

Round and Round We Go

(Multidigit Numbers)

Objective

Students will be able to...

- round multidigit whole numbers to any place.

Materials

- pencil (one per student)
- Rounding Practice worksheet

Social Emotional Learning

Responsible Decision Making: Students use and explain reasoning strategies for their choice of appropriate benchmark numbers. This helps develop strong decision-making skills.

Relationship Skills: Students work together with partners to practice collaboration in order to solve problems. Students are encouraged to seek help when they do not understand the academic concept.

Social Awareness: Students are given the opportunity to demonstrate respect for others' reasoning processes and ideas.

Key Terms

Term	Definition
benchmark number	a number that is a standard or point of reference against which things may be compared or assessed
midpoint	the point halfway between two benchmarks, often used in rounding
round	to approximate a number to the nearest specified value

Connect

Step 1



Engage the group in a general discussion about rounding, followed by defining the importance of rounding as a mathematical and real-world strategy.

Step 2

Building on the discussion, emphasize the purpose of rounding.

Answer Key

Answers will vary but may include:

- Rounding makes it easier to quickly estimate or perform calculations.
- Rounding involves finding a specific place in a number and changing the numeral in that place to the next closest value that's specified.
- Rounding helps us add and subtract numbers faster.
- Rounding numbers doesn't give us exact calculations.

Note: It is important to steer clear of rounding jingles and/or phrases such as “rounding up” or “rounding down” as this lesson involves a conceptual approach that includes a horizontal number line. Such language may confuse students.

Demonstrate



Step 1

Distribute Rounding Practice worksheet to each student. Explain that a number line provides a visual example of where numbers are in relation to benchmark numbers and the midpoint. Refer to the definition of benchmark number in the vocabulary section and provide examples if necessary. Introduce the worksheet and explain that they will practice rounding multidigit numbers to different places.

Step 2

Refer to Number Line 1 explain that when rounding the number 43,265,107 to the nearest million, the lesser benchmark number will be located on the left side of the number line and the greater benchmark number will be located on the right side of the number line.

Step 3

On Number Line 1, write 43,000,000 below the leftmost tick mark and 44,000,000 below the rightmost tick mark. Have students do the same on their handouts. Explain to students that the number to be rounded falls between those two benchmark numbers.

Step 4

Discuss the importance of the midpoint when rounding numbers. Explain that the midpoint helps identify which half of the number line the rounding number belongs to. Tell students that the midpoint number is halfway between the two benchmark numbers.

Write 43,500,000 below the midpoint tick mark on Number Line 1. Have students do the same on their handouts. If necessary, tick marks may be added to the line to prove that 43,500,000 is halfway between the benchmark numbers.

Step 5

Have students take turns showing you the estimated location of the rounding number on the number line. Revisit Steps 2-4 if necessary. After students have had an opportunity to share the location of their estimates, show them the approximate location. Explain to them that since the rounding number is located closer to the lesser benchmark, it rounds to the number 43,000,000. Circle that benchmark on the number line.

Practice



Step 1

Pair students off and draw attention to Number Line 2 on the worksheet. Explain to students that they will work with their partner to round the same number as before to the ten-thousands place this time. Explain that the benchmark numbers will be different because the place they are rounding to is different.

Step 2

Allow students to work with their partners to determine the benchmark numbers and the midpoint number. Provide any necessary feedback and direct students to write those numbers in the appropriate places below the number line.

Answer Key

- lesser benchmark: 43,260,000
- midpoint: 43,265,000
- greater benchmark: 43,270,000

Step 3

Guide students to the midpoint number that they just wrote and ask them what the next step is. Provide necessary feedback.

Answer Key

Next step: Determine the approximate location of the rounding number on the number line.

Step 4

Direct students to work with their partners to estimate the location of the rounding number. Then have students determine which benchmark number the rounding number is closest to.

Step 5

Reinforce that when rounded to the nearest ten thousand, the number 43,265,107 rounds to 43,270,000. Direct students to circle the greater benchmark.

Step 6

If time permits, direct students to independently round the same number to the nearest thousand and record their work on Number Line 3.

Answer Key

Number Line 3

- rounds to: 43,270,000
- lesser benchmark: 43,265,000
- midpoint number: 43,265,500
- greater benchmark: 43,270,000

Accommodation: Reduce the number of digits in the rounding number. If beginning with a smaller number, continue to increase the number of digits as students demonstrate proficiency.

Accommodation: Provide one benchmark or the midpoint number for the students.

Accommodation: Break the lesson into sections and focus on only one concept: benchmarks, midpoint numbers, or plotting the rounding number on the number line.

Extension: Allow students to create a game (e.g., matching or “I Have... Who Has...?” games) that involves rounding multi-digit numbers to any place.

Rounding Practice Sheet

Term	Definition
benchmark number	a number that is a standard or point of reference against which things may be compared or assessed
midpoint	the point halfway between two benchmarks, often used in rounding
round	to approximate a number to the nearest specified value

Number Line 1

Round 43,265,107 to the nearest million.

Determine the benchmark numbers and the midpoint. Use the number line to round.

**Number Line 2**

Round 43,265,107 to the nearest ten thousand.

Determine the benchmark numbers and the midpoint. Use the number line to round.

**Number Line 3**

Round 43,265,107 to the nearest thousand.

Determine the benchmark numbers and the midpoint. Use the number line to round.



