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Lesson 6 Round Decimals

Introduction

What Will I Learn?

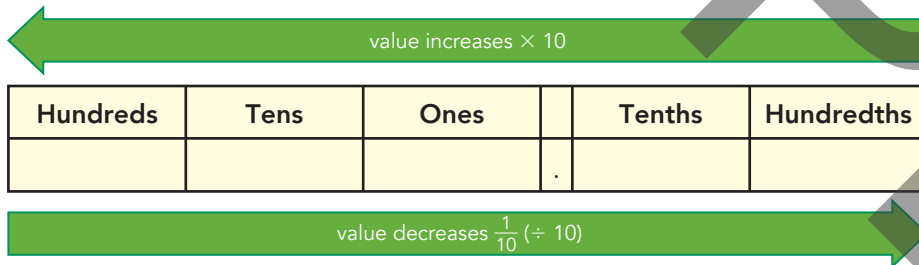
- How do I round decimals to tenths and hundredths?

You can use the digits in place value to round decimals!

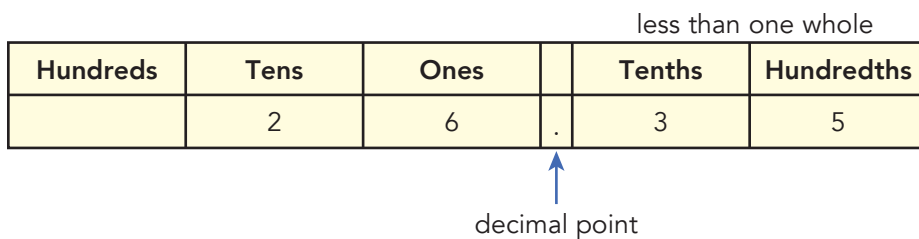


Break Down the Skills

Place value tells you the value of each digit in a number. Place value increases as you move left and decreases as you move right.



Decimals are numbers that are less than one whole. A decimal point shows which part of a number is less than one whole.



Any digits to the right of the decimal point are less than one whole.



You **round** numbers to make calculations easier when you don't need an exact answer.

- You can round decimals by using the same process that you use to round whole numbers.

- Look at what place value you are rounding to.
- Look at the place to the *right* of where you are rounding.
 - If the digit in that place is 0, 1, 2, 3, or 4, round down, not changing the digit to the left.
 - If the digit in that place is 5, 6, 7, 8, or 9, round your target digit up, increasing the digit by one.
- Round 0.45 to the nearest tenth:

Hundreds	Tens	Ones	Tenths	Hundredths
		0	4	5

You are rounding to this place.

Hundreds	Tens	Ones	Tenths	Hundredths
		0	4	5

Check the digit in this place. Is it 5 or greater?

Yes! Round up.

Hundreds	Tens	Ones	Tenths	Hundredths
		0	5	0

Rounding up changes this digit from a 4 to a 5.

Rounding changes this digit to a zero.

- Rounding 0.45 to the nearest tenth is 0.5. You don't write the hundredths place because it became a zero when you rounded to the tenths place.
- Round 2.724 to the nearest hundredth:

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
		2	7	2	4

- Look to the digit to the *right* in the thousandths place.
- Because the digit in the thousandths place is a 4, you need to round down, meaning that the digit in the hundredths place does not change.
- 2.724 rounded to the nearest hundredth is 2.72.

The pattern for rounding numbers doesn't change when you round decimals.



Guided Instruction

You can compare decimals to the hundredths place by using place value and $>$, $=$, $<$. Compare 45.60 and 45.71. Fill in the circle with the correct symbol.

45.63 45.71 same tens

45.63 45.71 same ones

45.63 45.71 different tenths: 0.7 is larger than 0.6, so 45.71 is greater.

You can use place value to round whole numbers.

If the digit to the right of the place that you're rounding to is 0, 1, 2, 3, or 4, you round down.

Round 1,235 to the nearest hundred: _____

If the digit to the right of the place that you're rounding to is 5, 6, 7, 8, or 9, you round up.

Round 4,713 to the nearest thousand: _____

You can round decimals by using the same strategies as rounding whole numbers.

Round 0.28 to the nearest tenth:

Look to the place to the *right* of what you are rounding to. You have an 8 in the hundredths place, so you need to round _____.

Hundreds	Tens	Ones	Tenths	Hundredths
		0	2	8

Write the rounded number in the place-value chart:

Hundreds	Tens	Ones	Tenths	Hundredths
		0		0

Because the hundredths place now has a zero, you do not need to write it in your final answer.

0.28 rounded to the nearest tenth is _____.

Round 0.43 to the nearest tenth in the chart and on the blank below.

Hundreds	Tens	Ones	Tenths	Hundredths
		0		0

0.43 rounded to the nearest tenth is _____.

When you round whole numbers, all the digits to the right of what you rounded become zero.



Round 0.351 to the nearest hundredth:

Look to the place to the *right* of what you are rounding to. You have a 5 in the thousandths place, so you need to round _____.

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
		0	.	3	5

Write the rounded number in the place-value chart:

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
		0	.	3	0

Because the thousandths place now has a zero, you do not need to write it in your final answer:

0.351 rounded to the nearest hundredth is _____.

Round 0.947 to the nearest hundredth:

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
		0	.	9	0

0.947 rounded to the nearest hundredth is _____.

Round 0.516 to the nearest hundredth:

0.516 rounded to the nearest hundredth is _____.

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
		0	.		0

Round up if the digit is 5, 6, 7, 8, or 9.



You use the same process to round numbers that include whole numbers and decimals.

Round 41.68 to the nearest tenth:

Look to the place to the *right* of what you're rounding to. You have an 8 in the hundredths place, so you need to round _____.

Hundreds	Tens	Ones	Tenths	Hundredths
	4	1	.	6

Write the rounded number in the place-value chart:

Hundreds	Tens	Ones	Tenths	Hundredths
	4	1	.	

41.68 rounded to the nearest tenth is _____.

Use the pattern for rounding numbers to solve the following problems.

Look at what place value you are asking to round to.

Look at the place to the *right* of where you are rounding.

If the digit in that place is 0, 1, 2, 3, or 4, round down, not changing the digit to the left.

If the digit in that place is 5, 6, 7, 8, or 9, round your target digit up, increasing the digit by one.

Round 8.351 to the nearest tenth:

Hundreds	Tens	Ones	Tenths	Hundredths
				0

8.351 rounded to the nearest tenth is _____.

Round 16.439 to the nearest hundredth:

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
	1	6			0

16.439 rounded to the nearest hundredth is _____.

Round 320.188 to the nearest hundredth:

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
3	2	0			0

320.188 rounded to the nearest hundredth is _____.

Round 34.976 to the nearest tenth:

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
					0

34.976 rounded to the nearest tenth is _____.

Round 58.371 to the nearest hundredth:

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
					0

58.371 rounded to the nearest hundredth is _____.

Round 8.09 to the nearest tenth: _____

Round 743.024 to the nearest hundredth: _____

Round down if the digit is 0, 1, 2, 3, or 4.



Independent Practice

Answer the questions that follow.

Practice 1

1 What is 4.54 rounded to the nearest tenth?

- A 4.4
- B 4.5
- C 4.6
- D 4.55

2 On the place-value chart, circle the digit to check to decide whether you round up or down when rounding to 0.481 to the nearest hundredth.

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
		0	4	8	1

When you round from hundredths to tenths, your final answer does not include the zero in the hundredths place.



3 Round 12.473 to the nearest hundredth.

4 What is 5.563 rounded to the nearest hundredth?

- A 5.56
- B 5.55
- C 5.6
- D 5.57

5 Round 312.982 to the nearest hundredth.

Practice 2

- 1 On the place-value chart, circle the digit to check to decide whether you round up or down when rounding to 0.73 to the nearest tenth.

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
		0	.	7	3

Rounding makes calculations easier when you don't need an exact answer.



- 2 What is 8.61 rounded to the nearest tenth?

- A 8.5
- B 8.1
- C 8.6
- D 8.7

- 3 Round 45.885 to the nearest hundredth.

- 4 Round 0.98 to the nearest tenth.

- 5 What is 4.186 rounded to the nearest hundredth?

- A 4.2
- B 4.18
- C 4.10
- D 4.19

Exit Ticket

Juan collected data on how long a hummingbird stopped at his bird feeder in his backyard. He wants to add up how long it spent at his feeder each week. To make his calculations easier, he decides to round his data to the nearest tenth. Complete Juan's table by rounding each value to the nearest tenth.



Day of the Week	Time Spent at the Feeder (seconds)	Time Rounded to the Nearest Tenth
Monday	31.65	
Tuesday	20.18	
Wednesday	54.43	
Thursday	12.71	
Friday	23.97	
Saturday	41.69	
Sunday	31.62	

The serial number on Juan's bird feeder is 31.692. Juan says it is his lucky number. What is his lucky number rounded to the nearest hundredth?

On which day is the hummingbird time closest to Juan's lucky number?

TEACHER GUIDE

Lesson 6 Round Decimals

At-a-Glance

Learning Objectives	Review Skills
<ul style="list-style-type: none">Round decimals to tenths and hundredths.	<ul style="list-style-type: none">Round multi-digit whole numbers to any place.Compare decimals to hundredths by using $>$, $=$, and $<$.
Academic Vocabulary	Why Students May Struggle
place value decimal round	<p>Students may round down when a final digit is a 5 rather than rounding up.</p> <p>Students may not know which digit to look at to round.</p>

WHAT WILL I LEARN?

ACTIVATING PRIOR KNOWLEDGE

- Pass out individual white boards. Tell students, "You can use place value to help you compare decimals." Post comparison symbols on the board ($>$, $=$, and $<$) and review their meanings.
 - Remind students that when comparing numbers, they start with the largest place values. Write the numbers 2.56 and 2.49 on the board. Ask students to write the numbers and the correct comparison symbol ($>$) on their boards. Check for understanding. Write the following sets of numbers on the board and check student work each time by having them hold up their white boards: 0.67 and 0.98; 1.81 and 0.98; 12.35 and 12.41.
 - If students need support with comparing decimals, use Copy Master 1 at the end of these teacher notes for students to plot each number on a number line to give them a visual of which is greater/lesser. When using this copy master, either, before copying, add the numbers to be rounded in the blanks and add main number line numbers that will work with the number to be rounded or work with students to add the numbers. Students can also write each decimal in a place-value chart to visualize the comparison.
- Review how to round whole numbers with students.
 - Remind them of the pattern: If a place-value digit is 4 or less, you round down. If a place-value digit is 5 through 9, you round up. Write 55 on the board. Ask, "If you want to round this number to the nearest ten, to what do you round it?" (60) Write 431 on the board. Ask students to round it to the nearest ten (430). Then, ask them to round it to the nearest 100. (400)

Lesson 6 Round Decimals

Introduction
What Will I Learn?
• How do I round decimals to tenths and hundredths?

You can use the digits in place value to round decimals!

Break Down the Skills
Place value tells you the value of each digit in a number. Place value increases as you move left and decreases as you move right.

Hundreds	Tens	Ones	Tenths	Hundredths

Decimals are numbers that are less than one whole. A decimal point shows which part of a number is less than one whole.


Hundreds	Tens	Ones	Tenths	Hundredths
	2	6	3	5

decimal point

You round numbers to make calculations easier when you don't need an exact answer.

- You can round decimals by using the same process that you use to round whole numbers.

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- Explain to students that to round to a specific place value, you need to look at the digit of the place value to the right because that place value is less. Write 10,568 on the board. Ask students to round to the nearest thousand (11,000), hundred (10,600), and ten (10,570).
- Repeat with other numbers, such as 27,398; 4,218; and so on.

EXPLICIT INSTRUCTION

- Draw a place-value chart on the board. Review with students that moving to the left on the chart increases the values of the digits—each digit is 10 times the one to the right. Moving to the right on the chart decreases the values of the digits—each digit to the right is $\frac{1}{10}$, or divided by 10.
- Review the meaning of decimals (less than whole numbers). Write the number 1.45 in a place-value chart. Ask students to read the number aloud. (1 and 45 hundredths) If students say, “1 point 45,” explain that instead of saying *point* at the decimal, you say *and* to indicate that there are whole numbers and parts of whole numbers. Write 23.8 on the board and have students say the number aloud. (23 and 8 tenths)
- Introduce rounding decimals. Write 0.61 in a place-value chart on the board. Say, “I want to round this number to the nearest tenth. Who remembers the rules for rounding?” Solicit student responses.
 - Explain the steps for rounding. Look at which place value you are rounding to. Look at the place to the *right* of where you are rounding. If the digit in that place is 0, 1, 2, 3, or 4, round down, not changing the digit to the left. If the digit in that place is 5, 6, 7, 8, or 9, round the target digit up, increasing the digit by 1. Write abbreviated steps for rounding on the board for student reference.
 - Say, “To round this number, you need to look at the digit in the hundredths place. The digit is 1. Do you round up or down?” Have students indicate with a thumbs-up or a thumbs-down. Say, “You round down because 1 is not a high-enough digit to round up, so the digit in the tenths place stays the same.”
 - Model how to round 0.61 to 0.6. Caution students that they may want to change the tenths place from 6 to 5, but rounding down just means that the digit does not change. Use Copy Master 2 at the end of these teacher notes to provide more practice with rounding down. Make a copy of the master and, before each place-value chart, insert numbers that round down and either tenths or hundredths. By providing different starting numbers, the activity can be completed over and over and be a different activity each time.
 - Explain to students that the hundredths place becomes a zero, which is why you don’t write it in the answer.
 - Practice with other numbers, such as 0.87, 0.15, 0.23, and so on, having students use individual white boards to show their responses. Do not include whole numbers yet.
- Transition to rounding to hundredths. Write 0.494 in a place-value chart on the board. Explain that now you need to look at the digit in the thousandths place to determine whether you should round up or down. Ask students to show with a thumbs-up or a thumbs-down what they think. (down)
 - Model rounding the number in the place-value chart, highlighting that the digit in the hundredths place does not change. (0.49) Also, point out that the thousandths place becomes a zero, so you do not write it in your answer.
 - Practice with other numbers, such as 0.288, 0.713, 0.561, and so on, having students use individual white boards to show their responses. Do not include whole numbers yet.

- Transition to rounding numbers with whole numbers and decimals together. Write 31.61 on the board. Ask students, "If you want to round this number to the nearest tenth, what should you do?" (Look at the digit in the hundredths place; decide whether to round up or down.) Ask, "Does the fact that there are whole numbers on the left of the decimal change how you round?" (no) Explain that the digits on the left of the decimal are not affected when you round to the tenths and hundredths places unless a 9 in the tenths place is rounded up. In such a case, the number in the ones place increases by one.
 - Reinforce that the pattern for rounding is still the same. Model rounding 31.61 to the nearest tenth. (31.6) Remind students that you do not write the hundredths place in the answer because it is a zero.
 - Write 24.97 on the board. Work together to round to the nearest tenth. (25) Make sure students understand that rounding the 9 up results in a 0 in the tenths place, and that the zero is not included in the answer.
 - Practice with other numbers, such as 7.946, 204.133, 46.807, 45.96, and so on, having students use individual white boards to show their responses.

BREAK DOWN THE SKILLS

TEACH ACADEMIC VOCABULARY

- Read through the definition of **place value** with students .
 - Draw a place-value chart on the board, including tenths and hundredths as shown. Ask students to name each place. As needed, help them with the decimal places. Make sure they understand that numbers increase as they move left on the place-value chart from the decimal point and decrease as they move right.
- Remind students that **decimals** are numbers that are less than one whole.
 - Review the decimals information as a group. Explain that the digits to the right of the decimal point are less than a whole. Point out the highlighted places in the place-value chart.
 - Ask students to point to the place-value chart that has 26.35 in it. Ask students how to read the number (26 and 35 hundredths). If students say, "26 point 35," instruct them to use *and* to represent the decimal point, which indicates that you have a whole number *and* parts of a whole. Also, explain that after the *and*, you group the decimal together when saying it. (35 hundredths as opposed to 3 tenths and 5 hundredths)

Lesson 6 Round Decimals

Introduction
What Will I Learn?
• How do I round decimals to tenths and hundredths?

You can use the digits in place value to round decimals!

Break Down the Skills
Place value tells you the value of each digit in a number. Place value increases as you move left and decreases as you move right.

Hundreds	Tens	Ones	Tenths	Hundredths

Decimals are numbers that are less than one whole. A decimal point shows which part of a number is less than one whole.

Hundreds	Tens	Ones	Tenths	Hundredths

Any digits to the right of the decimal point are less than one whole.

decimal point
You round numbers to make calculations easier when you don't need an exact answer.
• You can round decimals by using the same process that you use to round whole numbers.

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- Tell students that you **round** numbers to make calculations easier when you don't need an exact answer. Ask students to think of situations when they might round numbers. (deciding how much money they need to buy something, deciding how many plates they need for a party, and so on) Tell them that the same procedure that you use to round whole numbers can be used to round decimals.
- Review the steps of rounding decimals together and work through rounding 0.45 to the nearest tenth. Students can use white boards to show their rounding. Ask students to explain their reasoning behind their answers.
- Round 2.724 with students using their white boards, walking them through the steps. Explain that the zero in the thousandths place is not included because you have rounded to the hundredth, so you no longer need to include the thousandths place.

Lesson 6 • Round Decimals

- Look at what place value you are rounding to.
- Look at the place to the right of where you are rounding
 - if the digit in that place is 0, 1, 2, 3, or 4, round down, not changing the digit to the left.
 - if the digit in that place is 5, 6, 7, 8, or 9, round your target digit up, increasing the digit by one.
- Round 0.45 to the nearest tenth:

Hundreds	Tens	Ones	Tenths	Hundredths
			4	5

You are rounding to this place.

Hundreds	Tens	Ones	Tenths	Hundredths
			4	5

Check the digit in this place. Is it 5 or greater?

Hundreds	Tens	Ones	Tenths	Hundredths
			5	0

Round up.

Rounding up changes the digit from a 4 to a 5.

Rounding changes the digit to a zero.

- Rounding 0.45 to the nearest tenth is 0.5. You don't write the hundredths place because it became a zero when you rounded to the tenths place.
- Round 2.724 to the nearest hundredth:

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
		2	7	2	4

- Look to the digit to the right in the thousandths place.
- Because the digit in the thousandths place is a 4, you need to round down, meaning that the digit in the hundredths place does not change.
- 2.724 rounded to the nearest hundredth is 2.72.

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GUIDED INSTRUCTION

- Read and discuss all the tips in conjunction with the related activities.
- Work through comparing decimals together. Have students compare 45.63 and 45.71. Take them through the process of analyzing each digit in the number to find where there is a difference. Ask students to explain how they know that 45.71 is greater than 45.63.
- Work together through the review of rounding whole numbers. Make sure that students understand when to round up or down. Have students show their answers on white boards. Correct any misconceptions.
- Introduce rounding with decimals by explaining that the process is the same as with whole numbers. Review each step to rounding and walk students through rounding 0.28. Have students partner to round 0.43 and compare answers.
 - Make sure to explain that when you round from hundredths to tenths, you do not include the zero value of the hundredths after you round, so rounding 0.28 is not 0.30 but 0.3. Mention that the answer is still correct if they do write the zero, but it is not necessary.
 - If students round 0.43 to 0.3, review that when rounding down, you do not change the target digit; it stays the same. Use Copy Master 2 at the end of these teacher notes to provide more practice.

Chapter 2 • Decimals

Guided Instruction

You can compare decimals to the hundredths place by using place value and $>$, $=$, $<$. Compare 45.60 and 45.71. Fill in the circle with the correct symbol.

45.63 45.71 same tens

45.63 45.71 same ones

45.63 45.71 different tenths: 0.7 is larger than 0.6, so 45.71 is greater.

You can use place value to round whole numbers.

If the digit to the right of the place that you're rounding to is 0, 1, 2, 3, or 4, you round down.

Round 1,235 to the nearest hundred: 1,200.

If the digit to the right of the place that you're rounding to is 5, 6, 7, 8, or 9, you round up.

Round 4,713 to the nearest thousand: 5,000.

You can round decimals by using the same strategies as rounding whole numbers.

Round 0.28 to the nearest tenth:

Look to the place to the right of what you are rounding to. You have an 8 in the hundredths place, so you need to round up.

Hundreds	Tens	Ones	Tenths	Hundredths
			2	8

Write the rounded number in the place-value chart:

Hundreds	Tens	Ones	Tenths	Hundredths
			3	0

Because the hundredths place now has a zero, you do not need to write it in your final answer.

0.28 rounded to the nearest tenth is 0.3.

Round 0.43 to the nearest tenth in the chart and on the blank below.

Hundreds	Tens	Ones	Tenths	Hundredths
			4	3

0.43 rounded to the nearest tenth is 0.4.

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Common Errors

Students may use the wrong direction for comparison symbols. Remind them that the open, greater section points toward the greater number.

- When shifting from rounding tenths to rounding hundredths, remind students that the pattern is the same, except now they are looking at a different digit when deciding how to round. Work through rounding 0.351 to the nearest hundredth. Have partners round 0.947 and 0.516. Check that answers are correct.
 - Make sure to explain that when you round from thousandths to hundredths, you do not include the zero value of the thousandths after you round, so rounding 0.516 is not 0.520 but 0.52. Again, mention that the answer is still correct if they do write the zero, but it is not necessary.
- Read and work through the rounding numbers with wholes and decimals problem, 41.68 to the nearest tenth.
 - Reinforce that the pattern for rounding is still the same. You start with the digit to the right of the target rounding place.
 - Have students use thumbs up or down on whether they think the need to round up or down. (up)
 - Have students complete the rounding. (41.7). Ask, "Do we need to include a zero in the hundreds place?" (no) If some students say yes, remind them that since they are rounding to tenths, they do not include hundredths.
 - Ask students what they notice about the digits to the left of the decimal when rounding whole numbers with tenths and hundredths. (The digits to the left of the decimal don't change.)

Lesson 4 • Round Decimals

Round 0.351 to the nearest hundredth:

Look to the place to the right of what you are rounding to. You have a 1 in the thousandths place, so you need to round down.

Hundredths	Tenths	Ones	Tenths	Hundredths	Thousandths
	0	3	5	1	

Write the rounded number in the place-value chart:

Hundredths	Tenths	Ones	Tenths	Hundredths	Thousandths
	0	3	5	0	

Because the thousandths place now has a zero, you do not need to write it in your final answer:
0.351 rounded to the nearest hundredth is 0.35.

Round 0.947 to the nearest hundredth:

Hundredths	Tenths	Ones	Tenths	Hundredths	Thousandths
	0	9	4	7	

0.947 rounded to the nearest hundredth is 0.95.

Round 0.516 to the nearest hundredth:

Hundredths	Tenths	Ones	Tenths	Hundredths	Thousandths
	0	5	1	6	

0.516 rounded to the nearest hundredth is 0.52.

You use the same process to round numbers that include whole numbers and decimals.

Round 41.68 to the nearest tenth:

Look to the place to the right of what you're rounding to. You have an 8 in the hundredths place, so you need to round up.

Hundredths	Tenths	Ones	Tenths	Hundredths
	6	4	1	8

Write the rounded number in the place-value chart:

Hundredths	Tenths	Ones	Tenths	Hundredths
	7	4	1	

41.68 rounded to the nearest tenth is 41.7.

4
Level 2
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Common Errors

Students may round the wrong digit. Provide a place-value chart or Copy Master 2 at the end of these teacher notes and ask them to point to the digit to which they are rounding.

- Review the rounding pattern again with students.
 - In pairs, have students work together to round 8.351 to the nearest tenth. Ask them to explain their reasoning for their answers. (You round up to 8.4 because the 5 in the hundredths place means to round up.)
 - Allow students to work individually or in pairs for rounding 16.439 and 320.188 to hundredths and 34.976 to tenths. After each sample, check student work and correct any misconceptions.
 - Discuss that, when rounding 34.976 to the nearest tenth, the 9 rounds up to 10, which results in needing to change the whole number in the ones place from 4 to 5.

Lesson 4 • Round Decimals

Use the pattern for rounding numbers to solve the following problems.

Look at what place value you are asking to round to. Look at the place to the right of where you are rounding.

If the digit in that place is 0, 1, 2, 3, or 4, round down, not changing the digit to the left.

If the digit in that place is 5, 6, 7, 8, or 9, round your target digit up, increasing the digit by one.

Round 8.351 to the nearest tenth:

Hundredths	Tenths	Ones	Tenths	Hundredths	Thousandths
	3	8	3	5	1

8.351 rounded to the nearest tenth is 8.4.

Round 16.439 to the nearest hundredth:

Hundredths	Tenths	Ones	Tenths	Hundredths	Thousandths
	4	1	6	3	9

16.439 rounded to the nearest hundredth is 16.44.

Round 320.188 to the nearest hundredth:

Hundredths	Tenths	Ones	Tenths	Hundredths	Thousandths
	1	3	2	0	8

320.188 rounded to the nearest hundredth is 320.19.

Round 34.976 to the nearest tenth:

Hundredths	Tenths	Ones	Tenths	Hundredths	Thousandths
	9	3	4	9	7

34.976 rounded to the nearest tenth is 35.0.

Round 58.371 to the nearest hundredth:

Hundredths	Tenths	Ones	Tenths	Hundredths	Thousandths
	3	5	8	3	7

58.371 rounded to the nearest hundredth is 58.37.

Round 8.09 to the nearest tenth: 8.1

Round 743.024 to the nearest hundredth: 743.02

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- Have students complete the final three exercises on their own (58.371, 8.09, and 743.024).
- If students need more practice before working on the independent exercises, use Copy Master 3 at the end of these teacher notes to have them write the decimals in the place-value charts. In each box, insert a number to be rounded. Use the directions at the bottom of each box when choosing numbers. By providing different starting numbers, the activity can be completed over and over and be a different activity each time.

Common Errors

Students may round up when a digit is 4 or smaller or down when a digit is 5 or higher. Review the problems in the lessons, focusing on looking to the place to the right and deciding whether that digit indicates rounding up or down.

When rounding down, students may round the targeted place down instead of leaving it as is (for example, rounding 0.71 down to 0.6). Remind students that they do not change that digit. If needed, clarify using a number line. Use Copy Master 2 at the end of these teacher notes to provide students with more practice rounding down.

INDEPENDENT PRACTICE

Practice 1 Questions

- Read the questions aloud and have students select or provide the answers. Review the answers.

Lesson 4 • Round Decimals

Independent Practice

Answer the questions that follow.

Practice 1

1. What is 4.54 rounded to the nearest tenth?
 A 4.4
 B 4.5
 C 4.6
 D 4.55

2. On the place-value chart, circle the digit to check to decide whether you round up or down when rounding to 0.481 to the nearest hundredth.

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
		0	4	8	1

3. Round 12.473 to the nearest hundredth.
 12.47

4. What is 5.563 rounded to the nearest hundredth?
 A 5.56
 B 5.55
 C 5.6
 D 5.57

5. Round 312.982 to the nearest hundredth.
 312.98

6 Level E Copying is prohibited.

Practice 2 Questions

- Ask students to read the questions and select or provide the answers independently. Review the answers.

Chapter 2 • Decimals

Practice 2

1. On the place-value chart, circle the digit to check to decide whether you round up or down when rounding to 0.73 to the nearest tenth.

Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths
		0	7	3	

2. What is 8.61 rounded to the nearest tenth?
 A 8.5
 B 8.1
 C 8.6
 D 8.7

3. Round 45.885 to the nearest hundredth.
 45.89

4. Round 0.98 to the nearest tenth.
 1

5. What is 4.186 rounded to the nearest hundredth?
 A 4.2
 B 4.18
 C 4.10
 D 4.19

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EXIT TICKET

- Have students fill in the Exit Ticket at the end of class. Before students start working, read through the story problem as a group.

Lesson 4 • Round Decimals

Exit Ticket

Juan collected data on how long a hummingbird stopped at his bird feeder in his backyard. He wants to add up how long it spent at his feeder each week. To make his calculations easier, he decides to round his data to the nearest tenth. Complete Juan's table by rounding each value to the nearest tenth.

Day of the Week	Time Spent at the Feeder (seconds)	Time Rounded to the Nearest Tenth
Monday	31.65	31.7
Tuesday	20.18	20.2
Wednesday	54.43	54.4
Thursday	12.31	12.3
Friday	23.97	24
Saturday	41.69	41.7
Sunday	39.52	39.5

The serial number on Juan's bird feeder is 31.692. Juan says it is his lucky number. What is his lucky number rounded to the nearest hundredth?
 31.69

On which day is the hummingbird time closest to Juan's lucky number?
 Monday

6 Level E Copying is prohibited.

ADDITIONAL SUPPORT

SUPPORT FOR STRUGGLING LEARNERS

- If students need more of a visual model to determine whether to round up or down, use Copy Master 1 at the end of these teacher notes. When using this copy master, either, before copying, add the numbers to be rounded in the blanks and add main number line numbers that will work with the number to be rounded or work with students to add the numbers. In a small group, students can practice plotting numbers that they are rounding on a number line to help them see why they round up or down. Be sure to include a number with a 5 in the place that they are rounding to show students that when a number is right in the middle, you round up.
- For students who are unsure of which digit to look at when rounding, have them write a place-value chart on their white boards. Model how to round 0.73 to the nearest tenth. Have them circle the place value on the chart that they are rounding to. Repeat with other decimals, such as 0.653, 0.49, 3.42, and so on.

SUPPORT FOR ENGLISH LANGUAGE LEARNERS

- English learners may be confused by the term *round*, expecting it to refer to a shape. Explain that *round* has multiple meanings, and as used in this lesson, you *round* numbers to the next place value to make calculations easier.
- Some English learners may have difficulty pronouncing *-th* and *-ths* at the end of *tenth* and *hundredth*. Have students practice saying their answers aloud and listen for the *-th*.
- Students may struggle to explain why they chose to round up, down, or to which place. Provide them sentence frames, such as "I rounded up/down because _____." "The problem says to round to the _____ place, so I looked at the digit in the _____ place and rounded _____."

EXTENSION ACTIVITIES

- Using Copy Master 3 at the end of these teacher notes, have students round such numbers as 10,320.78 to the nearest hundredth or round 4.078 to the nearest tenth.
- Give students a number, such as 234.892. Ask students to round the number to each place value: hundredths (234.89), tenths (234.9), ones (235), tens (240), and hundreds (200). Ask them to share any observations about what happens to the number when they round to each place and why. Ask students, "Which is the most accurate rounding? Which keeps us closest to the original number?" (rounding to the hundredths) Have them justify their responses.

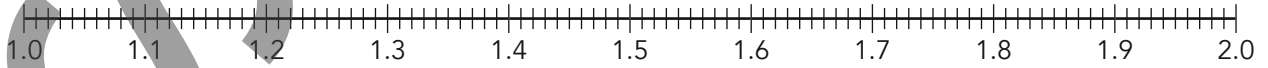
Name _____

Date _____

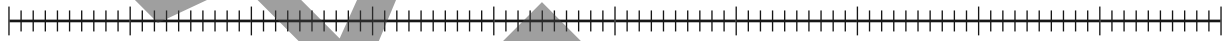
Label the number line based on the number that students are rounding. One sample is done for you.

Use the number line to round decimals.

Round to the nearest tenth: 1.46



Round to the nearest tenth: _____



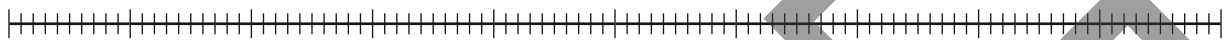
Round to the nearest tenth: _____



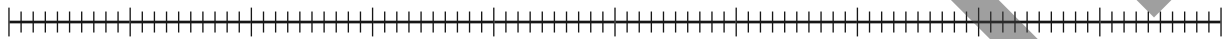
Round to the nearest tenth: _____



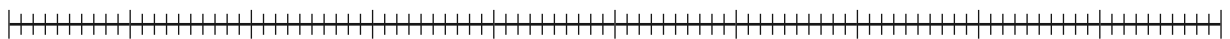
Round to the nearest hundredth: _____



Round to the nearest hundredth: _____



Round to the nearest hundredth: _____



Name _____

Date _____

Use the place-value chart to round decimals.

Round _____ to the nearest _____.

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			

_____ rounded to the nearest _____ is _____.

Round _____ to the nearest _____.

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			

_____ rounded to the nearest _____ is _____.

Round _____ to the nearest _____.

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			

_____ rounded to the nearest _____ is _____.

Round _____ to the nearest _____.

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			

_____ rounded to the nearest _____ is _____.

Round _____ to the nearest _____.

Hundreds	Tens	Ones		Tenths	Hundredths	Thousandths
			.			

_____ rounded to the nearest _____ is _____.

Name _____

Date _____

Round each decimal.

<p>Round _____ to the nearest tenth.</p> <p>[Insert a two-digit decimal.]</p>	<p>Round _____ to the nearest hundredth.</p> <p>[Insert a mixed number with place value in the thousandths.]</p>	<p>Round _____ to the nearest tenth.</p> <p>[Insert a mixed number with place value in the hundredths.]</p>
<p>Round _____ to the nearest tenth.</p> <p>[Insert a mixed number with place value in the hundredths.]</p>	<p>Round _____ to the nearest tenth.</p> <p>[Insert a two-digit decimal.]</p>	<p>Round _____ to the nearest hundredth.</p> <p>[Insert a three-digit decimal.]</p>
<p>Round _____ to the nearest hundredth.</p> <p>[Insert a mixed number with place value in the hundredths.]</p>	<p>Round _____ to the nearest tenth.</p> <p>[Insert a mixed number with place value in the hundredths.]</p>	<p>Round _____ to the nearest hundredth.</p> <p>[Insert a three-digit decimal.]</p>
<p>Round _____ to the nearest hundredth.</p> <p>[Insert a mixed number with place value in the thousandths.]</p>	<p>Round _____ to the nearest tenth.</p> <p>[Insert a two-digit decimal.]</p>	<p>Round _____ to the nearest hundredth.</p> <p>[Insert a mixed number with place value in the thousandths.]</p>
<p>Round _____ to the nearest tenth.</p> <p>[Insert a three-digit decimal.]</p>	<p>Round _____ to the nearest hundredth.</p> <p>[Insert a mixed number with place value in the thousandths.]</p>	<p>Round _____ to the nearest tenth.</p> <p>[Insert a mixed number with place value in the hundredths.]</p>