Homework and Spiral Review

1 Teaching the Lesson

Math Background for this lesson is included on page MB1-U4.

**ACTIVITY**

**Subtraction with Ungrouping** *(Student Activity Book: 179–180)*

Why is this activity important?
Knowing when to ungroup helps solidify children’s understanding of subtraction.

2 Differentiated Instruction

**On-Level, Challenge and Intervention**
- Activity Card / Writing Prompt for each level
- Practice, Reteach, and Challenge

**Games**
- Poggles MX
- Subtraction Action
- Primary Vocabulary Game

**Math Reader**
- Comic Books for Sale

**Assessment and Intervention**

Personal Math Trainer, Lesson 4-8

3 Homework and Spiral Review

Homework and Remembering pp. 105–106

**Home or School Activity**
Social Studies Connection: Famous Landmarks

Mathematical Standards

Content Standards
2.PVO.1, 2.PVO.1a, 2.PVO.7, 2.PVO.9

Processes and Practices
MPP1, MPP2, MPP3, MPP5, MPP6, MPP8

Quick Practice
(See page QP1-U4.)
- Length Equivalents (H)
- Teen Subtraction Flash (I)

Daily Routines
(See page DR1-U4.)
- Count by 100s to 1,000
- Count Within 1,000 by Tens
- Count Dimes, Nickels, and Pennies to Equal a Quarter (25 cents)

Vocabulary

APP For vocabulary fluency and fun

Personal Math Trainer

Day at a Glance

What will children learn?
Children will learn when to ungroup in subtraction and they will learn to subtract a 2-digit number from any number less than 200.
Teaching Note

**Emphasize the Ungroup First Method**

The Expanded Method is helpful conceptually to understand ungrouping. But for two ungroupings it gets difficult for some children, and it does not generalize well to larger numbers. Beginning with this lesson, emphasize the Ungroup First Method, where students can choose whether to ungroup from the left or the right and whether to subtract from the left or the right. These choices generate productive math discussions, and the method generalizes to exercises with any number of places.

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**ACTIVITY** 60m

**Subtraction with Ungrouping**

<table>
<thead>
<tr>
<th>Mathematical Standards</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Standards</td>
<td>Decide whether ungrouping is necessary. Subtract a 2-digit number from a 3-digit number less than 200.</td>
</tr>
<tr>
<td>Processes and Practices</td>
<td></td>
</tr>
</tbody>
</table>

**Materials**

- Student Activity Book pp. 179–180, MathBoard materials

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Determine When and Why to Ungroup

**MathTalk**

Write these subtraction exercises on the board.

<table>
<thead>
<tr>
<th>142</th>
<th>142</th>
</tr>
</thead>
<tbody>
<tr>
<td>− 71</td>
<td>− 31</td>
</tr>
<tr>
<td>71</td>
<td>111</td>
</tr>
</tbody>
</table>

**MP1 Make Sense of Problems | Analyze the Problem**

Give the children a few minutes to look at the exercises. Use the following questions to help children explain when and why they need to ungroup.

- **Look at 142 – 71. Are there enough ones to subtract from?**  
  *Yes Why? 2 is greater than 1.*

- **Are there enough tens to subtract from?**  
  *No Why? 4 tens is less than 7 tens.*

- **Do we need to ungroup to solve this exercise?**  
  *Yes Why? There are not enough tens to subtract from, so we need to ungroup 1 hundred.*

- **Look at 142 – 31. Are there enough ones to subtract from?**  
  *Yes Why? 2 is greater than 1.*

**MP8 Use Repeated Reasoning | Generalize**

Emphasize to children that they must first decide whether or not to ungroup before they begin solving any subtraction exercise. Children may enjoy making up a rule for deciding how to do this. You may want to have children demonstrate their rules on the board.

**MP5 Use Appropriate Tools | MathBoard**

Ask volunteers to come to the board and review the steps for solving 3-digit subtraction exercises, using the Ungroup First Method. Then have children use their MathBoards to solve the two exercises from above. Instruct children to use the Ungroup First Method if they need to ungroup, rather than the Expanded Method.

Remind children to check their work either by adding or by making proof drawings with Quick Hundreds, Quick Tens, and circles. After children have completed the two exercises, have volunteers use the **Step by Step at the Board** structure to explain how they solved each of the exercises.

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**English Learners**

Provide children with practice using **greater than** and **less than** to describe numbers. Draw a number line from 1 to 10 on the board.

**Emerging**

- Is 5 greater than 4?  
  *Yes Is 4 less than 5? Yes Is 6 greater than 8?  No*  
Continue with other numbers.

**Expanding**

- **Which is greater, 4 or 5?**  
  *4 is ___ less than 5*

Continue with other numbers.

**Bridging**

Have students work in pairs. One says two numbers; the other makes greater than and less than sentences.
Continue Discussing Ungrouping

Write these subtraction exercises on the board.

<table>
<thead>
<tr>
<th>157</th>
<th>133</th>
</tr>
</thead>
<tbody>
<tr>
<td>− 96</td>
<td>− 14</td>
</tr>
<tr>
<td>61</td>
<td>119</td>
</tr>
</tbody>
</table>

Discuss these exercises with children.

- **Look at 157 − 96. Are there enough ones to subtract from?** Yes Why? 7 is greater than 6. Are there enough tens to subtract from? No Why? 5 tens is less than 9 tens.
- **Do we need to ungroup to solve this exercise?** Yes Why? There are not enough tens to subtract from, so we need to ungroup 1 hundred.
- **Look at 133 − 14. Are there enough ones to subtract from?** No Why? 3 is less than 4. Are there enough tens to subtract from? Yes Why? 3 tens is greater than 1 ten.
- **Do we need to ungroup to solve this exercise?** Yes Why? There are not enough ones to subtract from, so we need to ungroup 1 ten.

Then give children a few minutes to solve each exercise on their MathBoards. After children have finished, have volunteers use the Step by Step at the Board structure to explain how they solved each of the exercises.

Now provide children with more exercises of this kind to discuss. Encourage them to tell word problems to go with these exercises.

<table>
<thead>
<tr>
<th>163</th>
<th>163</th>
<th>163</th>
</tr>
</thead>
<tbody>
<tr>
<td>− 62</td>
<td>− 82</td>
<td>− 67</td>
</tr>
<tr>
<td>101</td>
<td>81</td>
<td>96</td>
</tr>
</tbody>
</table>

Ask children the following questions to help them with subtraction.

- **Look at 163 − 62. Does it require any ungrouping?** No Why? There are enough ones and enough tens to subtract from.
- **Look at 163 − 82. Does it require any ungrouping?** Yes Why? There are not enough tens to subtract from, so we need to ungroup 1 hundred.
- **Look at 163 − 67. Does it require any ungrouping?** Yes Why? There are not enough ones to subtract from, so we need to ungroup 1 ten. Then there will not be enough tens to subtract from, so we will need to ungroup 1 hundred.

**MP2 Reason Abstractly and Quantitatively | Connect Symbols and Models** Give children a few minutes to solve each exercise and to check their work by making proof drawings. After children have finished, have volunteers come to the board to explain how to solve each of the exercises.

**Research** Research indicates that when children ungroup the top number before they do any subtracting, they are less likely to make errors, particularly the “subtraction switch error” in which they subtract the top number from the bottom number. This error is even more likely to occur in 3-digit subtraction.

Ungrouping and renaming the top number helps to avoid this tendency because the renamed hundreds, tens, and ones are all in place before children do any subtracting. (Be sure, however, that children first determine where ungrouping is needed.)

The common method alternates ungrouping and subtracting, so children are more likely to subtract top from bottom than when they ungroup first.
Decide When to Ungroup

Children work in pairs on Student Activity Book pages 179–180. Pairs should discuss when to ungroup. Suggest that children try ungrouping from the left on some exercises and ungrouping from the right on other exercises so they can decide which they prefer.

Ungroup first, beginning at the left

\[
\begin{array}{c}
016 \\
\underline{- 89}
\end{array}
\quad
\begin{array}{c}
1513 \\
\underline{- 89}
\end{array}
\]

Ungroup first, beginning at the right

\[
\begin{array}{c}
513 \\
\underline{- 89}
\end{array}
\quad
\begin{array}{c}
1513 \\
\underline{- 89}
\end{array}
\]

MP3 Construct a Viable Argument | Compare Methods After children have finished the exercises, ask for volunteers to ungroup and subtract from the left and others to ungroup and subtract from the right. Discuss how these methods are alike and different, and why you get the same answer. Also discuss how you can subtract from the left or from the right because you have already fixed the top number to be ready to subtract everywhere.

After children complete Exercises 4 and 5, ask volunteers to show how to solve them by ungrouping from the left and ungrouping from the right. Then help children see that it is only the exercises with two ungroupings that look different when you ungroup from the left and when you ungroup from the right. Explain that the methods are different in action, but they only look different when there are two ungroupings.

Formative Assessment

Check Understanding

Children’s responses should demonstrate their understanding of when it is necessary to ungroup to subtract.
Solve the word problems that your classmate wrote. Trade your word problems with a classmate. Use the same total number to write a subtraction word problem that does not need ungrouping to solve. For the first exercise, draw Quick Hundreds, Quick Tens, and circles to show the total (the top number). Use a different color pencil to show the subtraction and in the drawing.

For the first exercise, draw Quick Hundreds, Quick Tens, and circles to show the total (the top number). Use a color pencil to show ungrouping in the exercise and in the drawing. For the second exercise, draw Quick Hundreds, Quick Tens, and circles to show the total (the top number). Use a color pencil to show ungrouping in the exercise and in the drawing. For the third exercise, draw Quick Hundreds, Quick Tens, and circles to show the total (the top number). Use a color pencil to show ungrouping in the exercise and in the drawing.

How Do You Know?
Math Writing Prompt
Explain Your Thinking
What's Wrong?
How Do You Know?
Math Writing Prompt

18
18
49
49
109
109

Math Writing Prompt
e Explain Your Thinking In which subtraction do you have to ungroup twice? Find the answer. Write what you have to ungroup.

138
138
– 46
– 46
39
39

Math Writing Prompt
What's Wrong? Look at Remah's subtraction. What did she do wrong? Find the correct answer.

18
38
49
148
148

How Do You Know? Make a drawing to show that the amounts below are the same.

1 hundred 4 tens 8 ones
1 hundred 4 tens 8 ones

Math Reader
Games

• Comic Books for Sale

Math Reader

• Poggles MX

Games

Practice | Reinforce | Extend subtraction of 2-digit numbers

• Subtraction Action

Activities Card, Lesson 4-8: Sort Them Out

Math Writing Prompt

Activity Card, Lesson 4-8: Write Word Problems

Math Writing Prompt

Activity Card, Lesson 4-8: Proof Drawings

Math Writing Prompt

• Personal Math Trainer

Math Writing Prompt

More Resources

ON-LEVEL RESOURCES

Hands-On (Activity Card, Lesson 4-8: Sort Them Out)

Hands-On  (Activity Card, Lesson 4-8: Write Word Problems)

Hands-On  (Activity Card, Lesson 4-8: Proof Drawings)

Hands-On  (Activity Card, Lesson 4-8: Sort Them Out)

Hands-On  (Activity Card, Lesson 4-8: Write Word Problems)

Hands-On  (Activity Card, Lesson 4-8: Proof Drawings)

Hands-On  (Activity Card, Lesson 4-8: Sort Them Out)

Hands-On  (Activity Card, Lesson 4-8: Write Word Problems)

Hands-On  (Activity Card, Lesson 4-8: Proof Drawings)

Math Activity Center

Hands-On • Print • Interactive Digital Games and Resources

Lesson 8: Ungroup from the Left or from the Right

Adaptive

Individuals

Pairs

Groups
**Problem Set**

### 4-8 Homework

**Goal: Additional Practice**

This Homework page provides practice in deciding whether ungrouping is necessary to subtract.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<tbody>
<tr>
<td>147</td>
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<td>- 32</td>
<td>- 38</td>
<td>- 48</td>
<td>[16]</td>
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<td>[115]</td>
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<td>[99]</td>
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<td>126</td>
<td>126</td>
<td>141</td>
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<tr>
<td>- 54</td>
<td>- 57</td>
<td>- 97</td>
<td>[72]</td>
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<td>172</td>
<td>[141]</td>
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<td>- 85</td>
<td>- 31</td>
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<td>[87]</td>
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</tbody>
</table>

### 4-8 Remembering

**Goal: Spiral Review**

This Remembering activity is appropriate anytime after today’s lesson.

#### Make a drawing. Write an equation. Solve the problem.

1. The coach gives out 8 large water bottles and 8 small water bottles. How many water bottles does the coach give out?

   \[16\] water bottles

   \[8 \quad 8 \quad = \quad 16\]

   \[\text{label}\]

#### Add. Use any method.

2. \[66 \quad + \quad 77 \quad = \quad 143\]

   \[97 \quad + \quad 84 \quad = \quad 181\]

   \[53 \quad + \quad 79 \quad = \quad 132\]

3. \[200 \quad - \quad 41 \quad = \quad 159\]

   \[200 \quad - \quad 73 \quad = \quad 127\]

   \[200 \quad - \quad 57 \quad = \quad 143\]

4. **Stretch Your Thinking**

   Use the numbers below to complete the subtraction problem. Place the numbers so that you must ungroup two times. Then subtract.

   \[3 \quad 6 \quad 9 \quad 5 \quad - \quad 9 \quad 6 \quad = \quad 3 \quad 9\]

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**Home or School Activity**

**Social Studies Connection**

**Famous Landmarks**

Display pictures of several landmarks. Have children discuss what they know about any of the landmarks.

Children can find the actual height of four landmarks and make a chart to display the information. Then have them write three subtraction questions comparing the heights of the different landmarks. When they have finished, have children give their problems to a classmate to solve.

- **White House** 70 feet
- **Washington Monument** 555 feet
- **Golden Gate Bridge** 746 feet
- **Eiffel Tower** 986 feet
Day at a Glance

What will students learn?
Students will learn to use methods for ungrouping to subtract two whole numbers.

1 Teaching the Lesson

Math Background for this lesson is included on page MB1-U1.

ACTIVITY 1 Subtract From Greater Numbers
Why is this activity important?
Subtracting from greater numbers and discussing when ungrouping is necessary will build students’ fluency with subtraction.

ACTIVITY 2 Check Subtraction (Student Activity Book: 31–32)
Why is this activity important?
Exploring ways to check subtraction provides students with ways to decide if their answers are reasonable.

2 Differentiated Instruction

On-Level, Challenge, and Intervention
• Activity Card / Writing Prompt for each level
• Practice, Reteach, and Challenge
Games
• Poggles MX
• Who’s the Closest? Gameboard
• Intermediate Vocabulary Game
Math Reader
• The First Space Vacation

Assessment and Intervention
Personal Math Trainer, Lesson 1-11

3 Homework and Spiral Review

Homework and Remembering pp. 21–22

Home or School Activity
Social Studies Connection: Numbers in the News

Quick Practice
(See page QP1-U1.)
• Write, Compare, Say (B-8)

Anytime Problem
In a game, four players scored 30, 40, 60, and 80 points. Raj had the highest score. Theo scored 10 points less than Kate. Jenny also played. Which player had each score? Raj 80, Jenny 60, Kate 40, Theo 30

Vocabulary
APP For vocabulary fluency and fun

Grade 4

Mathematics Learning Standards
Mathematical Content
4.ARO.3, 4.PVO.4
Mathematical Practices
MPP1, MPP3, MPP6, MPP8
### Teaching the Lesson

**ACTIVITY 1**  
25m

**Subtract From Greater Numbers**

<table>
<thead>
<tr>
<th>Mathematics</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Standards</td>
<td>Subtract from greater numbers and discuss when ungrouping is necessary.</td>
</tr>
<tr>
<td>Mathematical Content</td>
<td>4.PVO.4</td>
</tr>
<tr>
<td>Mathematical Practices</td>
<td>MPP3, MPP6, MPP8</td>
</tr>
</tbody>
</table>

#### Ungroup With Greater Numbers  
**Math Talk**

**Student-Generated Methods** Write the following subtraction on the board.

\[
\begin{array}{c}
86,402 \\
- 78,369 \\
\hline
8,033
\end{array}
\]

- **How would you subtract these numbers?**
  
Most students should be able to apply the strategies they learned for subtracting from thousands. Volunteers should work at the board using different methods while other students work at their desks.

- **Why must the place values be aligned?** We can only subtract like place values.

- **When do we need to ungroup?** Ungrouping is needed when the top digit is less than the bottom digit. The top number needs to be great enough to subtract from.

Direct students to do all necessary ungrouping first.

\[
\begin{array}{c}
9716 \\
\hline
86,402 \\
- 78,369 \\
\hline
8,033
\end{array}
\]

- Have one student explain ungrouping left to right.
- Have a different student explain ungrouping right to left.
- The whole class does the subtractions either left to right or right to left.

**MPP8 Generalize** Students should discuss the different solution methods they used and relate them to subtraction from thousands. Elicit from students that they can use the same methods to subtract regardless of the number of digits. Suggest students use the following subtraction to support their conclusions.

\[
\begin{array}{c}
507,216 \\
\hline
92,567 \\
\hline
414,649
\end{array}
\]

A possible method is shown.

#### Learning Community

**Best Practices | Helping Community**

Some students are initially reluctant to explain their thinking. As you respond positively to student efforts to talk about their thinking, your class will realize that there is an expectation in the math community to respond positively to one another. More students will then desire to make their math thinking the center of discussion.

#### Class Management

**Looking Ahead** Keep one correct version of the last example on the board for the next activity.
Find and Correct Mistakes

MPP3 Use and Evaluate Logical Reasoning Students should discuss the conceptual mistakes shown in Exercises 1 and 2 on Student Activity Book page 31. Two groups can present their work at the board.

- In Exercise 1, the places are not properly aligned. Ones must be subtracted from ones, and so on. Students should rewrite the exercise with correct alignment and find the correct answer. **61,811**

- In Exercise 2, no ungrouping has been done. One hundred should have been ungrouped to make more tens. Instead, the lesser digit was subtracted from the greater digit. The same mistake was made in the thousands place. Students should ungroup as needed and find the correct answer. **129,571**

Check Subtraction by “Adding Up”

“Add up” to find any places where there is a subtraction mistake. Discuss how each mistake might have been made and correct the subtraction if necessary.

- **3** 163,406 – 84,357
  - **1** 79,159
  - **2** 79,049 ungrouped
  - **3** 2,375,841 ungrouped

- **4** 526,741 – 139,268
  - **1** 387,473
  - **2** 699,872
  - **3** 3,096,798

Answers will vary. Possible answers given.

Students should discuss the conceptual mistakes shown in Exercises 1 and 2 on Student Activity Book page 31. Two groups can present their work at the board.

- In Exercise 1, the places are not properly aligned. Ones must be subtracted from ones, and so on. Students should rewrite the exercise with correct alignment and find the correct answer. **61,811**

- In Exercise 2, no ungrouping has been done. One hundred should have been ungrouped to make more tens. Instead, the lesser digit was subtracted from the greater digit. The same mistake was made in the thousands place. Students should ungroup as needed and find the correct answer. **129,571**

Analyzing another student’s work to find errors requires that a student reflect on what he or she knows about the process involved. As students discuss the possible errors in Exercises 1 and 2, use guiding questions rather than pointing out the errors so that they do the work of finding the errors. Seeing why an incorrect method does not work motivates students to work correctly as they carry out multidigit subtractions with ungrouping.
Check Subtraction by “Adding Up”

MPP1 Problem Solving | Check Answers  To review the relationship between addition and subtraction, draw this break-apart drawing on the board.

```
507,216

92,567

414,649
```

Ask students to discuss how the diagram shows both subtraction and addition. If you subtract either bottom number from the top number, you get the other bottom number as the answer. If you add the two bottom numbers, you get the top number as the answer.

Have students discuss how they could use this knowledge to check subtraction. Try to elicit the following method: You can check subtraction by “adding up.” Add the answer and the bottom number (the addends in an addition) to get the top number (the total in an addition).

“Adding Up” Method to Check Subtraction  The “adding up” method is shown below. The new groups are shown as 1s in the appropriate columns just below the answer in the subtraction.

```
507,216
− 92,567
   414,649
   1 1 1 1
```

Students can take turns adding place values, beginning with the ones place.

- Add the ones bottom to top: $9 + 7 = 16$. The 16 is consistent with the 6 that is already at the top of the ones column. Write a 1 for the grouped ten at the bottom of the tens column.
- Add the tens bottom to top: $1 + 4 + 6 = 11$. The 11 is consistent with the 1 that is already at the top of the tens column. Write a 1 for the grouped hundred at the bottom of the hundreds column.
- Continue “adding up” in the other places.
- The total is 507,216.

English Learners

Write the word inverse on the board. Review the meaning and inverse operations.

Emerging
- Does inverse mean “opposite”? yes
- Addition is the inverse of …? subtraction
  We can use addition to check …? subtraction

Expanding
- What does inverse mean? opposite
- What is the inverse of subtraction? addition
- What can we check with addition? the answer to a subtraction problem

Bridging
Have students work in pairs. One partner names an addition, subtraction, multiplication, or division equation. The other names the inverse operation that could be used to check the answer.

Teaching Note

Language and Vocabulary  The mathematical word for the relationship between addition and subtraction is inverse. Students may also use opposite, reverse, undoing, or some other description.
Check Subtraction by “Adding Up” (continued)

Have several students work at the board while the others work at their seats to check Exercise 3 on Student Activity Book page 31. Remind students to check by “adding up.”

Students should discuss their findings. Refer student questions to the class for resolution whenever possible.

Students can work through Exercises 4–6 by themselves while you walk around and check for understanding.

Ask different students to discuss the errors they found. Explanations for the errors are listed below:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>163,406</td>
<td>Ungrouped incorrectly in the tens and hundreds places.</td>
</tr>
<tr>
<td></td>
<td>− 84,357</td>
<td></td>
</tr>
<tr>
<td></td>
<td>79,159</td>
<td>Correct Answer: 79,049</td>
</tr>
<tr>
<td>4</td>
<td>526,741</td>
<td>Subtracted top from bottom in ten thousands and thousands places.</td>
</tr>
<tr>
<td></td>
<td>− 139,268</td>
<td></td>
</tr>
<tr>
<td></td>
<td>413,473</td>
<td>Correct Answer: 387,473</td>
</tr>
<tr>
<td>5</td>
<td>1,000,000</td>
<td>Ungrouped incorrectly in ten thousands and thousands places.</td>
</tr>
<tr>
<td></td>
<td>− 300,128</td>
<td></td>
</tr>
<tr>
<td></td>
<td>699,872</td>
<td>Correct Answer: 699,872</td>
</tr>
<tr>
<td>6</td>
<td>5,472,639</td>
<td>No mistakes</td>
</tr>
<tr>
<td></td>
<td>− 2,375,841</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3,096,798</td>
<td></td>
</tr>
</tbody>
</table>

After students have written six-digit subtraction problems for Exercise 7, have them exchange papers, complete the subtraction, and add up to check.

Estimate to Check

MPP1 Problem Solving | Reasonable Answers Discuss how to round greater numbers to check Exercises 3–6.

Rounding to the Nearest Ten Thousand In Exercise 3, we can use rounding and estimation to predict or check the answer.

- **Think about rounding the numbers in Exercise 3 to the nearest ten thousand. Which digit in each number is in the rounding place?** 163,406: 6; 84,357: 8
- **Why are the digits in the thousands places of these numbers important?** The digits in the thousands places tell us if the digits in the ten thousands places must increase by 1 or stay the same.
- **Does each number round up or round down? Why?** Each number rounds down because the digit in the thousands place of each number is less than 5.
- **Round each number to the nearest ten thousand.** 163,406 rounds to 160,000; 84,357 rounds to 80,000
- **What is a reasonable estimate for the difference of these numbers?** 160,000 − 80,000 = 80,000

Rounding to the Nearest Hundred Thousand Remind students that rounding rules remain the same for any number of digits. For Exercises 4–6, students should round to the nearest hundred thousand to check their answers. Use questions similar to those above.

Activity continued
Estimate Differences

MPP1 Problem Solving | Reasonable Answers  Have the class read the introduction about Dan’s subtraction on Student Activity Book page 32.

• How do we decide if Dan's answer is reasonable? Round to the nearest thousand. 8,000 \(- 6,000 = 2,000\)
• Is Dan’s answer reasonable? probably not
• What mistake did Dan make, and how might you fix it? Dan subtracted the top digit from the bottom digit in the hundreds place. He should have ungrouped 8 thousands to make 7 thousands and 10 hundreds. The correct answer is 2,216.

Have students discuss Exercises 8–12 in small groups.

Formative Assessment

Check Understanding

Students should generalize that they can use the same methods to ungroup regardless of the number of digits.

Math Background  In many situations, there is no “right way” to estimate. Estimating is often a matter of judgment, which can vary depending on the numbers involved and the purpose of the estimate. In Exercise 11, a student might estimate by rounding to the nearest ten thousand: 20,000 \(- 10,000 = 10,000\). This is acceptable, but may not be “the best way.” Emphasize the main purpose of this activity—to determine whether answers are reasonable. This is a habit that should be strongly encouraged.

Estimate Differences

You can use estimation to decide if an answer is reasonable.

Dan did this subtraction: 8,196 \(- 5,980 = 3,816\). Discuss how using estimation can help you decide if his answer is correct. Answers will vary.

Decide whether each answer is reasonable. Show your estimate.

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Actual Answer</th>
<th>Estimated Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>3,065</td>
<td>3,000</td>
</tr>
<tr>
<td>9</td>
<td>22,451</td>
<td>22,000</td>
</tr>
</tbody>
</table>

Solve.

1. Bob has 3,226 marbles in his collection. Mia has 1,867 marbles. Bob says he has 2,359 more than Mia. Is Bob’s answer reasonable? Show your estimate.
   - Not reasonable; 3,000 \(- 2,000 = 1,000\)

2. Two towns have populations of 24,990 and 12,205. Gretchen says the difference is 12,785. Is Gretchen’s answer reasonable? Show your estimate.
   - Reasonable; 25,000 \(- 12,000 = 13,000\)

3. Estimate to decide if the answer is reasonable. If it is not reasonable, describe the mistake and find the correct answer.
   - Not reasonable; 805,716 \(- 295,905 = 514,811\)

Check Understanding

Describe how subtracting and ungrouping with greater numbers is similar to subtracting and ungrouping with lesser numbers.
Differentiated Instruction

Math Activity Center

Hands-On • Print • Interactive Digital Games and Resources

ON-LEVEL RESOURCES

Hands-On 📚
Activity Card, Lesson 1-11: Cover Up

Digital and Print 📚
Practice, Lesson 1-11

CHALLENGE RESOURCES

Hands-On 📚
Activity Card, Lesson 1-11: Missing Digits

Digital and Print 📚
Challenge, Lesson 1-11

INTERVENTION RESOURCES

Hands-On 📚
Activity Card, Lesson 1-11: When to Ungroup?

Digital and Print 📚
Reteach, Lesson 1-11

MORE RESOURCES

Games
Practice | Reinforce | Extend place value, addition and subtraction
• Poggles MX
• Who’s the Closest?
• Intermediate Vocabulary Game

Math Reader
• The First Space Vacation

Math Writing Prompt

Investigate Math Explain how subtracting 56,000 from 84,000 is similar to subtracting 56 from 84. Compare the answers.

Explain Your Thinking You buy four items at a store, but the receipt is smudged and you cannot read the cost of one item. Explain how you can find the missing cost.

Define Your Work Break the word ungroup into “un” and “group.” Define each part of the word. Give another example of a word that starts with un- and define it.

Assessment and Intervention 📚

Personal Math Trainer, Lesson 1-11
Personalized intervention and enrichment with learning supports

The First Space Vacation
(Math Reader)
Home or School Activity

Social Studies Connection

Numbers in the News  Have students find articles in newspapers, magazines, or on the Internet that contain greater numbers. Ask them to bring in the articles. Have the class use them as a basis for practice with adding, subtracting, and using one operation to check an answer for the other operation.