

Rounding Whole Numbers

Math Focus Points

- Using place value understanding to round whole numbers to the nearest ten or hundred
- Telling time to the nearest 5 minutes and measuring time intervals in minutes
- Representing 3-digit numbers using expanded form

Vocabulary

nearest ten
nearest hundred
expanded form

Today's Plan

1 ACTIVITY Introducing *What Time Is It?*



- Demonstration clock; student clocks

2 ACTIVITY Rounding to Tens and Hundreds



- Student Activity Book*, pp. 22A–22B or C10–C11, **Rounding to Tens and Rounding to Hundreds** Make copies. (as needed)

3 DISCUSSION Expanded Form and Rounding



- Students' completed copies of *Student Activity Book*, p. 22B or C11 (from Activity 2)

4 SESSION FOLLOW-UP Daily Practice

- Student Activity Book*, p. 22D or C12, **Rounding to Tens and Hundreds** Make copies. (as needed)

Ten-Minute Math

NOTE The Ten-Minute Math activity for this unit, *What Time Is It?*, is introduced in this session. Plan to do today's Ten-Minute Math sometime after math class, or if it is not possible, do the other Ten-Minute Math activity in this unit, *Today's Number*, with which your students are familiar.

What Time Is It? Ask students to set their clocks to 2:00. Then write 2:00 on the board and set the large demonstration clock to 2:00.

- What would the clock look like when the minute hand goes five minutes past 2:00?
What time is this?

Write 2:05 on the board and move the minute hand five minutes on the demonstration clock, counting by ones as you go. Tell students this time can be read as 2:05 or five minutes past 2 o'clock. In pairs, students practice setting their clocks to 1:05, 6:05, and 12:05.

1

ACTIVITY

Introducing
What Time Is It?

15 MIN

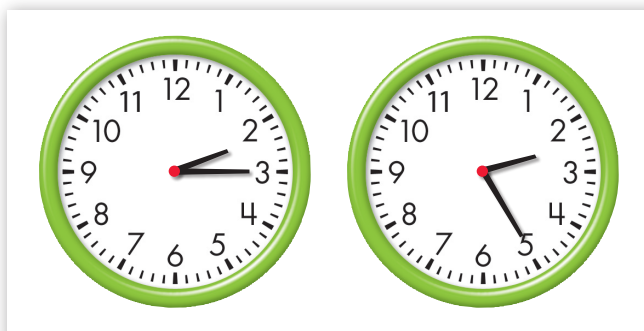


PAIRS



CLASS

Show students the demonstration clock and ask what they know about it. Students may recall that in Grade 2, they worked on telling time to the nearest 5 minutes and that they counted the number of minutes in 5-minute intervals. Remind students that the hour hand points to the number of the hour only when it is exactly 2:00, 3:00, and so on. Ask students to count by 5s to verify that the minute hand points to the 3 for 15 minutes past the hour and to the 5 for 25 minutes past the hour. ①



Set the clock to 2:00 and ask pairs of students to do the same on their student clocks. Write 2:00 on the board or overhead.

We're going to practice telling time to the nearest 5 minutes. If it were 2:00 right now, what time would it be in 5 minutes? 15 minutes? 25 minutes?



Students work in pairs to set their clocks to each time the teacher says.

Professional Development

- ① Part 4: Ten-Minute Math and Classroom Routines in *Implementing Investigations in Grade 3: What Time Is It?*

Math Note

2 Rounding and Place Value In this part of the activity, students round to the nearest ten. When rounding to the nearest ten, the number in the tens place is the number that can change. The number in the ones place is the one that is used to determine whether the number should be rounded up or down to the nearest ten.

Have pairs of students compare their clock settings. With students' suggestions, set the demonstration clock to each time and then write that time in digital format (2:05, 2:15, 2:25) on the board.

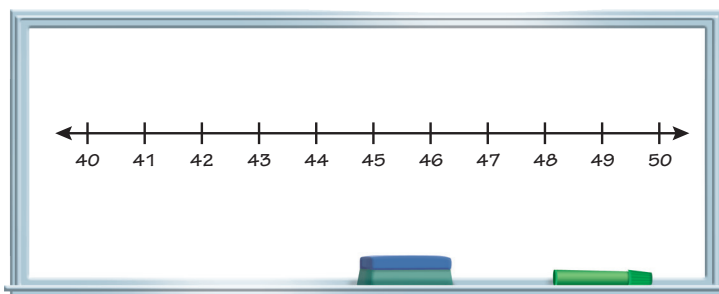
For the remainder of the session, students set their clocks to various times to the nearest 5 minutes that you suggest, such as 1:05, 6:15, and 12:25. Variations of this activity will continue as Ten-Minute Math activities throughout this investigation.

2 ACTIVITY

Rounding to Tens and Hundreds



Draw the following number line on the board.



Explain to students that a number can be rounded to the **nearest ten**. **2** Point to the number 43 on the number line. Explain that when you round 43 to the nearest 10, you have to decide whether 43 is closer to 40 or 50.

Is 43 closer to 40 or 50? How do you know?

Students might say:



"43 is 3 away from 40 but 7 away from 50. So 43 is closer to 40."

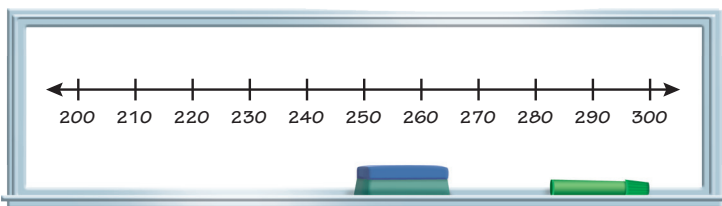
Repeat with the number 46. Then give students a few minutes to think about the other numbers between 40 and 50.

Which of the numbers from 40 to 50 would round to 40? Which ones would round to 50?

Discuss with students that numbers less than 45 are closer to 40 than 50, and numbers greater than 45 are closer to 50.

45 is halfway between 40 and 50. [Point to 45 on the number line.] It is the same distance from both numbers. If a number is halfway between two tens, it is rounded up to the greater ten.

Now draw the following number line on the board.



Numbers can be rounded to the nearest ten or to the nearest hundred. Let's look at the number 221. [Mark 221 on the number line.] To round 221 to the nearest ten, you need to decide if it is closer to 220 or 230. It is closer to 220, so 221 rounds down to 220.

Tell students that 221 can also be rounded to the nearest hundred.

To round 221 to the nearest hundred, you need to decide if it is closer to 200 or 300. Is it closer to 200 or 300? How do you know?

Students might say:



"On the number line, 221 is closer to 200 than it is to 300."

Then ask students to round 250 to the nearest hundred. Explain that the same halfway rule applies when rounding to the nearest hundred.

Have students practice rounding numbers by completing *Student Activity Book* pages 22A and 22B or C10 and C11.

ONGOING ASSESSMENT: Observing Students at Work



Students practice rounding numbers to the nearest 10 or 100.

- **Do students consider the ones digit when rounding to the nearest 10?** Do they consider the tens digit when rounding to the nearest 100?
- **Do students round up for numbers halfway between two tens or two hundreds?**

DIFFERENTIATION: Supporting the Range of Learners



Intervention

Some students may have difficulty distinguishing between rounding numbers to the nearest ten and the nearest hundred. Students may benefit from first focusing on which digit is in the tens place or the hundreds place before rounding it to the nearest ten or hundred.

Name _____ Date _____
 Collections and Travel Stories

Rounding to Tens

Use the number lines to help you answer the problems.

30 31 32 33 34 35 36 37 38 39 40

1. What number is halfway between 30 and 40? _____
2. What is 37 rounded to the nearest ten? _____

10 11 12 13 14 15 16 17 18 19 20

3. What number is halfway between 10 and 20? _____
4. What is 14 rounded to the nearest ten? _____

60 61 62 63 64 65 66 67 68 69 70

5. What is 62 rounded to the nearest ten? _____
6. What is 65 rounded to the nearest ten? _____

22A Unit 3 Session 1.7A

▲ Student Activity Book, Unit 3, p. 22A; Resource Masters, C10

Name _____ Date _____
 Collections and Travel Stories

Rounding to Hundreds

Use the number lines to help you answer the problems.

100 150 200

1. Is 180 less than 150 or greater than 150? _____
2. What is 180 rounded to the nearest hundred? _____
3. Is 120 less than 150 or greater than 150? _____
4. What is 120 rounded to the nearest hundred? _____

400 450 500

5. What is 435 rounded to the nearest hundred? _____
6. What is 465 rounded to the nearest hundred? _____

Session 1.7A Unit 3 22B

▲ Student Activity Book, Unit 3, p. 22B; Resource Masters, C11

Math Note

- 3 **Expanded Form** Expanded form is a way to show how much each digit in a multi-digit number represents. It is the sum of the values of each place. In this example, 678 has 6 hundreds, 7 tens, and 8 ones. This can be recorded as $600 + 70 + 8 = 678$.

Name _____ Date _____

Collections and Travel Stories Daily Practice

Rounding to Tens and Hundreds

NOTE Students round whole numbers to the nearest ten and hundred.

For each problem, write the number in expanded form and then round to the nearest ten and hundred.

- 138
Expanded form: _____
What is 138 rounded to the nearest ten? _____
What is 138 rounded to the nearest hundred? _____
- 459
Expanded form: _____
What is 459 rounded to the nearest ten? _____
What is 459 rounded to the nearest hundred? _____
- 392
Expanded form: _____
What is 392 rounded to the nearest ten? _____
What is 392 rounded to the nearest hundred? _____
- 750
Expanded form: _____
What is 750 rounded to the nearest ten? _____
What is 750 rounded to the nearest hundred? _____

© Houghton Mifflin Harcourt Publishing Company
Session 1.7A Unit 3 22D

- ▲ **Student Activity Book, Unit 3, p. 22D; Resource Masters, C12**

Extension Students who understand rounding can be challenged to round numbers to the nearest ten or hundred without using a number line. Give students a list of 3-digit numbers and have students round each number to the nearest ten and hundred.

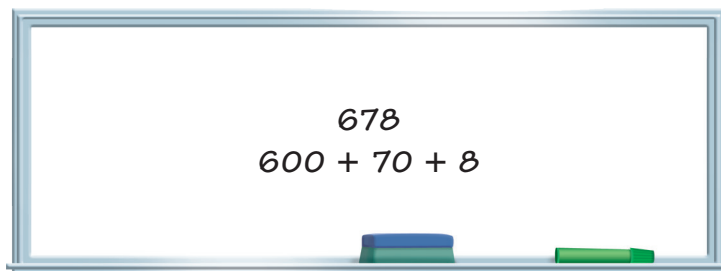
3 DISCUSSION Expanded Form and Rounding



Math Focus Points for Discussion

- ◆ Using place-value understanding to round whole numbers to the nearest ten or hundred
- ◆ Representing 3-digit numbers using expanded form

Using **expanded form** can help students better understand place value and its importance in rounding. Write the number 678 on the board. Then write the number on the board using expanded form. 3



Discuss what each digit in the number represents. Discuss which digits need to be considered when rounding the number to the nearest ten. Then discuss which digits need to be considered when rounding the number to the nearest hundred.

Revisit two or three numbers from *Student Activity Book* page 22B or C11. Have students write those numbers in expanded form, verify their rounding, and share their findings.

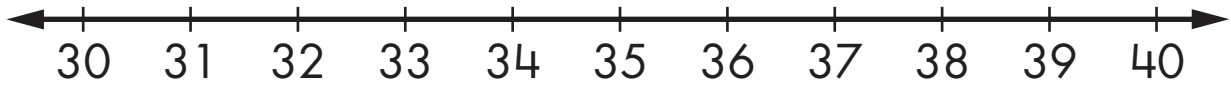
4 SESSION FOLLOW-UP Daily Practice



Daily Practice: For reinforcement of this unit's content, have students complete *Student Activity Book* page 22D or C12.

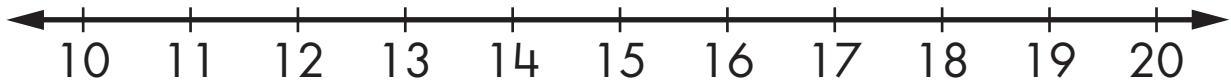
Rounding to Tens

Use the number lines to help you answer the problems.



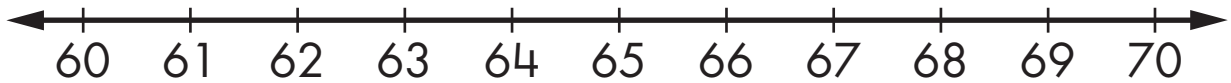
1. What number is halfway between 30 and 40?

2. What is 37 rounded to the nearest ten? _____



3. What number is halfway between 10 and 20?

4. What is 14 rounded to the nearest ten? _____

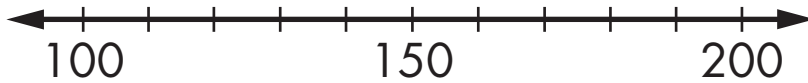


5. What is 62 rounded to the nearest ten? _____

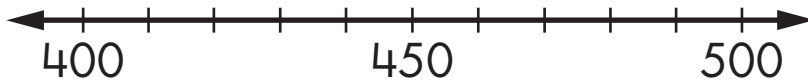
6. What is 65 rounded to the nearest ten? _____

Rounding to Hundreds

Use the number lines to help you answer the problems.



1. Is 180 less than 150 or greater than 150? _____
2. What is 180 rounded to the nearest hundred? _____
3. Is 120 less than 150 or greater than 150? _____
4. What is 120 rounded to the nearest hundred? _____



5. What is 435 rounded to the nearest hundred? _____
6. What is 465 rounded to the nearest hundred? _____



Rounding to Tens and Hundreds

NOTE Students round whole numbers to the nearest ten and hundred.

SMH 6, 10–11

For each problem, write the number in expanded form and then round to the nearest ten and hundred.

1. 138

Expanded form: _____

What is 138 rounded to the nearest ten? _____

What is 138 rounded to the nearest hundred? _____

2. 459

Expanded form: _____

What is 459 rounded to the nearest ten? _____

What is 459 rounded to the nearest hundred? _____

3. 392

Expanded form: _____

What is 392 rounded to the nearest ten? _____

What is 392 rounded to the nearest hundred? _____

4. 750

Expanded form: _____

What is 750 rounded to the nearest ten? _____

What is 750 rounded to the nearest hundred? _____