer sequence to make the pattern more apparent. Challenge higher-level students by changing the placement of the beeps or using more challenging number sequences.

**Number Bond Dash: 10 (5 minutes)**

Materials: (T) Stopwatch or timer (S) Number Bond Dash 10 (Lesson 9 Fluency Template), marker to correct work

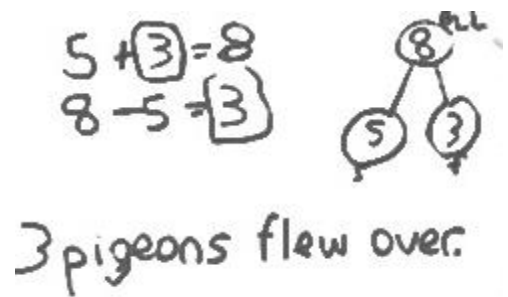
Note: Reviewing number bonds allows students to build and maintain fluency with addition and subtraction facts within 10.

Follow the procedure for the Number Bond Dash from Lesson 5 Fluency Practice. Remember that today is the second day with the Number Bond Dash 10. Students should recall their scores from the previous lesson to celebrate improvement.

**Application Problem (5 minutes)**

Shanika saw 5 pigeons on the roof. Some more pigeons flew onto the roof. She then counted 8 pigeons. How many pigeons flew over?

Write a number bond and both addition and subtraction number sentences to match the story. Box the solution in your number sentences, and include a statement to answer the question.



Note: This problem applies learning from Lesson 30, where students use strategies to solve *add to with change unknown* problems. By writing both addition and subtraction number sentences, students continue to strengthen their understanding of the relationship between the operations.

**Concept Development (32 minutes)**

Materials: (T) Books of different sizes (S) Personal white board, yellow colored pencil

- T: I borrowed 7 books from the library. On my way home, I lent some of the books to a friend. Will my backpack have more or *fewer* books than 7? How do you know?
- S: Fewer books because you took away some books to give to your friend.
- T: You're right! There are 5 books still in the backpack. How many books did I lend?
- T: Let's make a number bond to find out. On your board, make and fill in the number bond. What does 7 stand for?
- S: The books you borrowed from the library.
- T: Is that a part or the total number of books in the story?
- S: The total.
- T/S: (Fill in 7 on the number bond and label *B* for borrowed books.)
- T: What else do you know?
- S: You have 5 books left.

T: Are these 5 books part of the total number of books?

S: Yes.

T/S: (Fill in 5 and label  $L$  for leftover books.)

T: What about this part box? What does it stand for?

S: That's the mystery number. It stands for how many books you gave to your friend.

T: Let's write a number sentence. How did the story begin?

S: You borrowed 7 books.

T: (Write 7.) What happened next? How can we continue our number sentence?

S: You gave away some books, so use *minus*. → Write *7 minus box*, because we don't know how many books you gave away.

T: (Write  $7 - \underline{\hspace{1cm}}$ .) What happened last? How can we continue our number sentence?

S: You ended up with 5 books. Seven minus something is 5.

T: (Writes  $7 - \underline{\hspace{1cm}} = 5$ .)

T: Let's make a math drawing to show what we know so far.

S: (Draw 7 circles.)

T: Group the circles that show how many books I still have.

S: (Group 5 circles together.)

T: What are these books that we didn't group? (Gesture to 2 remaining books.)

S: The books you gave to your friend.

T: How can we show that I gave away these books?

S: Say, goodbye 2! Make the line look like one big subtraction sign.

T: Write a number sentence to show what you just did.

S: (Write  $7 - 2 = 5$ .)

T: How many books did I give away?

S: You gave away 2 books.

T: Circle the part of the number sentence that shows this answer.

S: (Circle 2.)

MP.6

Continue to tell *take from with change unknown* stories using the following suggested sequence and scenarios:

- Hansel and Gretel have a bag with 8 pieces of bread. They drop some on their path and have 3 pieces remaining.
- Nine children are playing hide and seek. Some went away to hide. Four children can still be seen.
- We caught 9 fireflies. Some flew away. Six fireflies are left in the jar.

## Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to modify the assignment by specifying which problems they work on first. Some problems do not specify a method for solving. Students solve these problems using the RDW approach used for Application Problems.

On this Problem Set, students should begin with Problems 1–3, possibly leaving Problem 4 to the end if there is still time.

## Student Debrief (10 minutes)

**Lesson Objective:** Solve *take from with change unknown* math stories with drawings.

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.

You may choose to use any combination of the questions below to lead the discussion.


- What pattern did you notice about all of our story problems today?
- What new math strategy did we use to solve our story problems today?
- One at a time, share some student drawings that have particular strengths (e.g., use of simple circles or squares, picture number bonds, straight rows or similarly sized shapes, clear labels). What do you notice about this math drawing? What qualities make it useful for solving math problems?
- Today, we did not include addition sentences on our Problem Set. How does the number bond help you continue to use addition to help you think about subtraction?

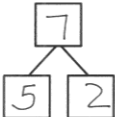
NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 31 Problem Set 1•1

Name Maria Date \_\_\_\_\_


Make a math drawing and circle the part you know. Cross out the unknown part.  
Complete the number sentence and number bond.

1. Kate made 7 cookies. Bill ate some. Now Kate has 5 cookies.  
How many cookies did Bill eat?




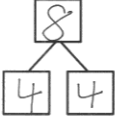


Bill ate 2 cookies.




2. On Monday Tim had 8 pencils. Tuesday, he lost some pencils.  
On Wednesday, he has 4 pencils. How many pencils did Tim lose?





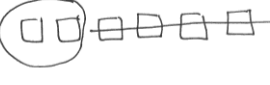
Tim lost 4 pencils.

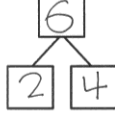


COMMON CORE Lesson 31: Solve take from with change unknown math stories as a context for counting on by drawing, writing equations, and making statements of the solution. engage<sup>ny</sup> 1.C.40


NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 31 Problem Set 1•1

3. A store had 6 shirts on the rack. Now, there are 2 shirts on the rack.  
How many shirts were sold?




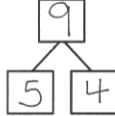


4 shirts were sold.




4. There were 9 children at the park. Some children went inside. Five children stayed. How many children went inside?





4 children went inside.



COMMON CORE Lesson 31: Solve take from with change unknown math stories with drawings. engage<sup>ny</sup> 1.H.41

- Explain to your partner how you can use addition to solve Problem 1. Explain how you can use counting on to solve addition and subtraction. How can you use counting on or counting back to help you solve subtraction problems?
- Is counting on or counting back for Problem 1 more efficient? Explain your thinking.
- Look at your Application Problem. How could making a quick math drawing help you solve it?

**Exit Ticket (3 minutes)**

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help you assess the students' understanding of the concepts that were presented in the lesson today and plan more effectively for future lessons. You may read the questions aloud to the students.

Name \_\_\_\_\_

Date \_\_\_\_\_

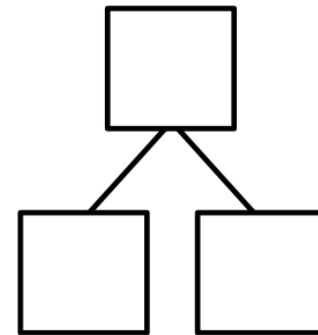
Make a math drawing, and circle the part you know. Cross out the unknown part.

Complete the number sentence and number bond.



Sample:  $3 - 1 = 2$

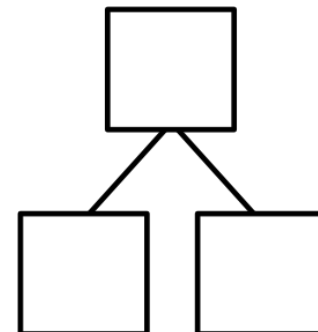
1. Kate made 7 cookies. Bill ate some. Now, Kate has 5 cookies.  
How many cookies did Bill eat?



$$\boxed{7} \ominus \boxed{\phantom{0}} = \boxed{\phantom{0}}$$

Bill ate \_\_\_\_\_ cookies.

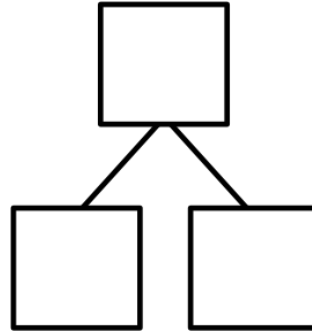
2. On Monday, Tim had 8 pencils. On Tuesday, he lost some pencils.  
On Wednesday, he has 4 pencils. How many pencils did Tim lose?



$$\boxed{\phantom{0}} \ominus \boxed{\phantom{0}} = \boxed{\phantom{0}}$$

Tim lost \_\_\_\_\_ pencils.

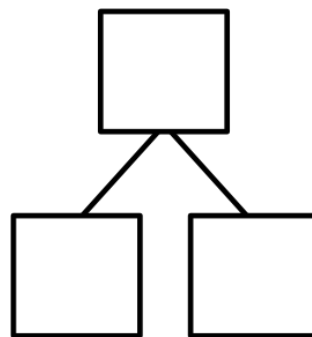
3. A store had 6 shirts on the rack. Now, there are 2 shirts on the rack.  
How many shirts were sold?



\_\_\_\_\_ shirts were sold.

$$\square - \square = \square$$

4. There were 9 children at the park. Some children went inside. Five children stayed. How many children went inside?



\_\_\_\_\_ children went inside.

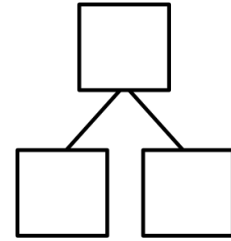
$$\square - \square = \square$$

Name \_\_\_\_\_

Date \_\_\_\_\_

Make a math drawing, and circle the part you know. Cross out the unknown part.  
Complete the number sentence and number bond.

Deb blows up 9 balloons. Some balloons popped. Three balloons are left.  
How many balloons popped?



\_\_\_\_\_ balloons popped.

$$\square - \square = \square$$



Name \_\_\_\_\_

Date \_\_\_\_\_

Make a math drawing, and circle the part you know.  
Cross out the unknown part.  
Complete the number sentence and number bond.

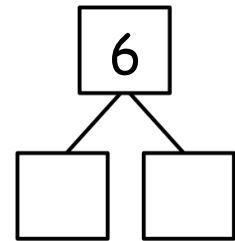


Sample:  $3 - 1 = 2$

1. Missy gets 6 presents for her birthday. She unwraps some. Four are still wrapped. How many presents did she unwrap?

Missy unwrapped \_\_\_\_\_ presents.

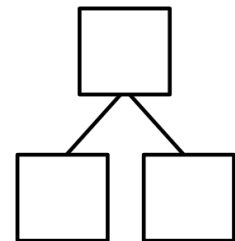
$$\boxed{6} \bigcirc - \boxed{\phantom{0}} = \boxed{\phantom{0}}$$



2. Ann has a box of 8 markers. Some fall on the floor. Six are still in the box. How many markers fell on the floor?

\_\_\_\_\_ markers fell on the floor.

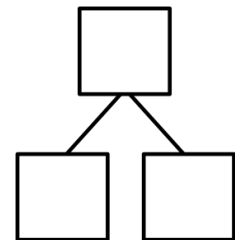
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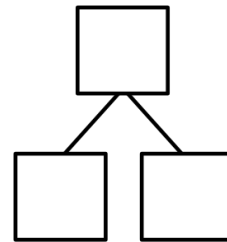
3. Nick makes 7 cupcakes for his friends. Some cupcakes were eaten. Now, there are 5 left. How many cupcakes were eaten?

\_\_\_\_\_ cupcakes were eaten.

$$\boxed{\phantom{0}} \bigcirc - \boxed{\phantom{0}} = \boxed{\phantom{0}}$$



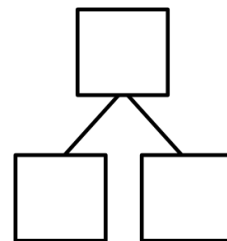
4. A dog has 8 bones. He hides some. He still has 5 bones. How many bones are hidden?



\_\_\_\_\_ bones are hidden.

$$\square - \bigcirc = \square$$

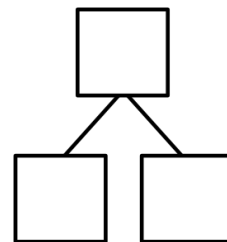
5. The cafeteria table can seat 10 students. Some of the seats are taken. Seven seats are empty. How many seats are taken?



\_\_\_\_\_ seats are taken.

$$\square - \bigcirc = \square$$

6. Ron has 10 sticks of gum. He gives one stick to each of his friends. Now, he has 3 sticks of gum left. How many friends did Ron share with?



Ron shared with \_\_\_\_\_ friends.

$$\square - \bigcirc = \square$$