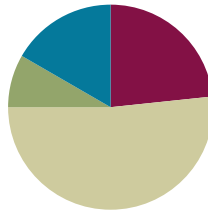# Lesson 17

Objective: Model subtraction of 8 from teen numbers.

Suggested Lesson Structure

- ■ Fluency Practice   (14 minutes)
- ■ Application Problem   (5 minutes)
- ■ Concept Development   (31 minutes)
- ■ Student Debrief   (10 minutes)

  Total Time   **(60 minutes)**

Fluency Practice (14 minutes)

- ▪ Subtract 9 **1.OA.6**   (4 minutes)
- ▪ Sprint: Subtract 9 **1.OA.6**   (10 minutes)

Subtract 9 (4 minutes)

Materials: (T) Subtract 9 Flashcards

Note: This fluency activity reviews the take from ten subtraction strategy when the subtrahend is 9.

Show a Subtract 9 Flashcard (e.g., 12 – 9).

  T: Say 12 the Say Ten way.
  S: Ten 2.
  T: 10 – 9 is ? (Snap).
  S: 1.
  T: 1 + 2 is ? (Point to the 2; snap).
  S: 3.
  T: 12 – 9 is ? (Snap).
 S: 3.

Sprint: Subtract 9 (10 minutes)

Materials: (S) Subtract 9 Sprint

Note: This Sprint reviews the take from ten subtraction strategy when the subtrahend is 9.

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Application Problem (5 minutes)

Gisella had 13 markers in her bag. Eight markers fell out of the bag. How many markers does Gisella have now?

Note: While circulating, notice which students already recognize the application of the take from ten strategy, previously applied only to subtracting 9. Notice which students are crossing off one at a time instead of crossing off 8 quickly. Student strategy choices will be discussed in the debrief.

$$13 - 8 = 5$$

She has 5 markers.
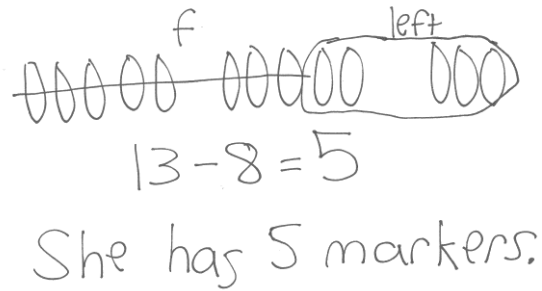
Concept Development (31 minutes)

Materials: (T) Linking cubes of different colors (S) Personal white boards

Note: Using different colored linking cubes will help students realize that not all objects need to be identical in a given set.

Students sit in a semi-circle in the meeting area with their personal white boards.

- T: (Project and read aloud.) Ayan had 15 building blocks. He used 8 of them to make a car. How many blocks were left?
- T: How would you solve this problem? Use your personal white board to show your work.
- S: (As students solve, circulate and observe student strategies.)
- T: How did you solve?
- S: I drew 15 squares. I crossed off 8 and I had 7 pieces left. → I counted on from 8 to 15. Eiiiight, 9, 10, 11, 12, 13, 14, 15. I have 7 fingers up, so 7 blocks. → I used the take from ten strategy. I saw that I can take apart 15 into 10 and 5. I took away 8 from 10 and did 2 + 5 = 7. Seven blocks.
- T: No matter which strategies these students used, did they get the same answer?
- S: Yes!
- T: (Show a stick of 15 cubes of different colors.) Here is a stick of 15 linking cubes to show how many building blocks Ayan had in the beginning. To use the take from ten strategy, let's break this apart into…
- S: 10 and 5.
- T: (Break off and separate into two sticks.) We need to take away…
- S: 8 pieces.
- T: From…
- S: 10.
- T: (Take away 8 from 10.) 10 minus 8 is?

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

It is important to guide students to evaluate their thinking, as well as their partner's during the turn and talk. This provides students an opportunity to evaluate their process and analyze errors.

S: 2.

T: 2 and 5 make…

S: 7.

T: Let's check by using our fingers. Show me 15 fingers. How many imaginary fingers are up?

S: (Show 10 fingers.) 5.

T: Take away 8, all at once.

S: (Show 2 fingers.)

T: How many fingers are up?

S: 2.

T: How many imaginary fingers are there?

S: 5.

T: How many fingers, real and imaginary, are there altogether?

S: 7.

T: What addition sentence helped you solve 15 – 8?

S: 2 + 5 = 7.

> **NOTES ON MULITPLE MEANS OF ACTION AND EXPRESSION:**
>
> Adapt what you expect of certain students depending on their level of understanding. Some students may be ready to move away from draw and circle 10 to just break apart the teen number with a number bond in their work.

Repeat the process following the suggested sequence: 11 – 8, 12 – 8, 14 – 8, 15 – 8, 17 – 8, 18 – 8 (take 8 from 8 rather than 10), and 19 – 8 (take 8 from 9). You may want to use linking cubes to aid student understanding for the first few problems but move towards using fingers. At 18 – 8 and 19 - 8, reintroduce the linking cubes, as they will provide a more clear visual representation for determining from where to quickly subtract 8. If time allows, have students work with a partner and practice subtracting 8 using the take from ten strategy with fingers and writing the addition sentence to help solve.

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.

Student Debrief (10 minutes)

Lesson Objective: Model subtraction of 8 from teen numbers.

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

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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.

- Look at Problem 5. Where did you take 8 from? Why is it wiser to take 8 from 9 than 10?

- Look at the way a student solved Problem 6. How is her solution similar to and different from yours?
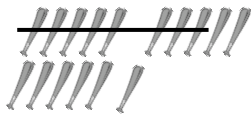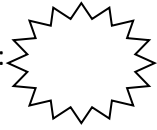

- How can knowing $15 - 9 = 6$ help you solve $15 - 8$? Explain your thinking.

    - When we take from ten to solve these two problems, what is different about how we get our solution? (In $15 - 9$, we add 1 to 5. In $15 - 8$, we add 2 to 5.)

    - How is $15 - 9$ different from $15 - 8$? How much less are we taking away? How would that change the answer? (We took away 1 less, so the answer will have 1 more.) Extension: Following this pattern, how would you solve $15 - 7$?

- Look at the Application Problem. How did you choose to solve it? Explain your thinking. How could the strategy discussed today be used to solve this problem?

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.

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A

Number correct: ___

Name _____   Date _____

*Write the missing number. Pay attention to the addition or subtraction sign.

1	$10 - 9 = \square$		16	$10 - 9 = \square$	
2	$1 + 2 = \square$		17	$11 - 9 = \square$	
3	$10 - 9 = \square$		18	$12 - 9 = \square$	
4	$1 + 3 = \square$		19	$15 - 9 = \square$	
5	$10 - 9 = \square$		20	$14 - 9 = \square$	
6	$1 + 1 = \square$		21	$13 - 9 = \square$	
7	$10 - 9 = \square$		22	$17 - 9 = \square$	
8	$1 + 2 = \square$		23	$18 - 9 = \square$	
9	$12 - 9 = \square$		24	$9 + \square = 13$	
10	$10 - 9 = \square$		25	$9 + \square = 14$	
11	$1 + 3 = \square$		26	$9 + \square = 16$	
12	$13 - 9 = \square$		27	$9 + \square = 15$	
13	$10 - 9 = \square$		28	$9 + \square = 17$	
14	$1 + 5 = \square$		29	$9 + \square = 18$	
15	$15 - 9 = \square$		30	$9 + \square = 19$	

B

Number correct: ⬡
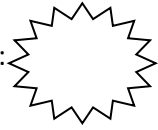
Name _____   Date _____

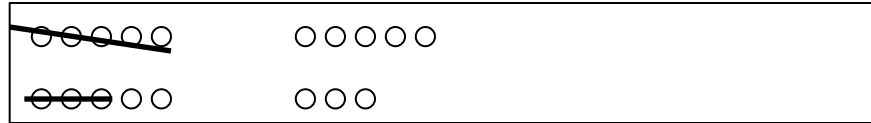*Write the missing number. Pay attention to the addition or subtraction sign.

1	$10 - 9 = \square$		16	$10 - 9 = \square$	
2	$1 + 1 = \square$		17	$11 - 9 = \square$	
3	$10 - 9 = \square$		18	$13 - 9 = \square$	
4	$1 + 2 = \square$		19	$14 - 9 = \square$	
5	$10 - 9 = \square$		20	$13 - 9 = \square$	
6	$1 + 3 = \square$		21	$12 - 9 = \square$	
7	$10 - 9 = \square$		22	$15 - 9 = \square$	
8	$1 + 4 = \square$		23	$16 - 9 = \square$	
9	$14 - 9 = \square$		24	$9 + \square = 12$	
10	$10 - 9 = \square$		25	$9 + \square = 13$	
11	$1 + 3 = \square$		26	$9 + \square = 15$	
12	$13 - 9 = \square$		27	$9 + \square = 14$	
13	$10 - 9 = \square$		28	$9 + \square = 15$	
14	$1 + 2 = \square$		29	$9 + \square = 17$	
15	$12 - 9 = \square$		30	$9 + \square = 16$	

COMMON CORE

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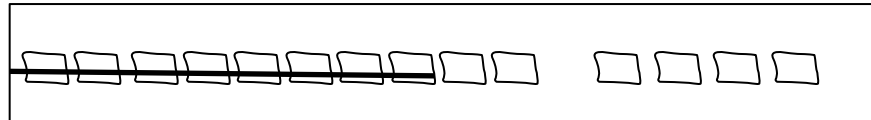Name _____   Date _____

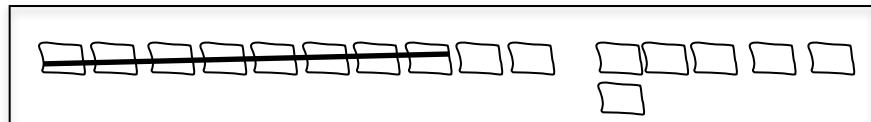1. Match the pictures with the number sentences.

a.   12 – 8 = 4

b.   17 – 8 = 9

c.   16 – 8 = 8

d.   18 – 8 = 10

e.   14 – 8 = 6
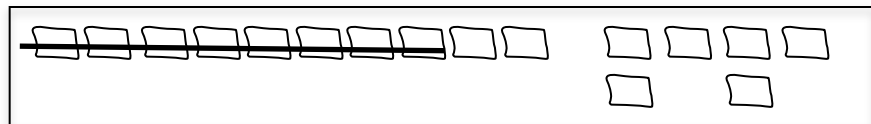
Circle 10 and subtract.

2.   13 – 8 = _____
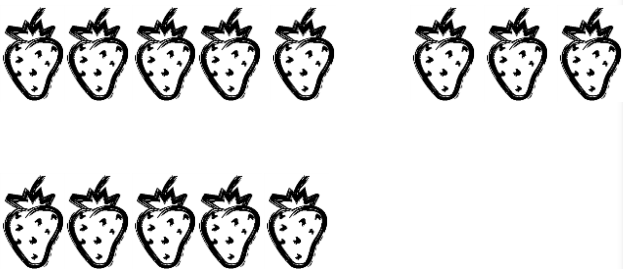
3.   11 – 8 = _____

4. $15 - 8 =$ _____
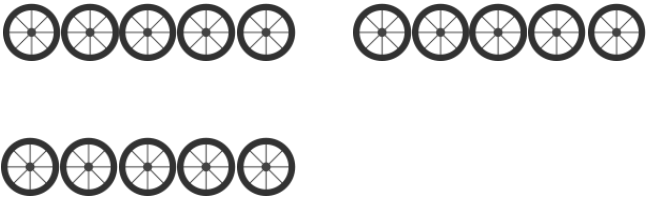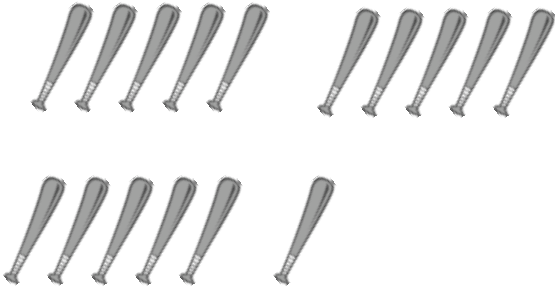
5. $19 - 8 =$ _____

6. $16 - 8 =$ _____
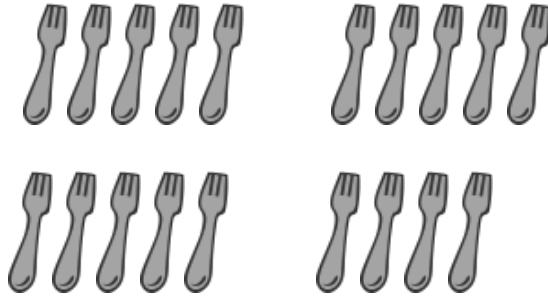
7. $17 - 8 =$ _____

Draw and circle 10, **or** break apart the teen number with a number bond. Then subtract.

8. $12 - 8 =$ ___

9. $13 - 8 =$ ___

10. $14 - 8 =$ ___

11. $15 - 8 =$ ___

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Name _____   Date _____

1. Draw and circle 10. Then subtract.

a) 12 – 8 = _____	b) 14 – 8 = _____

2. Use a number bond to break apart the teen number. Then subtract.

15 – 8 = _____

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Name _____ Date _____

1. Match the number sentence to the picture or to the number bond.

a. 13 – 7 = _____

| 13 | 10 – 7 = 3 |
| 10   3 | 3 + 3 = 6 |

b. 16 – 8 = _____

c. 11 – 8 = _____

| 13 | 10 – 8 = 2 |
| 10   3 | 2 + 3 = 5 |

d. 13 – 8 = _____

2. Show how you would solve 14 – 8, either with a number bond or a drawing.

(Circle) 10. Then subtract.

3. Milo has 17 rocks. He throws 8 of them into a pond. How many does he have left?

Milo has _____ rocks left.

Draw and (circle) 10. Then subtract.

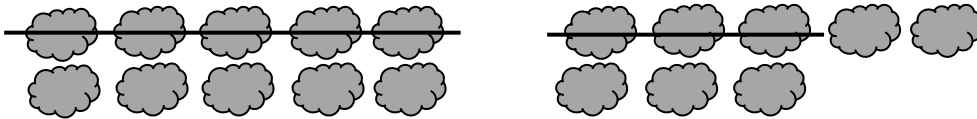Lucy has $12. She spends $8. How much money does she have now?

<p style="text-align: right;">Lucy has $_____ now.</p>

Draw and (circle) 10, or use a number bond to break apart the teen number and subtract.

4. Sean has 15 dinosaurs. He gives 8 to his sister. How many dinosaurs does he keep?

<p style="text-align: right;">Sean keeps _____ dinosaurs.</p>

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5. Use the picture to fill in the math story. Show a number sentence.

Olivia saw _____ clouds in the sky. ____ clouds went away. How many clouds are left?	Try it! Can you show how to solve this problem with a number bond?

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10 - 9	11 - 9
12 - 9	13 - 9
14 - 9	15 - 9
16 - 9	17 - 9
18 - 9	19 - 9