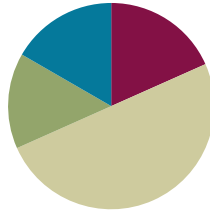


Lesson 14

Objective: Round to the nearest hundred on the vertical number line.

Suggested Lesson Structure

■ Fluency Practice	(11 minutes)
■ Application Problem	(9 minutes)
■ Concept Development	(30 minutes)
■ Student Debrief	(10 minutes)
Total Time	(60 minutes)



Fluency Practice (11 minutes)

- Sprint: Find the Halfway Point **3.NBT.1** (9 minutes)
- Rename the Tens **3.NBT.3** (2 minutes)

Sprint: Find the Halfway Point (9 minutes)

Materials: (S) Find the Halfway Point Sprint

Note: This activity directly supports students' work with rounding by providing practice with finding the halfway point between two numbers.

Rename the Tens (2 minutes)

Note: This activity prepares students for rounding in today's lesson.

T: (Write 11 tens = ____.) Say the number.

S: 110.

Continue with the following possible sequence: 19 tens, 20 tens, 28 tens, 30 tens, and 40 tens.

Application Problem (9 minutes)

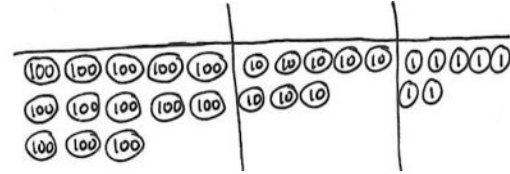
Materials: (S) Unlabeled place value chart (Template), place value disks (13 hundreds, 10 tens, 8 ones)

Students model the following on the place value chart:

- 10 tens
- 10 hundreds
- 13 tens

- 13 hundreds
- 13 tens and 8 ones
- 13 hundreds 8 tens 7 ones

Drawn Representation of Place Value Chart and Disks Showing 13 Hundreds 8 Tens 7 Ones



MP.6

Note: This problem prepares students for the place value knowledge necessary for Problem 2 in this lesson. They need to understand that there are 13 hundreds in 1387. Through discussion, help students explain the difference between the total number of hundreds in 1387 and the digit in the hundreds place. Use the place value cards to reinforce this discussion if necessary (shown below to the right).

Concept Development (30 minutes)

Materials: (T) Place value cards (S) Personal white board

Problem 1: Round three-digit numbers to the nearest hundred.

- T: We've practiced rounding numbers to the nearest ten. Today, let's find 132 grams rounded to the nearest hundred.
- T: How many hundreds are in 132 grams? (Show place value cards for 132.)
- S: 1 hundred! (Pull apart the cards to show the hundred as 100.)
- T: Draw a vertical number line on your personal white board. (Allow students to draw number line.) Draw a tick mark near the bottom of the number line. To the right, label it 100 = 1 hundred.
- S: (Draw and label 100 = 1 hundred.)
- T: What is 1 more hundred?
- S: 2 hundreds! (Show the place value card for 200 or 2 hundreds.)
- T: Draw a tick mark near the top of the number line. To the right, label 200 = 2 hundreds.
- S: (Draw and label 200 = 2 hundreds.)
- T: What number is halfway between 100 and 200?
- S: 150.
- T: In unit form, what number is halfway between 1 hundred and 2 hundreds?
- S: 1 hundred 5 tens. (Show with the place value cards.)
- T: Estimate to draw a tick mark halfway between 100 and 200. Label it 150 = 1 hundred 5 tens.
- S: (Draw and label as 150 = 1 hundred 5 tens.)
- T: Estimate to mark and label the location of 132.
- S: (Mark and label 132.)

200

100
50

100

- T: When you look at your vertical number line, is 132 more than halfway or less than halfway between 100 and 200? Turn and talk to a partner.
- S: 132 is less than halfway between 1 hundred and 2 hundreds. → I know because 132 is less than 150, and 150 is halfway. → I know because 5 tens is halfway, and 3 tens is less than 5 tens.
- T: 132 grams rounded to the nearest hundred grams is...?
- S: 100 grams.
- T: Tell me in unit form.
- S: 1 hundred 3 tens 2 ones rounded to the nearest hundred is 1 hundred.

Continue with rounding 250 grams and 387 milliliters to the nearest hundred. (Leave the number line for 387 milliliters on the board. It will be used in Problem 2.)

Problem 2: Round four-digit numbers to the nearest hundred.



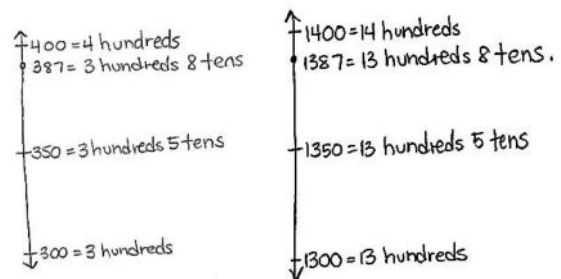
- T: To round 387 milliliters to the nearest hundred, we drew a number line with endpoints 3 hundreds and 4 hundreds. Suppose we round 1,387 milliliters to the nearest hundred. How many hundreds are in 1,387?
- S: 13 hundreds.
- T: What is 1 more hundred?
- S: 14 hundreds.
- T: (Draw a vertical number line with endpoints labeled 13 hundreds and 14 hundreds next to the number line for 387.) Draw my number line on your board. Then, work with your partner to estimate, mark, and label the halfway point, as well as the location of 1,387.
- S: (Mark and label 13 hundreds 5 tens and 1,387.)
- T: Is 1,387 more than halfway or less than halfway between 13 hundreds and 14 hundreds?
- S: It's more than halfway.
- T: Then, what is 1,387 milliliters rounded to the nearest hundred milliliters?
- S: 14 hundred milliliters.

Continue using the following possible sequence: 1,582; 2,146; and 3,245.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Support students as they locate points on the number line by allowing them to count by tens and mark all points between 1,300 and 1,400.

Alternatively, challenge students to offer three other numbers similar to 2,146 that would be rounded to 2,100.



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 should solve these problems using the RDW approach used for Application Problems.

Student Debrief (10 minutes)

Lesson Objective: Round to the nearest hundred on the vertical number line.

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.

- Have students share their explanations for Problem 4, particularly if there is disagreement.
- What strategies did you use to solve Problem 3?
- How is the procedure for rounding to the nearest hundred the same or different for three-digit and four-digit numbers?
- How is rounding to the nearest hundred different from rounding to the nearest ten?

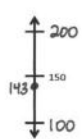
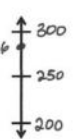
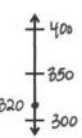
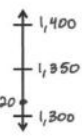
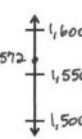
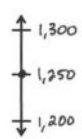
Exit Ticket (3 minutes)

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.

NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 14 Problem Set 3•2

Name Gina Date _____

1. Round to the nearest hundred. Use the number line to model your thinking.

a. $143 \approx 100$ 	b. $286 \approx 300$ 
c. $320 \approx 300$ 	d. $1,320 \approx 1,300$ 
e. $1,572 \approx 1,600$ 	f. $1,250 \approx 1,300$ 

COMMON CORE Lesson 14: Round to the nearest hundred on the vertical number line. Date: 4/22/14 engage^{ny}

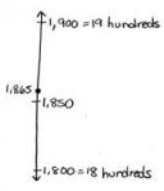
NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 14 Problem Set 3•2

2. Complete the chart.

a. Shauna has 480 stickers. Round the number of stickers to the nearest hundred.	480 stickers \approx 500 stickers
b. There are 525 pages in a book. Round the number of pages to the nearest hundred.	525 pages \approx 500 pages
c. A container holds 750 milliliters of water. Round the capacity to the nearest 100 milliliters.	750 mL \approx 800 mL
d. Glen spends \$1,297 on a new computer. Round the amount Glen spends to the nearest \$100.	\$1,297 \approx \$1,300
e. The drive between two cities is 1,842 kilometers. Round the distance to the nearest 100 kilometers.	1,842 km \approx 1,800 km

3. Circle the numbers that round to 600 when rounding to the nearest hundred.
 527 550 639 681 713 603

4. The teacher asks students to round 1,865 to the nearest hundred. Christian says that it is one thousand, nine hundred. Alexis disagrees and says it is 19 hundreds. Who is correct? Explain your thinking.



They are both correct. 1,865 rounded to the nearest hundred is 1,900. 1,900 in unit form is 19 hundreds.

EUREKA MATH Lesson 14: Round to the nearest hundred on the vertical number line. Date: 3/12/14/14/14 engage^{ny} 31

Number Correct: _____

A

Find the Halfway Point

1.	0	_____	10
2.	10	_____	20
3.	20	_____	30
4.	70	_____	80
5.	80	_____	70
6.	40	_____	50
7.	50	_____	40
8.	30	_____	40
9.	40	_____	30
10.	70	_____	60
11.	60	_____	70
12.	80	_____	90
13.	90	_____	100
14.	100	_____	90
15.	90	_____	80
16.	50	_____	60
17.	150	_____	160
18.	250	_____	260
19.	750	_____	760
20.	760	_____	750
21.	80	_____	90
22.	180	_____	190

23.	280	_____	290
24.	580	_____	590
25.	590	_____	580
26.	30	_____	40
27.	930	_____	940
28.	70	_____	60
29.	470	_____	460
30.	90	_____	100
31.	890	_____	900
32.	990	_____	1,000
33.	1,000	_____	1,010
34.	70	_____	80
35.	1,070	_____	1,080
36.	1,570	_____	1,580
37.	480	_____	490
38.	1,480	_____	1,490
39.	1,080	_____	1,090
40.	360	_____	350
41.	1,790	_____	1,780
42.	400	_____	390
43.	1,840	_____	1,830
44.	1,110	_____	1,100

B

Number Correct: _____

Improvement: _____

Find the Halfway Point

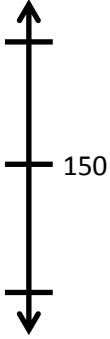





1.	10	_____	20
2.	20	_____	30
3.	30	_____	40
4.	60	_____	70
5.	70	_____	60
6.	50	_____	60
7.	60	_____	50
8.	40	_____	50
9.	50	_____	40
10.	80	_____	70
11.	70	_____	80
12.	80	_____	90
13.	90	_____	100
14.	100	_____	90
15.	90	_____	80
16.	60	_____	70
17.	160	_____	170
18.	260	_____	270
19.	560	_____	570
20.	570	_____	560
21.	70	_____	80
22.	170	_____	180

23.	270	_____	280
24.	670	_____	680
25.	680	_____	670
26.	20	_____	30
27.	920	_____	930
28.	60	_____	50
29.	460	_____	450
30.	90	_____	100
31.	890	_____	900
32.	990	_____	1,000
33.	1,000	_____	1,010
34.	20	_____	30
35.	1,020	_____	1,030
36.	1,520	_____	1,530
37.	380	_____	390
38.	1,380	_____	1,390
39.	1,080	_____	1,090
40.	760	_____	750
41.	1,690	_____	1,680
42.	300	_____	290
43.	1,850	_____	1,840
44.	1,220	_____	1,210

Name _____

Date _____

1. Round to the nearest hundred. Use the number line to model your thinking.

<p>a. $143 \approx$ _____</p> 	<p>b. $286 \approx$ _____</p> 
<p>c. $320 \approx$ _____</p> 	<p>d. $1,320 \approx$ _____</p> 
<p>e. $1,572 \approx$ _____</p> 	<p>f. $1,250 \approx$ _____</p> 

2. Complete the chart.

a. Shauna has 480 stickers. Round the number of stickers to the nearest hundred.	
b. There are 525 pages in a book. Round the number of pages to the nearest hundred.	
c. A container holds 750 milliliters of water. Round the capacity to the nearest 100 milliliters.	
d. Glen spends \$1,297 on a new computer. Round the amount Glen spends to the nearest \$100.	
e. The drive between two cities is 1,842 kilometers. Round the distance to the nearest 100 kilometers.	

3. Circle the numbers that round to 600 when rounding to the nearest hundred.

527

550

639

681

713

603


4. The teacher asks students to round 1,865 to the nearest hundred. Christian says that it is one thousand, nine hundred. Alexis disagrees and says it is 19 hundreds. Who is correct? Explain your thinking.

Name _____

Date _____

1. Round to the nearest hundred. Use the number line to model your thinking.

a. $137 \approx$ _____	b. $1,761 \approx$ _____
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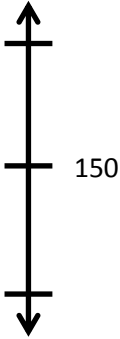







2. There are 685 people at the basketball game. Draw a vertical number line to round the number of people to the nearest hundred people.

Name _____

Date _____

1. Round to the nearest hundred. Use the number line to model your thinking.

<p>a. $156 \approx$ _____</p> 	<p>b. $342 \approx$ _____</p> 
<p>c. $260 \approx$ _____</p> 	<p>d. $1,260 \approx$ _____</p> 
<p>e. $1,685 \approx$ _____</p> 	<p>f. $1,804 \approx$ _____</p> 

2. Complete the chart.

a. Luis has 217 baseball cards. Round the number of cards Luis has to the nearest hundred.	
b. There were 462 people sitting in the audience. Round the number of people to the nearest hundred.	
c. A bottle of juice holds 386 milliliters. Round the capacity to the nearest 100 milliliters.	
d. A book weighs 727 grams. Round the weight to the nearest 100 grams.	
e. Joanie's parents spent \$1,260 on two plane tickets. Round the total to the nearest \$100.	

3. Circle the numbers that round to 400 when rounding to the nearest hundred.

368

342

420

492

449

464

4. There are 1,525 pages in a book. Julia and Kim round the number of pages to the nearest hundred. Julia says it is one thousand, five hundred. Kim says it is 15 hundreds. Who is correct? Explain your thinking.

unlabeled place value chart