

# ROUNDING ON A NUMBER LINE

ROUNDING TO THE NEAREST TEN | NUMBERS TO 100

PRINT AND DIGITAL


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

Name: \_\_\_\_\_

### Identifying Benchmark Numbers

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

47 59 60 48 64  
80 75 76 57 50 30  
40

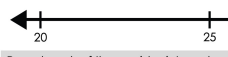


Name: \_\_\_\_\_

### Rounding the Midpoint

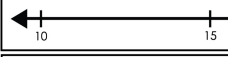
When we round the midpoint number between two tens, we round **up** to the nearest ten.

Look at the number line below. Suppose you are rounding 25 to the nearest ten. Because it is the midpoint, it will round **UP** to 30.

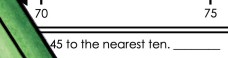


Round each of these midpoint numbers to the nearest ten.


Round 15 to the nearest ten. \_\_\_\_\_



Round 75 to the nearest ten. \_\_\_\_\_



Round 45 to the nearest ten. \_\_\_\_\_



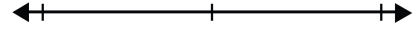
Explaining \_\_\_\_\_

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Name: \_\_\_\_\_

### 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

Number	Nearest Ten
76	
43	
12	
35	
34	

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

Rounds to 20: **RED**

Rounds to 40: **BLUE**

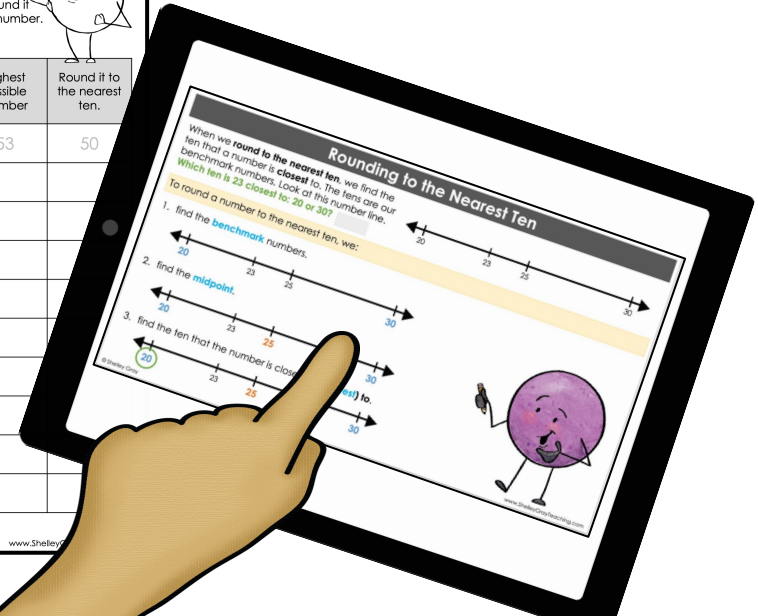

18 38 29 52

Name: \_\_\_\_\_

### Roll and Round

Roll two dice. Make the lowest possible number. Round it to the nearest ten. Then make the highest possible number. Round it to the nearest ten.

Dice Rolls	Lowest Possible Number	Round it to the nearest ten.	Highest Possible Number	Round it to the nearest ten.
3, 5	35	40	53	50



The tablet shows a digital worksheet titled "Rounding to the Nearest Ten". It includes instructions: "When we round to the nearest ten, we find the benchmark numbers. Look at this number line. Which ten is 25 closest to: 20 or 30?" and three numbered steps: "1. find the benchmark numbers.", "2. find the midpoint.", and "3. find the ten that the number is closest to." The number line shows 20, 25, and 30, with 25 highlighted in yellow. A cartoon pencil character is also visible on the tablet screen.

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 ten a number is closest to!

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

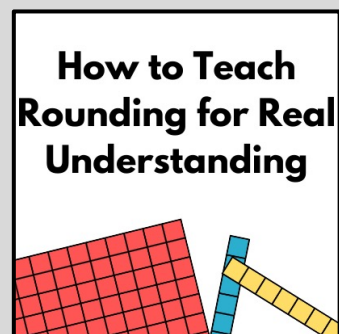
In the Learning to Round section, students will learn about **benchmark numbers**, how to find **midpoints**, and how this can help them round to the **nearest ten**.

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

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

## 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.



# 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 ten 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.

### Benchmark Numbers

A **benchmark number** is a reference point, a number that is easy to work with. Numbers like 50, 75 or 100 are benchmark numbers.

This number line is labelled with benchmark numbers.

- Use the benchmark numbers to show where 30 is on the number line.
- Now use the benchmark numbers to show where 41 is on the number line.

How did you use the benchmarks to find where 30 and 41 are on the number line?

### Identifying Benchmark Numbers

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

47 59 60 48  
80 75 76  
40 67

Now place the benchmark numbers (the ones you circled) on the number line below.

Next, choose 5 of the other numbers (the ones you did not circle) and add them to the number line.

### What's Wrong?

This number line shows the benchmark numbers 30, 40, and 50. What's wrong with this number line? Explain.

### 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.

Number line 1: 90, 93. What's wrong with the middle number? How do you know? Make the correction on the number line.

Number line 2: 50, 55. 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. 10 and 20 are the benchmark numbers. 15 is the midpoint.

Circle the midpoint on each of these number lines and label it.

Number line 1: 10, 11, 12, 13, 14, 15, 16, 17, 18. 15 is halfway between the benchmark numbers.

Number line 2: 70, 71, 72, 73, 74, 75, 76, 77, 78. 72.5 is halfway between the benchmark numbers.

### Rounding to the Nearest Ten

When we **round to the nearest ten**, we find the ten that a number is closest to. The tens are our benchmark numbers. Look at the number line below. Which ten is 23 closest to: 20 or 30?

To round a number to the nearest ten, we:

- find the **benchmark numbers**.
- find the **midpoint**.
- find the ten that the number is closest (or nearest) to.

Round 32 to the nearest ten.

- 32 is between these two tens: 30 and 40. These are the **benchmark numbers**.
- The **midpoint** is 35.
- 32 is closer to this ten: 30. This means that 32 rounded to the nearest ten is 30.

### Rounding to the Nearest Ten

Round 83 to the nearest ten.

- 83 is between these two tens: 80 and 90. These are the **benchmark numbers**.
- The **midpoint** is 85.
- 83 is closer to this ten: 80. This means that 83 rounded to the nearest ten is 80.

Round 96 to the nearest ten.

- 96 is between these two tens: 90 and 100. These are the **benchmark numbers**.
- The **midpoint** is 95.
- 96 is closer to this ten: 100. This means that 96 rounded to the nearest ten is 100.

Round 63 to the nearest ten.

- 63 is between these two tens: 60 and 70. These are the **benchmark numbers**.
- The **midpoint** is 65.
- 63 is closer to this ten: 60. This means that 63 rounded to the nearest ten is 60.

### Label the Midpoint

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

Label the benchmark numbers 20 and 30. Then label the midpoint.

Label the benchmark numbers 90 and 100. Then label the midpoint.

Label the benchmark numbers 50 and 60. Then label the midpoint.

Label the benchmark numbers 40 and 50. Then label the midpoint.

### 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** 20 and 30.
- Label the **midpoint**.
- Now label 24 on the number line.

Does 24 come **before** the midpoint or **after** the midpoint? \_\_\_\_\_

Which benchmark number is 24 **closest to**: 20 or 30? \_\_\_\_\_

### Where Does The Number Belong?

- Label the **benchmark numbers** 90 and 100.
- Label the **midpoint**.
- Now label 96 on the number line.

Does 96 come **before** the midpoint or **after** the midpoint? \_\_\_\_\_

Which benchmark number is 96 **closest to**: 90 or 100? \_\_\_\_\_

### Where Does The Number Belong?

- Label the **benchmark numbers** 50 and 60.
- Label the **midpoint**.
- Now label 57 on the number line.

Does 57 come **before** the midpoint or **after** the midpoint? \_\_\_\_\_

Which benchmark number is 57 **closest to**: 50 or 60? \_\_\_\_\_

### Where Does The Number Belong?

- Label the **benchmark numbers** 80 and 90.
- Label the **midpoint**.
- Now label 84 on the number line.

Does 84 come **before** the midpoint or **after** the midpoint? \_\_\_\_\_

Which benchmark number is 84 **closest to**: 80 or 90? \_\_\_\_\_

### Name The Nearest Ten

Look at the number line below.

Name 4 numbers that round to 40: \_\_\_\_\_

Name 4 numbers that round to 50: \_\_\_\_\_

Show all 8 numbers on the number line.

Look at the number line below.

Name 4 numbers that round to 70: \_\_\_\_\_

Name 4 numbers that round to 80: \_\_\_\_\_

Show all 8 numbers on the number line.

Look at the number line below.

Name 4 numbers that round to 10: \_\_\_\_\_

Name 4 numbers that round to 20: \_\_\_\_\_

Show all 8 numbers on the number line.

Circle the numbers below that round to 50.

49 58 51 57 41 43 47 44 59

### Rounding the Midpoint

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

**THINK ABOUT IT** Suppose you are trying to round 25 to the nearest ten. How would you explain to a friend why you round up to 30?

Look at the number line below. Suppose you are rounding 25 to the nearest ten. Because it is the midpoint, it will round **UP** to 30.

Round each of these midpoint numbers to the nearest ten.

15 rounds to the nearest ten: 20

75 rounds to the nearest ten: 80

45 rounds to the nearest ten: 50

**THINK ABOUT IT** If you are rounding 95 to the nearest ten, does it round up or down? \_\_\_\_\_

### Rounding to the Nearest Ten

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

Round each of these numbers to the nearest ten.

Number	Nearest Ten	Number	Nearest Ten
76		91	
43		28	
12		64	
35		75	
34		18	

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

Rounds to 20: RED

Rounds to 30: YELLOW

Rounds to 40: BLUE

Rounds to 50: ORANGE

18 38 28 44

### Rounding In Real Life

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

**COMMUNITY BBQ**

The organizer of a community BBQ needs to buy enough supplies for everyone. Last year 76 people attended the BBQ, and she about the same this year.

**About how many people should she buy supplies for?** \_\_\_\_\_

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

**BIRTHDAY PARTY PICK-UPS**

You and your mom are picking up friends for a birthday party. You need to get to the first friend's house, 7 minutes to get to the second friend's house, and 16 minutes to get to the third friend's house.

**About how long** will it take to pick up all your friends? \_\_\_\_\_

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

**PIANO RECITAL**

51 people attended this year's piano recital. When your grandpa asks, "How many people were there?" you decide to round to the nearest ten.

**About how many people were at the recital?** \_\_\_\_\_

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

**PAYING FOR A NEW TOY**

You are at the store paying for a new toy. The total comes to \$24. You decide to round it to the nearest ten and give the cashier that amount of money.

**How much money do you give the cashier?** \_\_\_\_\_

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

**IT'S YOUR TURN**

Name another situation where rounding would be useful. \_\_\_\_\_

Name another situation where rounding would not be useful. \_\_\_\_\_

# 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 class is raising money for the school. You will place the donations in 3 different piles: donations of about \$20, and donations of about \$10, and donations of about \$5.

Write each donation in the correct category.

\$ 33	\$ 24	\$ 23	\$ 13
\$ 25	\$ 14	\$ 5	\$ 15
\$ 8	\$ 6	\$ 28	\$ 27

Donations of About \$10	Donations of About \$20

If you round each \$10 donation to the nearest ten, how much money do you have?

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

Repeat this for the donations of about \$20 and about \$5. Compare to the actual?

### Rounding Books

Your school is holding a book sale next week. To get enough books for the sale, you've asked families to donate any books they no longer use. Each day, books are dropped off at the school. Here are the exact numbers of books that are dropped off each day.

Number of Books
Day 1
Day 2
Day 3
Day 4
Day 5

Answer the questions.

About how many books have been dropped off? Round the nearest ten to get your estimate.

Now figure out the actual number of books that were dropped off.

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

### What Number Am I?

I have a 4 in my ones place. I can round to 30. What number am I?

I am greater than 50, but less than 55. My ones digit is even. I can round to 50. What two numbers could I be?

I am between 40 and 50. On a number line, I am closer to 40 than to 50. What are some numbers I could be?

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

### Roll and Round

Roll two dice. Make the lowest possible number, to the nearest ten. Then make the highest possible number, round it to the nearest ten.

Dice Rolls	Lowest Possible Number	Round it to the nearest ten.
3, 5	35	40

### Gumball Rounding

10 - light blue	40 - dark blue	70 - grey	100 - dark green
20 - yellow	50 - orange	80 - purple	
30 - light green	60 - red	90 - pink	

### Rounding to the Nearest Ten Maze

Round each number to the nearest ten to get from the start to the finish.

START

### Ice Cream Rounding

Write each number on the correct scoop of ice cream.

42	68	27	18	36
33	22	54	61	75
74	83	12	45	7

### Rounding Tic Tac Toe

Game Instructions

Player 1 identifies a space and rounds the number to the nearest ten. If Player 2 agrees that it is correct, Player 1 draws an "X" in that space. If it is incorrect, Player 1 does not draw an "X." Player 2 then identifies a space and rounds the number to the nearest ten. 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.

68	12	14	44
5	73	89	75
52	61	47	99
94	76	61	27
72	46	34	71
55	24	83	15
13	62	52	25
88	75	22	65
44	91	67	39

### Round and Graph

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

24	42	18	64	97	81	62	22	84
56	78	55	21	83	76	17	58	44
15	63	96	77	35	95	36	82	99
98	19	57	23	59	41	60	39	61

Use the graph to answer the questions.

- How many numbers rounded to 40? \_\_\_\_\_
- How many numbers rounded to 80? \_\_\_\_\_
- How many numbers rounded to 100? \_\_\_\_\_
- List two other numbers you could add to the "Rounds to 40" category. \_\_\_\_\_
- Using what you know about rounding, can you name 3 numbers greater than 100 that will round to 100? \_\_\_\_\_

20	40	60	80	100
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# 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.

### Identifying Benchmark Numbers

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

47 80 60 77 48 57 64 30

40 59 76 67 70

Now place the benchmark numbers (the ones you highlighted) on the number line below.

Next, choose 5 of these numbers and drag them to where they belong on the number line.

64 67 77 48 47 33

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### Rounding Donations

Your class is raising money for the school. To make it easier to count, you will place the donations in 3 different piles: donations of **about \$10**, donations of **about \$20**, and donations of **about \$30**.

Drag each donation to the correct category.

Donations of About \$10	Donations of About \$20
\$15 \$13 \$28 \$27 \$23	
\$24 \$22 \$5 \$17 \$12	
\$8 \$25 \$6 \$32 \$19	

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### 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	Nearest Ten
76		91	
43		28	
12		64	
35		75	
34		18	

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

**RED:** Rounds to 20  
**BLUE:** Rounds to 40  
**YELLOW:** Rounds to 30  
**ORANGE:** Rounds to 50

29 52 21 33 18 28 44 38 47 23

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### Benchmark Numbers

A **benchmark number** is a reference point. It is a "friendly" number that is easy to work with. Numbers like 10, 20, 25, 30, 50, 75 or 100 are benchmark numbers.

This number line is labelled with benchmark numbers.

10 20 30

1. Drag the star to show where 25 is located.  
2. Drag the circle to show where 12 is located.

How did you use the benchmarks to find where 25 was located? Explain.

How did you use the benchmarks to find where 12 was located? Explain.

Name four other numbers you could add to the number line **between** the benchmarks 20 and 30.

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Round 32 to the nearest ten.

1. 32 is between these two tens: \_\_\_ and \_\_\_. These are the **benchmark** numbers.

2. The **midpoint** is \_\_\_.

3. 32 is closer to this ten: \_\_\_. This means that 32 rounded to the nearest ten is \_\_\_.

Round 57 to the nearest ten.

1. 57 is between these two tens: \_\_\_ and \_\_\_. These are the **benchmark** numbers.

2. The **midpoint** is \_\_\_.

3. 57 is closer to this ten: \_\_\_. This means that 57 rounded to the nearest ten is \_\_\_.

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

10 11 12 13 14 15 16 17 18 19 20

\_\_\_ is halfway between the benchmark numbers \_\_\_ and \_\_\_.

70 71 72 73 74 75 76 77 78 79 80

\_\_\_ is halfway between the benchmark numbers \_\_\_ and \_\_\_.

50 75 100

\_\_\_ is halfway between the benchmark numbers \_\_\_ and \_\_\_.

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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!**

[www.ShelleyGrayTeaching.com](http://www.ShelleyGrayTeaching.com)