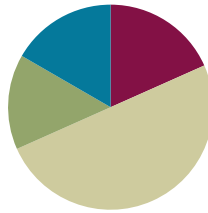


Lesson 14

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 on the Number Line Sprint

Note: This activity directly supports students' work with rounding by providing practice with finding the midpoint 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: 11 tens, 19 tens, 20 tens, 28 tens, 30 tens, 40 tens.

Application Problem (9 minutes)

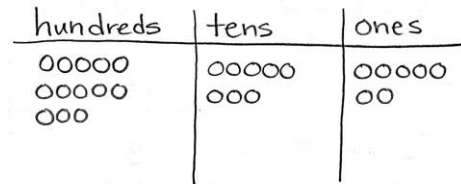
Materials: (S) Place value mats, place value disks (13 hundreds, 10 tens, 8 ones)

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 mat and disks showing 13 hundreds 8 tens 7 ones:



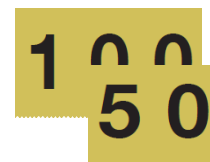
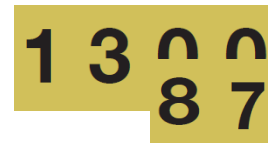
MP.6 Note: This problem prepares students for the place value knowledge necessary for Problem 2 in this lesson. They will need to understand that there are 13 hundreds in 1387. Through discussion, help students explain the difference between the total number of hundreds in 1387 and the digit in the hundreds place. Use the Hide Zero cards to reinforce this discussion if necessary (shown below to the right).

Concept Development (30 minutes)

Materials: (T) Hide Zero cards (S) Personal white boards

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 Hide Zero cards for 132.)
- S: 1 hundred! (Pull apart the cards to show the hundred as 100.)
- T: 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 Hide Zero 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 Hide Zero 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: 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 rounded to the nearest hundred is?
- S: 100.
- 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 and label the halfway point, as well as the location of 1,387.
- S: (Label 13 hundreds 5 tens.)
- T: Is 1,387 more than halfway or less than halfway between 13 hundreds or 14 hundreds?
- S: It's more than halfway.
- T: Then what is 1,387 milliliters rounded to the nearest hundred?
- S: 14 hundred.

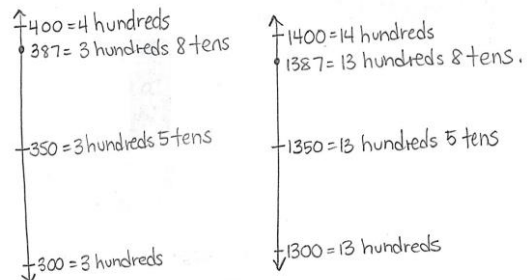
Continue using the following possible sequence: 1,582; 2,146; 3,245.



**NOTES ON
MULTIPLE MEANS
FOR ENGAGEMENT:**

Support students as they locate points on the number line by allowing them to count by tens and mark all points between 1300 and 1400.

Alternatively, challenge students to offer three other numbers similar to 2146 that would be rounded to 2100.



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: 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. You may choose to use any combination of the questions below 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?



NOTES ON MULTIPLE MEANS FOR ENGAGEMENT:

The daily Debrief, as well as *think-pair-share*, support English language learners' language acquisition, offering them an opportunity to talk about math ideas in English and actively using the language of mathematics.

Check for understanding of vocabulary such as *rounding*, *halfway*, and *nearest*. Post a word bank with picture clues. Make a word web soliciting other words they know that have similar meanings. Discuss superlatives when reviewing *nearest*.

Lesson 14 3•2

Name: Gina Date: _____

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

<p>a. $143 = \underline{100}$</p>	<p>b. $286 = \underline{300}$</p>
<p>c. $320 = \underline{300}$</p>	<p>d. $1320 = \underline{1300}$</p>
<p>e. $1572 = \underline{1600}$</p>	<p>f. $1250 = \underline{1300}$</p>

COMMON CORE Lesson #: Lesson Name EXACTLY Lesson Component Template
 Date: 6/12/13 engage^{ny} X.X.1

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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.

Lesson 14 3•2

2.

a. Shauna has 480 stickers. Round the number of stickers to the nearest hundred.	$480 \approx 500$
b. There are 525 pages in a book. Round the number of pages to the nearest hundred.	$525 \approx 500$
c. A container holds 750 mL of water. Round the capacity to the nearest 100 mL.	$750\text{ mL} \approx 800\text{ mL}$
d. Glen spends \$1297 on a new computer. Round the amount Glen spends to the nearest \$100.	$\$1297 \approx \1300
e. The drive between two cities is 1842 km. Round the distance to the nearest 100 km.	$1842\text{ km} \approx 1800\text{ km}$

3. Circle the numbers that round to 600 when rounding to the nearest 100.

527 550 639 681 713 603

4. The teacher asks students to round 865 to the nearest ten. Christian says that it is eight hundred seventy. Alexis disagrees and says it is 87 tens. Who is correct? Explain your thinking.

$\uparrow 870 = 87 \text{ tens}$

$\uparrow 865 = 86 \text{ tens } 5 \text{ ones}$

$\downarrow 860 = 86 \text{ tens}$

They are both correct because
870 in unit form is 87 tens.
 $870 = 87 \text{ tens}$.

870 has 80 tens + 7 tens, 87 tens.

COMMON CORE

Lesson #: 6/12/13
 Date:

Lesson Name EXACTLY Lesson Component Template

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A

Correct

Write the number that is halfway between the two numbers.

1	0	10	23	280	290
2	10	20	24	580	590
3	20	30	25	590	580
4	70	80	26	30	40
5	80	70	27	930	940
6	40	50	28	70	60
7	50	40	29	470	460
8	30	40	30	90	100
9	40	30	31	890	900
10	70	60	32	990	1000
11	60	70	33	1000	1010
12	80	90	34	70	80
13	90	100	35	1070	1080
14	100	90	36	1570	1580
15	90	80	37	480	490
16	50	60	38	1480	1490
17	150	160	39	1080	1090
18	250	260	40	360	350
19	750	760	41	1790	1780
20	760	750	42	400	390
21	80	90	43	1840	1830
22	180	190	44	1110	1100

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B Improvement _____ # Correct _____

Write the number that is halfway between the two numbers.

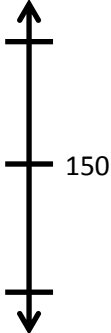





1	10	20	23	270	280
2	20	30	24	670	680
3	30	40	25	680	670
4	60	70	26	20	30
5	70	60	27	920	930
6	50	60	28	60	50
7	60	50	29	460	450
8	40	50	30	90	100
9	50	40	31	890	900
10	80	70	32	990	1000
11	70	80	33	1000	1010
12	80	90	34	20	30
13	90	100	35	1020	1030
14	100	90	36	1520	1530
15	90	80	37	380	390
16	60	70	38	1380	1390
17	160	170	39	1080	1090
18	260	270	40	760	750
19	560	570	41	1690	1680
20	570	560	42	300	290
21	70	80	43	1850	1840
22	170	180	44	1220	1210

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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.

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 mL of water. Round the capacity to the nearest 100 mL.	
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 km. Round the distance to the nearest 100 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 865 to the nearest ten. Christian says that it is eight hundred seventy. Alexis disagrees and says it is 87 tens. Who is correct? Explain your thinking.

Name _____

Date _____

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

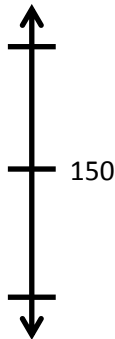





<p>a. $137 \approx$ _____</p> 	<p>b. $761 \approx$ _____</p> 
--	--

2. There are 685 people at the basketball game. Round the number of people to the nearest hundred.

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. $685 \approx$ _____</p> 	<p>d. $804 \approx$ _____</p> 
<p>e. $260 \approx$ _____</p> 	<p>f. $1260 \approx$ _____</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 math textbook 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 525 pages in a book. Julia and Kim round the number of pages to the nearest ten. Julia says it is 520. Kim says it is 53 tens. Who is correct? Explain your thinking.

Ones	
Tens	
Hundreds	
Thousands	