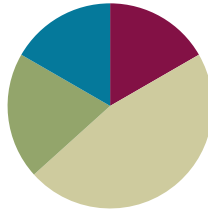


## Lesson 14

**Objective:** Model numbers with more than 9 ones or 9 tens; write in expanded, unit, standard, and word forms.

### Suggested Lesson Structure

■ Fluency Practice	(10 minutes)
■ Application Problem	(12 minutes)
■ Concept Development	(28 minutes)
■ Student Debrief	(10 minutes)
<b>Total Time</b>	<b>(60 minutes)</b>



### Fluency Practice (10 minutes)

- Sprint: Review of Subtraction in the Teens **2.OA.2** (8 minutes)
- Happy Counting Up and Down by Ones Crossing 100 **2.NBT.2** (2 minutes)

### Sprint: Review of Subtraction in the Teens (8 minutes)

Materials (S) Review of Subtraction in the Teens Sprint

### Happy Counting Up and Down by Ones Crossing 100 (2 minutes)

- T: Let's play Happy Counting!
- T: Watch my fingers to know whether to count up or down. A closed hand means stop. (Show signals as you explain.)
- T: We'll count by ones, starting at 76. Ready? (Teacher rhythmically points up until a change is desired. Show a closed hand then point down. Continue, mixing it up.)
- S: 76, 77, 78, 79, 80, 81 (switch). 80, 79, 78 (switch). 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92 (switch). 91, 90, 89, 88, 87 (switch). 88, 89, 90, 91, 92, 93, 94, 95 (switch). 94, 93 (switch). 94, 95, 96, 97, 98, 99, 100, 101, 102, 103 (switch). 102, 101, 100, 99, 98 (switch). 99, 100, 101, 102, 103, 104, 105, 106, etc.

**Application Problem (12 minutes)**

A second grade class has 23 students. What is the total number of fingers of the students?

- T: Read this problem with me.
- T: I'm very curious to see what you'll draw to solve this! Talk with your partner to share ideas, and then I'll give you 2 minutes to draw and label your picture.
- T: (After several minutes.) Who would like to share their thinking?
- S: I drew 23 circles to be the 23 students. Then I put the number 10 in each to be the 10 fingers for everybody. Then I skip-counted by tens and got to 230. → I drew 23 ten-disks because each student has 10 fingers. Then I circled 1 group of 10 circles and wrote 100 because 10 tens equals 100. Then I circled another group of 10 circles. That made 200. And there were 3 tens left, which is 30. So the answer is 230.
- T: 230 what?
- S: 230 fingers!
- T: Why is it easier to draw 23 ten-disks than, say, 23 sets of hands?
- S: It's faster! → It takes longer to draw 2 hands for every student instead of just 1 circle for each student.
- T: Good reasoning! It's good to be fast if you can be accurate, but it's also important to use a strategy that makes sense to you.
- T: So how many fingers do 23 students have?
- S: 23 students have 230 fingers!
- T: Please add that statement to your paper.

**Concept Development (28 minutes)**

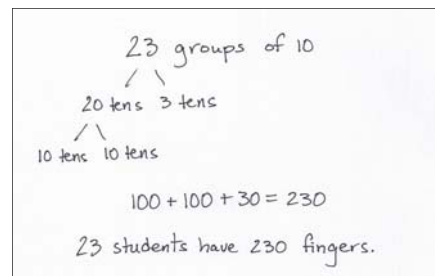
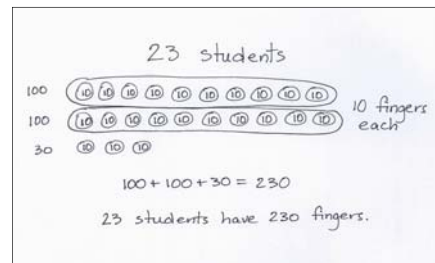
Materials (T) White board, poster space or magnetized place value disks (S) Place value disks (9 hundreds, 15 tens, 15 ones), place value mat, pencil and paper, Problem Set



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

Adjust the number or the task to challenge accelerated learners. Below are two suggestions for extending the problem:

- A second grade class has 23 students. What is the total number of fingers of the students? What is the total number of toes? How many fingers and toes are there altogether?
- A second grade class has 23 students. What is the total number of fingers of the students? How many more students need to join the class so that there are 300 student fingers in all?



- T: On your place value mat, show me the number 14.  
 S: (Students show.)  
 T: What disks did you use from greatest to smallest?  
 S: 1 ten and 4 ones.  
 T: Change 1 ten for 10 ones. (Pause as students work.) What disks did you use this time?  
 S: 14 ones.  
 T: Discuss with your partner why this statement is true. (Silently write 1 ten 2 ones = 12 ones.)  
 S: Yes, it is true. → It's true because 1 ten is 10 ones and 10 + 2 is 12 ones. → Yes, but my teacher said you can't have more than 9 ones. → It's okay to use more. It's just faster to use a ten.  
 T: Show me the number 140 to me with your disks.  
 S: (Students show.)  
 T: What place value disks did you use from greatest to smallest?  
 S: 1 hundred 4 tens.  
 T: Change 1 hundred for 10 tens. (Pause as students work.) What disks did you use this time?  
 S: 14 tens.  
 T: Touch and count by tens to find the total value of your tens.  
 S: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140.  
 T: What is the value of 14 tens? Answer in a full sentence, "The value of 14 tens is..."  
 S: The value of 14 tens is 140.  
 T: Discuss why this statement is true with your partner. (Silently write: 1 hundred 4 tens = 14 tens.)  
 T: (After discussion.) Now discuss with your partner why this is true. (Silently write: 14 tens = 140 ones.)  
 T: Show me the number 512.  
 T: What disks did you use?  
 S: 5 hundreds 1 ten 2 ones.  
 T: Change 1 ten for 10 ones. (Pause as students work.) What disks did you use?  
 S: 5 hundreds 12 ones.  
 T: Discuss why the statement is true. (Write 5 hundreds 1 ten 2 ones = 5 hundreds 12 ones. Continue with more guided examples if necessary with a small group.)  
 T: First model A and then B. Tell the total value of each number you model.

A	B
1 hundred 5 tens 2 ones	15 tens 2 ones
11 tens	1 hundred 1 ten
1 ten 3 ones	13 ones
12 tens 9 ones	1 hundred 2 tens 9 ones

**Problem Set (12 minutes)**

Materials: (S) Problem Set Part B

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.

Directions: Represent each number two ways on the place value charts. The instructions will tell you what units to use.

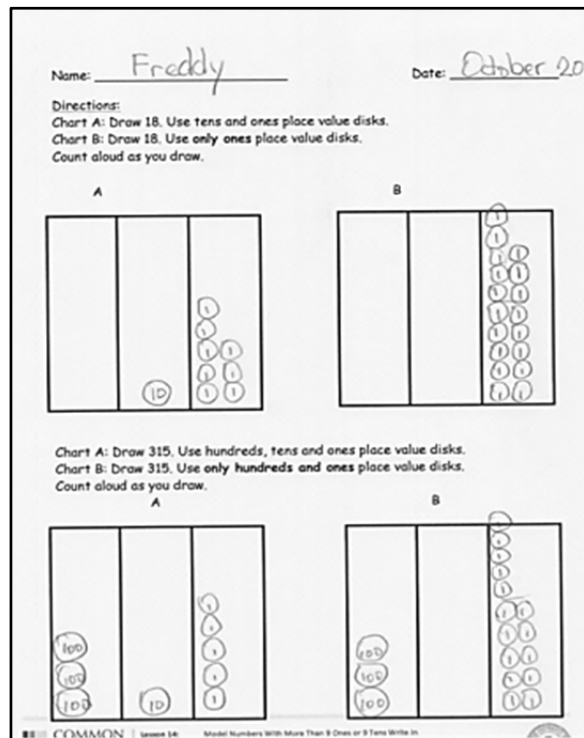
**Student Debrief (10 minutes)**

**Lesson Objective:** Model numbers with more than 9 ones or 9 tens; write in expanded, unit, standard, and word forms.

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.

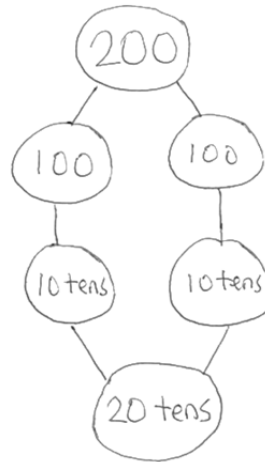
- T: Bring your Problem Set to our Debrief.
- S: Check your work carefully with a partner. How did you show each number? I will circulate and look at your drawings, too.
- T: (After two minutes.) Which ones were hard for you?
- T: (Ask questions, especially with the third page. If no one is forthcoming, choose one you saw many struggled with as you circulated.)
- T: Let's look at question number 4. What number is written?
- S: 206.
- T: Say 206 in expanded form.
- S:  $200 + 6$ .
- T:  $100 + 100$  is?



**NOTES ON MULTIPLE MEANS OF ENGAGEMENT:**

The Debrief relies heavily on oral language and automaticity with that language. If your students need support, it may be appropriate to have them answer some questions on their personal boards. Alternatively, ask students to chorally respond at your signal so that you can build wait time in between responses.

- S: 200.  
 T: 100 is how many tens?  
 S: 10 tens.  
 T: 10 tens + 10 tens is?  
 S: 20 tens.  
 T: 20 tens is ?  
 S: 200.  
 T: 206 = 2 hundreds 6 ones = 20 tens 6 ones.  
 Talk to your partner about why this is true.  
 T: We can have more than 9 units. Let's try some.  
 T: The value of 30 tens is?  
 S: 300.  
 T: 18 tens?  
 S: 180.  
 T: Excellent.



**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.

Chart A: Draw 120. Use hundreds and tens place value disks.  
 Chart B: Draw 120. Use only tens place value disks.  
 Count aloud as you draw.

**A** **B**

Chart A: Draw 206. Use hundreds and ones place value disks.  
 Chart B: Draw 206. Use only tens and ones place value disks.  
 Count aloud as you draw.

**A** **B**

**Part B: Whisper-talk the numbers and words as you fill in the blanks.**

- 18 =    hundreds   1   tens   8   ones  
 18 =  18  ones
- 315 =   3  hundreds   1  tens   5  ones  
 315 =   3  hundreds  15  ones
- 120 =   1  hundreds   2  tens   0  ones  
 120 =  12  tens   0  ones
- 206 =   2  hundreds   0  tens   6  ones  
 206 =  20  tens   6  ones
- 419 =   4  hundreds   1  tens   9  ones  
 419 =  41  tens   9  ones
- 570 =   5  hundreds   7  tens  
 570 =  57  tens
- 718 =   7  hundreds  18  ones  
 748 =  74  tens   8  ones
- 909 =   9  hundreds   9  ones  
 909 =  90  tens   9  ones

**A**

# Correct \_\_\_\_\_

Subtract

1	$3 - 1 =$		23	$7 - 4 =$	
2	$13 - 1 =$		24	$17 - 4 =$	
3	$5 - 1 =$		25	$7 - 5 =$	
4	$15 - 1 =$		26	$17 - 5 =$	
5	$7 - 1 =$		27	$9 - 5 =$	
6	$17 - 1 =$		28	$19 - 5 =$	
7	$4 - 2 =$		29	$7 - 6 =$	
8	$14 - 2 =$		30	$17 - 6 =$	
9	$6 - 2 =$		31	$9 - 6 =$	
10	$16 - 2 =$		32	$19 - 6 =$	
11	$8 - 2 =$		33	$8 - 7 =$	
12	$18 - 2 =$		34	$18 - 7 =$	
13	$4 - 3 =$		35	$9 - 8 =$	
14	$14 - 3 =$		36	$19 - 8 =$	
15	$6 - 3 =$		37	$7 - 3 =$	
16	$16 - 3 =$		38	$17 - 3 =$	
17	$8 - 3 =$		39	$5 - 4 =$	
18	$18 - 3 =$		40	$15 - 4 =$	
19	$6 - 4 =$		41	$8 - 5 =$	
20	$16 - 4 =$		42	$18 - 5 =$	
21	$8 - 4 =$		43	$8 - 6 =$	
22	$18 - 4 =$		44	$18 - 6 =$	

**B**

Improvement \_\_\_\_\_

# Correct \_\_\_\_\_

Subtract

1	$2 - 1 =$		23	$9 - 4 =$	
2	$12 - 1 =$		24	$19 - 4 =$	
3	$4 - 1 =$		25	$6 - 5 =$	
4	$14 - 1 =$		26	$16 - 5 =$	
5	$6 - 1 =$		27	$8 - 5 =$	
6	$16 - 1 =$		28	$18 - 5 =$	
7	$3 - 2 =$		29	$8 - 6 =$	
8	$13 - 2 =$		30	$18 - 6 =$	
9	$5 - 2 =$		31	$9 - 6 =$	
10	$15 - 2 =$		32	$19 - 6 =$	
11	$7 - 2 =$		33	$9 - 7 =$	
12	$17 - 2 =$		34	$19 - 7 =$	
13	$5 - 3 =$		35	$9 - 8 =$	
14	$15 - 3 =$		36	$19 - 8 =$	
15	$7 - 3 =$		37	$8 - 3 =$	
16	$17 - 3 =$		38	$18 - 3 =$	
17	$9 - 3 =$		39	$6 - 4 =$	
18	$19 - 3 =$		40	$16 - 4 =$	
19	$5 - 4 =$		41	$9 - 5 =$	
20	$15 - 4 =$		42	$19 - 5 =$	
21	$7 - 4 =$		43	$7 - 6 =$	
22	$17 - 4 =$		44	$17 - 6 =$	

Name \_\_\_\_\_

Date \_\_\_\_\_

Whisper count as you show the numbers with place value disks.

A

Draw 18 using tens and ones.

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B

Draw 18 using **only** ones.

--	--	--

A

Draw 315 using hundreds, tens, and ones.

--	--	--

B

Draw 315 using **only** hundreds and ones.

--	--	--



**A**

Draw 120 using hundreds, tens, and ones.

--	--	--

**B**

Draw 206 using **only** tens and ones.

--	--	--

**Part B**

1. Whisper-talk the numbers and words as you fill in the blanks.

a.  $18 =$  \_\_\_\_\_ hundreds \_\_\_\_\_ tens \_\_\_\_\_ ones  
 $18 =$  \_\_\_\_\_ ones

b.  $315 =$  \_\_\_\_\_ hundreds \_\_\_\_\_ tens \_\_\_\_\_ ones  
 $315 =$  \_\_\_\_\_ hundreds \_\_\_\_\_ ones

c.  $120 =$  \_\_\_\_\_ hundreds \_\_\_\_\_ tens \_\_\_\_\_ ones  
 $120 =$  \_\_\_\_\_ tens \_\_\_\_\_ ones

d.  $206 =$  \_\_\_\_\_ hundreds \_\_\_\_\_ tens \_\_\_\_\_ ones  
 $206 =$  \_\_\_\_\_ tens \_\_\_\_\_ ones

e.  $419 =$  \_\_\_\_\_ hundreds \_\_\_\_\_ tens \_\_\_\_\_ ones  
 $419 =$  \_\_\_\_\_ tens \_\_\_\_\_ ones

f.  $570 =$  \_\_\_\_\_ hundreds \_\_\_\_\_ tens  
 $570 =$  \_\_\_\_\_ tens

g.  $718 =$  \_\_\_\_\_ hundreds \_\_\_\_\_ ones  
 $748 =$  \_\_\_\_\_ tens \_\_\_\_\_ ones

h.  $909 =$  \_\_\_\_\_ hundreds \_\_\_\_\_ ones  
 $909 =$  \_\_\_\_\_ tens \_\_\_\_\_ ones

2. Mr. Hernandez's class wants to trade 400 tens rods for hundreds flats with Mr. Harrington's class. How many hundreds flats are equal to 400 tens rods?

Name \_\_\_\_\_

Date \_\_\_\_\_

Draw 241. Use hundreds, tens, and ones place value disks.

--	--	--

Chart B: Draw 241. Use **only tens and ones** place value disks.

--	--	--

Fill in the blanks.

1.  $45 = \underline{\quad}$  hundreds  $\underline{\quad}$  tens  $\underline{\quad}$  ones

$45 = \underline{\quad}$  ones

2.  $682 = \underline{\quad}$  hundreds  $\underline{\quad}$  tens  $\underline{\quad}$  ones

$682 = \underline{\quad}$  hundreds  $\underline{\quad}$  ones

Name \_\_\_\_\_

Date \_\_\_\_\_

1. Whisper-talk the numbers and words as you fill in the blanks.

a.  $16 = \underline{\quad\quad} \text{ tens } \underline{\quad\quad} \text{ ones}$   
 $18 = \underline{\quad\quad} \text{ ones}$

b.  $217 = \underline{\quad\quad} \text{ hundreds } \underline{\quad\quad} \text{ tens } \underline{\quad\quad} \text{ ones}$   
 $217 = \underline{\quad\quad} \text{ hundreds } \underline{\quad\quad} \text{ ones}$

c.  $320 = \underline{\quad\quad} \text{ hundreds } \underline{\quad\quad} \text{ tens } \underline{\quad\quad} \text{ ones}$   
 $320 = \underline{\quad\quad} \text{ tens } \underline{\quad\quad} \text{ ones}$

d.  $139 = \underline{\quad\quad} \text{ hundreds } \underline{\quad\quad} \text{ tens } \underline{\quad\quad} \text{ ones}$   
 $139 = \underline{\quad\quad} \text{ tens } \underline{\quad\quad} \text{ ones}$

e.  $473 = \underline{\quad\quad} \text{ hundreds } \underline{\quad\quad} \text{ tens } \underline{\quad\quad} \text{ ones}$   
 $473 = \underline{\quad\quad} \text{ tens } \underline{\quad\quad} \text{ ones}$

f.  $680 = \underline{\quad\quad} \text{ hundreds } \underline{\quad\quad} \text{ tens}$   
 $680 = \underline{\quad\quad} \text{ tens}$

g.  $817 = \underline{\quad\quad} \text{ hundreds } \underline{\quad\quad} \text{ ones}$   
 $817 = \underline{\quad\quad} \text{ tens } \underline{\quad\quad} \text{ ones}$

h.  $921 = \underline{\quad\quad} \text{ hundreds } \underline{\quad\quad} \text{ ones}$   
 $921 = \underline{\quad\quad} \text{ tens } \underline{\quad\quad} \text{ ones}$

2. Write down how you skip-count by ten from 350 to 240? You might use place value disks, number lines, bundles, or numbers.