

ROUNDING ON A NUMBER LINE

ROUNDING WITHIN 1,000 | NEAREST HUNDRED AND TEN

PRINT AND DIGITAL

ACTIVITIES TO SUPPORT A **CONCEPTUAL UNDERSTANDING** OF ROUNDING NUMBERS

Gumball Rounding Round each number to the nearest 100. Shade the gumball to show the answer.

100 – light blue	400 – dark blue	700 – grey	1,000 – dark green
200 – yellow	500 – orange	800 – purple	
300 – light green	600 – red	900 – pink	

4 521 275 634 474 120

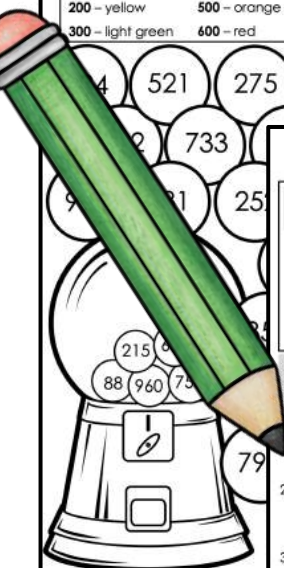
2 733

9 1 25

215

88 960 75

79



Round and Graph

Round each number to the nearest ten and write the correct space on the bar graph.

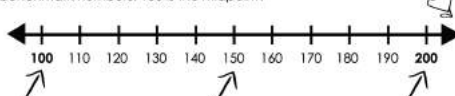
322	316	337	341	3
348	338	362	317	3
323	321	332	355	3
339	328	364	315	3

Use the graph to answer the questions.

- How many numbers rounded to 320?
- How many numbers rounded to 340?
- How many numbers rounded to 350?
- List two other numbers you could add to the "Rounds to 360" category.
- Using what you know about rounding, can you name 3 numbers that will round to

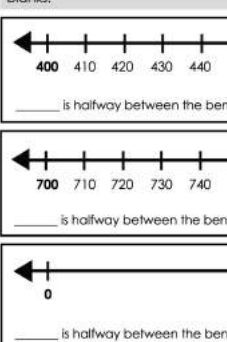
Finding the Midpoint

The **midpoint** is the **halfway point** between two **benchmark numbers**. Look at the number line below. 100 and 200 are the benchmark numbers. 150 is the **midpoint**.



Where Does The Number Belong?

Circle the midpoint on each of these blank number lines.

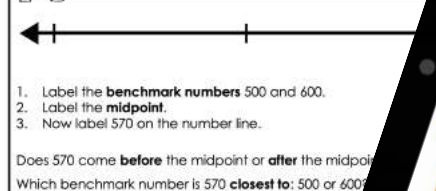


Where Does The Number Belong?

Now that we know what benchmark numbers and midpoints are, we can use them to find other numbers on the number line.

- Label the **benchmark numbers** 500 and 600.
- Label the **midpoint**.
- Now label 570 on the number line.

Does 570 come **before** the midpoint or **after** the midpoint?
Which benchmark number is 570 **closest to**: 500 or 600?




- Label the **benchmark numbers** 900 and 1,000.
- Label the **midpoint**.
- Now label 940 on the number line.

Does 940 come **before** the midpoint or **after** the midpoint?
Which benchmark number is 940 **closest to**: 900 or 1,000?

THINK ABOUT IT
Suppose the midpoint is 350. What are the benchmark numbers?

Ice Cream Rounding to the Nearest Ten

Round each number to the nearest ten and drag it to the correct ice cream cone.



1. Label the **benchmark numbers** 500 and 600.
2. Label the **midpoint**.
3. Now label 570 on the number line.

Does 570 come **before** the midpoint or **after** the midpoint?
Which benchmark number is 570 **closest to**: 500 or 600?

1. Label the **benchmark numbers** 900 and 1,000.
2. Label the **midpoint**.
3. Now label 940 on the number line.

Does 940 come **before** the midpoint or **after** the midpoint?
Which benchmark number is 940 **closest to**: 900 or 1,000?

THINK ABOUT IT
Suppose the midpoint is 350. What are the benchmark numbers?

SHELLEY GRAY

about this resource

How did you learn to round numbers? Did you learn a rhyme like, “Four or less, let it rest. Five or more, add one more?” A quick search online for rounding rules will result in loads of cute rhymes and tricks for rounding. But rhymes and tricks don’t teach our students the **true meaning** of rounding.

I’d like to encourage you to stop teaching the rounding rhymes, and focus on **real, conceptual understanding** with your students. Remember that the goal is deep understanding and number sense development, not simply getting a correct answer quickly.

Using Number Lines to Round

When we use number lines to round numbers, we allow our students to **see how rounding works** and **truly understand** it. When you place benchmark numbers and midpoints on a number line, it becomes clear which benchmark a number is closest to!

This resource will provide scaffolding to students as they learn the process of rounding on a number line.

In the Learning to Round section, students will learn about **benchmark numbers**, how to find **midpoints**, and how this can help them round to the **nearest hundred**.

In the Practice and Reinforcement section, students will be provided with opportunities to practice what they have learned and use their new rounding knowledge.

BONUS SECTION

The focus of this resource is on rounding to the nearest hundred within 1,000. However, there is also a **BONUS SECTION** included for rounding to the nearest ten within 1,000.

This resource is included in both a print and digital version so you can choose the version that best suits your needs.

the activities

In the **Learning to Round** section, you will find a variety of activities that lead students through the process of rounding in a way that is easy to understand. Students begin by learning about benchmark numbers and midpoints. Then they will learn how to identify which hundred a number is closer to, based on its location in relation to the benchmarks and midpoint. Near the end of this section they will move to rounding practice in a scaffolded way.

Identifying Benchmark Numbers

Look at the numbers below. Circle the ones that are **benchmark numbers**.

432 596 408 650

400 600

651 300

Benchmark Numbers

A **benchmark number** is a reference point. It is a number that is easy to work with. Numbers like 500, 600, or 1,000 are benchmark numbers.

This number line is labelled with **benchmark numbers**. How are they an equal distance apart?

300 400

- Use the benchmark numbers to show where 350 is on the number line.
- Now use the benchmark numbers to show where 450 is on the number line.

How did you use the benchmarks to find where 350 and 450 are on the number line?

What's Wrong With These Number Lines?

Each number line below contains a mistake. Explain the mistake and make the correction on the number line.

200 270

What's wrong with the middle number? How do you know?

Make the correction on the number line.

400 430

What's wrong with the middle number? How do you know?

Make the correction on the number line.

800 850

What's wrong with the middle number? How do you know?

Make the correction on the number line.

Finding the Midpoint

The **midpoint** is the **halfway point** between two **benchmark numbers**. Look at the number line below. 100 and 200 are the benchmark numbers. 150 is the midpoint.

100 110 120 130 140 150

benchmark number midpoint

Circle the midpoint on each of these blank number lines.

400 410 420 430 440 450

_____ is halfway between the benchmark numbers.

700 710 720 730 740 750

_____ is halfway between the benchmark numbers.

0 100 200

_____ is halfway between the benchmark numbers.

Label the Midpoint

On each number line below, label the two benchmark numbers and the midpoint.

Label the benchmark numbers 300 and 400. Then label the midpoint.

Label the benchmark numbers 700 and 800. Then label the midpoint.

Label the benchmark numbers 200 and 300. Then label the midpoint.

Label the benchmark numbers 0 and 1,000. Then label the midpoint.

THINK ABOUT IT

Suppose you are trying to explain to a friend what a midpoint is. How would you explain it?

Where Does The Number Belong?

Now that we know what benchmark numbers and midpoints are, we can use them to find other numbers on the number line.

1. Label the **benchmark numbers** 500 and 600.

2. Label the **midpoint**.

3. Now label 570 on the number line.

Does 570 come **before** the midpoint or **after** the midpoint? _____

Which benchmark number is 570 **closest to**: 500 or 600? _____

1. Label the **benchmark numbers** 900 and 1,000.

2. Label the **midpoint**.

3. Now label 940 on the number line.

Does 940 come **before** the midpoint or **after** the midpoint? _____

Which benchmark number is 940 **closest to**: 900 or 1,000? _____

THINK ABOUT IT

Suppose the midpoint is 350. What are the benchmark numbers? _____

Rounding to the Nearest Hundred

When we **round to the nearest hundred**, we find the hundred that a number is **closest to**. The hundreds are our benchmark numbers. Look at the number line below. Which hundred is 160 closest to: 100 or 200?

100 150 200

To round a number to the nearest hundred:

- find the **benchmark numbers**.
- find the **midpoint**.
- find the hundred that the number is **closest to**.

Rounding to the Nearest Hundred Practice

Round 720 to the nearest hundred.

720 is between these two hundreds: _____ and _____. The **midpoint** is _____. 720 is closer to this hundred: _____. The nearest hundred is _____.

Round 370 to the nearest hundred.

370 is between these two hundreds: _____ and _____. The **midpoint** is _____. 370 is closer to this hundred: _____. The nearest hundred is _____.

Rounding to the Nearest Hundred

Round 430 to the nearest hundred.

430 is between these two hundreds: _____ and _____. The **midpoint** is _____. 430 is closer to this hundred: _____. The nearest hundred is _____.

Round 865 to the nearest hundred.

865 is between these two hundreds: _____ and _____. The **midpoint** is _____. 865 is closer to this hundred: _____. The nearest hundred is _____.

Round 943 to the nearest hundred.

943 is between these two hundreds: _____ and _____. The **midpoint** is _____. 943 is closer to this hundred: _____. The nearest hundred is _____.

Name That Number

Look at the number line below.

300 400

Name 4 numbers that round to 300: _____

Name 4 numbers that round to 400: _____

Show all 8 numbers on the number line.

Rounding to the Nearest Hundred

Look at the number line below.

700

Name 4 numbers that round to 700: _____

Name 4 numbers that round to 800: _____

Show all 8 numbers on the number line.

Look at the number line below.

100

Name 4 numbers that round to 100: _____

Name 4 numbers that round to 200: _____

Show all 8 numbers on the number line.

Circle the numbers that round to 400.

493 380 478 413 370

312 431

420 362 460 359

Rounding to the Nearest Hundred Practice

Now it's time to practice rounding to the nearest hundred. Use this number line to **visualize** the **benchmark** and **midpoint** numbers.

Round each of these numbers to the nearest hundred.

Number	Nearest Hundred	Number	Nearest Hundred
678		945	
842		552	
131		273	
350		764	
449		181	

Round each of these midpoint numbers to the nearest hundred.

Round 450 to the nearest hundred.

Round 750 to the nearest hundred.

Round 650 to the nearest hundred.

THINK ABOUT IT

Rounding In Real Life

Why does rounding numbers matter? We use rounding all the time in real life!

Think about these real-life situations.

BAKE SALE

Your school is having a bake sale to raise money for a new play structure. Mrs. Baker's class raised \$350, Mrs. Phillip's class raised \$560, and Mr. Larsen's class raised \$170. They need to raise \$1,100 for the play structure.

About how much money did the three classes raise? (Round each one to the nearest hundred.) _____

Is rounding useful in this situation? Why or why not? _____

ROAD TRIP

You are planning a road trip for next summer. The first leg is 142 kilometers, the second leg is 318 kilometers, and the third leg is 280 kilometers. You round to the nearest hundred to figure out the total distance.

About how many km will you travel? _____

Is rounding useful in this situation? Why or why not? _____

the activities

In the **Practice and Reinforcement** section, you will find a variety of activities that reinforce the concepts that students learned in the first section. These are sure to keep students engaged while practicing rounding.

Rounding Donations

Your school is collecting donations for a local charity. To make it easier to count, you will place the donations in 3 different piles: donations of about \$100, donations of about \$200, and donations of about \$300.

Write each donation in the correct category.

\$ 90	\$ 340	\$ 250	\$ 150
\$ 120	\$ 170	\$ 110	\$ 70
\$ 230	\$ 190	\$ 280	\$ 270

Donations of About \$100	Donations of About \$200	Donations of About \$300

Look at the "About \$200" column. If you round each \$200 nearest 100, what is the value of the donations?

Now figure out the actual value. Is it close to the estimate?

Repeat this for the donations of about \$300. How does this compare to the actual value?

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School Store Rounding

Your school is opening the school store next week and you need to take inventory!

Number of
Pencils
Pens
Folders
Markers
Water Bottles

Answer the questions.

About how many items are for sale? Round each number to the nearest hundred to get your estimate.

Now figure out the actual number of items for sale at the store.

Was your estimate close to the actual number? How close?

In your opinion, is rounding useful in this type of situation? or why not?

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What Number Am I?

I have a 7 in my tens place and a 2 in my ones place. I can round to 500. What number am I?

I have a 5 in my tens place and a 0 in my ones place. I can round to 100. What number am I?

I am greater than 200, but less than 300. My tens digit is odd and my ones digit is a 1. I can round to 200. What two numbers could I be?

I am between 100 and 200. On a number line, I am closer to 200 than to 100. What are some numbers I could be?

It's your turn! Make up your own rounding riddles and solve them!

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Roll and Round

Roll three dice. Make the lowest possible number. Round it to the nearest hundred. Then make the highest possible number. Round it to the nearest hundred.

Dice Rolls	Lowest Possible Number	Round it to the nearest hundred.	Highest Possible Number	Round it to the nearest hundred.
2, 6, 1	126	100	621	600

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Gumball Rounding

Round each number to the nearest 100. Shade the gumball to show the answer.

100 - light blue	400 - dark blue	700 - grey	1,000 - dark green
200 - yellow	500 - orange	800 - purple	
300 - light green	600 - red	900 - pink	

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Rounding to the Nearest Hundred Maze

Beginning at **START**, round the number in the large box to the nearest hundred. Follow the path and then round the next number. Continue until you get to the finish.

START

450	370	270
260	750	820
130	80	350
90	540	990

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Rounding Tic Tac Toe

Game Instructions

Player 1 identifies a space and rounds the number to the nearest hundred. If it is correct, Player 1 draws an "X" in that space. If it is not correct, Player 2 then identifies a space and rounds the number to the nearest hundred. If Player 1 agrees that it is correct, Player 2 draws an "O". Continue taking turns until one player forms a horizontal, vertical, or diagonal line.

158	256	194
277	153	693
502	61	347
979	156	502
988	182	865
617	213	432
362	115	89
444	199	672
121	345	702
287	555	888

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Round and Graph

Round each number to the nearest hundred and write it in the correct space on the bar graph.

342	421	125	334	155	210
465	548	367	178	504	118
250	89	528	68	270	415
192	234	473	244	492	156

Use the graph to answer the questions.

- How many numbers rounded to 100?
- How many numbers rounded to 200?
- How many numbers rounded to 500?
- List two other numbers you could add to the "Rounds to 400" category.
- Using what you know about

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the activities

In the **BONUS** section, you will find a variety of activities to teach and reinforce rounding to the **nearest ten** within 1,000. Students will also work with rounding numbers to the nearest hundred **AND** ten.

Benchmark Numbers

We can round a 3-digit number to the nearest ten instead of hundred, but we need to use **different benchmark numbers**. A benchmark number is a number that is easy to work with.

To round to the nearest ten, we will use benchmarks like 400, 800, or 300.

This number line is labelled with benchmark numbers.

1. Use the **benchmark numbers** to show where 412 is.

2. Now use the **benchmark numbers** to show where 412 is.

How did you use the benchmarks to find where 412 is?

Find the Midpoint

Now it's your turn! Fill in the missing numbers on the number line. Circle the midpoint and fill in the blanks.

_____ is halfway between the benchmark numbers _____.

_____ is halfway between the benchmark numbers _____.

_____ is halfway between the benchmark numbers _____.

_____ is halfway between the benchmark numbers _____.

Where Does The Number Go?

Now that we have worked with benchmark midpoints, we can use them to find other numbers.

1. Label the **benchmark numbers** 510 and 520.

2. Label the **midpoint**.

3. Now label 517 on the number line.

Does 517 come **before** the midpoint or **after** the midpoint?

Which benchmark number is 517 **closest** to: 510 or 520?

1. Label the **benchmark numbers** 280 and 290.

2. Label the **midpoint**.

3. Now label 284 on the number line.

Does 284 come **before** the midpoint or **after** the midpoint?

Which benchmark number is 284 **closest** to: 280 or 290?

THINK ABOUT IT

Suppose the midpoint is 635. What are the benchmark numbers?

Rounding to the Nearest Ten within One Thousand

When we **round to the nearest ten**, we find the **midpoint**. The tens are our **benchmark numbers**. Which ten is 566 closest to: 560 or 570?

To round a number to the nearest ten, we:

- find the **benchmark numbers**.
- find the **midpoint**.
- find the ten that the number is **closest** to.

Round 678 to the nearest ten.

- 678 is between these two tens: _____ and _____. These are the **benchmark numbers**.
- The **midpoint** is _____.
- 678 is closer to this ten: _____. This means that 678 rounded to the nearest ten is _____.

Round 452 to the nearest ten.

- 452 is between these two tens: _____ and _____. These are the **benchmark numbers**.
- The **midpoint** is _____.
- 452 is closer to this ten: _____. This means that 452 rounded to the nearest ten is _____.

Rounding to the Nearest Ten

Round 134 to the nearest ten.

- 134 is between these two tens: _____ and _____. These are the **benchmark numbers**.
- The **midpoint** is _____.
- 134 is closer to this ten: _____. This means that 134 rounded to the nearest ten is _____.

Round 346 to the nearest ten.

- 346 is between these two tens: _____ and _____. These are the **benchmark numbers**.
- The **midpoint** is _____.
- 346 is closer to this ten: _____. This means that 346 rounded to the nearest ten is _____.

Round 971 to the nearest ten.

- 971 is between these two tens: _____ and _____. These are the **benchmark numbers**.
- The **midpoint** is _____.
- 971 is closer to this ten: _____. This means that 971 rounded to the nearest ten is _____.

THINK ABOUT IT

Why is the midpoint useful?

Rounding the Midpoint

When we round the midpoint number between two tens, we round **up** to the nearest ten.

Look at the number line below. Suppose you are rounding 635 to the nearest ten. Because it is the midpoint, it will round **UP** to 640.

Round each of these midpoint numbers to the nearest ten.

Round 365 to the nearest ten. _____

Round 715 to the nearest ten. _____

Round 935 to the nearest ten. _____

THINK ABOUT IT

If you are rounding 485 to the nearest ten, does it round to 480 or 490?

Rounding to the Nearest Ten Practice

Now it's time to practice rounding to the nearest ten. Use this number line to **visualize** the **benchmark** and **midpoint** numbers.

Round each of these numbers to the nearest ten.

Number	Nearest Ten	Number
177		849
792		685
325		553
616		934
481		268

Round each number to the nearest ten. Shade the legend below.

Rounds to 120 Rounds to _____

Rounds to 140 Rounds to _____

122 145 132 139

125 119 142

Rounding In Real Life

Why does rounding numbers matter? We use rounding the time in real life!

Think about these real-life situations.

LEGO TOWER

Your assignment in science class is to build the tallest Lego tower with your small group. You have 202 Legos, Jose has 315, and Carlos has 184. You will need about 1,000 Lego pieces. You decide to round to the nearest ten.

About how many Lego pieces do you have?

Is rounding useful in this situation? Why or why not?

BASEBALL GAME

At the baseball concession stand, 243 people ordered hot dogs at Game #1, 184 people at Game #2, and 312 people at Game #3. The manager asked how many hot dogs were sold, they rounded to the nearest ten.

About how many hot dogs were sold at all three games?

Is rounding useful in this situation? Why or why not?

Rounding Practice: Nearest Ten and Hundred

Now it's time to practice rounding to the nearest ten and hundred. Use this number line to **visualize** the **benchmark** and **midpoint** numbers.

Round each number to the **nearest hundred** and **nearest ten** using the legend below.

Rounds to 300 Rounds to 400

543 315 387 250

350 331 445 490

Rounds to 540 Rounds to 550

548 563 555 540

544 545 537 550

Rounding to the Nearest Ten and Hundred Practice

Use the number bank to complete the chart.

Hint: You will not use all the numbers.

NUMBER BANK					
630	980	970	710	1,000	630
354	714	440	830	900	631
800	400	848	690	200	230

Number	Round to the nearest hundred.	Round to the nearest ten.
436	400	
977		350
889	600	
	700	
225	200	

digital version

This resource is also provided to you in a **digital format**! This is not simply a copy of the PDF with text boxes inserted – rather, this is a version that is **optimized for digital use** with color images and moveable pieces. This digital version is provided in Google Slides™ format.

Ice Cream Rounding to the Nearest Ten

Round each number to the nearest ten and drag it to the correct ice cream cone.

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Drag the arrow to the midpoint on each of the number lines. Then fill in the blanks.

920 921 922 923 924 925 926 927 928 929 930

_____ is halfway between the benchmark numbers _____ and _____.

750 751 752 753 754 755 756 757 758 759 760

_____ is halfway between the benchmark numbers _____ and _____.

270 275 280

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Rounding to the Nearest Hundred Practice

Now it's time to practice rounding to the nearest hundred. Use this number line to visualize the benchmark and midpoint numbers.

Round each number to the nearest hundred. Highlight each one using the legend below.

Number	Nearest Hundred
45	
52	
73	
64	
81	

RED: Rounds to 200
BLUE: Rounds to 400
YELLOW: Rounds to 300
ORANGE: Rounds to 500

334, 451, 188, 210, 525, 270, 547, 432, 250, 390

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Name That Number

370 380

Name 4 numbers that round to 370.

Name 5 numbers that round to 380.

Drag the 9 numbers you named to where they belong on the number line.

379, 378, 372, 376, 373, 371, 377, 374, 375

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Highlight the numbers that round to 400.

380, 478, 413, 332, 493, 370, 390, 312, 447, 420, 431, 483, 362, 460, 359

Drag the highlighters.

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Where Does the Number Belong?

Now that we know what benchmark numbers and midpoints are, we can use them to find other numbers on the number line.

1. Label the benchmark numbers 500 and 600.
2. Label the midpoint.
3. Now drag 570 to where it belongs on the number line.

Does 570 come before the midpoint or after the midpoint?
Which benchmark number is 570 closest to: 500 or 600?

1. Label the benchmark numbers 900 and 1,000.
2. Label the midpoint.
3. Now drag 940 to where it belongs on the number line.

Does 940 come before the midpoint or after the midpoint?
Which benchmark number is 940 closest to: 900 or 1,000?

THINK: Suppose the midpoint is 350. What are the benchmark numbers?

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I can't wait to hear your success stories as you teach rounding in a **conceptual way** that allows students to truly build **deep understanding!**

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Supplementing This Resource

If you are looking for ways to supplement this resource with concrete activities (which I highly recommend), please see this post on my website, where I offer practical ideas for teaching rounding for true understanding using the CRA Model as a basis.

