LESSON 19 | **Worktext** pp. 45–46, 59 | Correlated **Math Reviews** pp. 35–36

Objectives
- Subtract 4- and 5-digit numbers, renaming 1 one thousand as 10 hundreds and 1 ten thousand as 10 one thousands
- Check a subtraction problem using addition
- Estimate the difference by rounding to the nearest one thousand or ten thousand
- Solve a multi-step word problem

Teacher Materials
- Division flashcards: 3 as a divisor, and previously reviewed division facts

Student Materials
- Number Cards: 0–9

Practice and Review

Division facts: 3 as a divisor

Use the division flashcards and Number Cards 0–9 to review facts with 3 as a divisor and division facts reviewed in previous lessons.

Introduce the Lesson

Guidebooks contain illustrations and information about various birds so that you can learn to identify them. When you see an unfamiliar bird, make note of its size, shape, color, and location. Then refer to a guidebook to determine the species. In most cases scientists do not know the exact number of birds in a specific species, but they do have ways of estimating how many there are.

Teach for Understanding

Subtract 4- and 5-digit numbers with renaming

1. Write 5,364 − 3,723 in vertical form for display.
   - ➤ Which place do you subtract first? *Ones*
   - ➤ Can you subtract 3 ones from 4 ones? *yes*
   - ➤ What is 4 − 3? *1* Write 1 in the Ones place.
   - ➤ What do you do next? *Subtract the tens.*
   - ➤ Can you subtract 2 tens from 6 tens? *yes*
   - ➤ What does 6 − 2 equal? *4* Write 4 in the Tens place.
   - ➤ Which place do you subtract next? *Hundreds*
   - ➤ Can you subtract 7 hundreds from 3 hundreds? *no* What must you do? *Rename 1 one thousand as 10 hundreds.* Cross out the 5 and write 4 above the One Thousands place.
   - ➤ How many hundreds do you have when you rename? *13* Cross out the 3 in the Hundreds place and write 13 above it.
   - ➤ Now can you subtract the hundreds? *yes* What is 13 − 7? *6* Write 6 in the Hundreds place.
   - ➤ Which place do you subtract next? *One Thousands*
   - ➤ What is 4 − 3? *1* Write 1 in the One Thousands place.
2. Read the answer together: 1,641.
   (***Note:*** Continue to display each problem in this section for the next activity.)
3. Write 34,578 − 29,461 vertically for display.
   - ➤ Which place do you subtract first? *Ones*
   - ➤ What does 8 − 1 equal? *7* Write 7 in the Ones place.
   - ➤ Which place do you subtract next? *Tens*
   - ➤ What is 7 − 6? *1* Write 1 in the Tens place.
   - ➤ What do you do next? *Subtract the hundreds.*
   - ➤ What does 5 − 4 equal? *1* Write 1 in the Hundreds place.
   - ➤ Which place do you subtract next? *One Thousands*
   - ➤ Can you subtract 9 one thousands from 4 one thousands? *no* What must you do? *Rename 1 ten thousand as 10 one thousands.* Cross out the 3 and write 2 above the Ten Thousands place.
   - ➤ Now how many one thousands do you have? *14* Cross out the 4 and write 14 above the One Thousands place.
   - ➤ What is 14 − 9? *5* Write 5 in the One Thousands place.
   - ➤ Which place do you subtract next? *Ten Thousands*
   - ➤ Can you subtract 2 ten thousands from 2 ten thousands? *yes* How many are left? *none*
4. Read the answer together: 5,117.
5. Follow a similar procedure as you guide the students in solving these problems on paper.

76,324	3,205	59,182
− 28,405	− 1,720	− 13,834
47,919	*1,485*	*45,348*

Check a subtraction problem using addition

- ➤ How do you think you can check the answer to a subtraction problem to see if it is correct? *Possible answers: Add the amount taken away to the amount remaining; add the 2 parts to make the whole amount; use a calculator.*

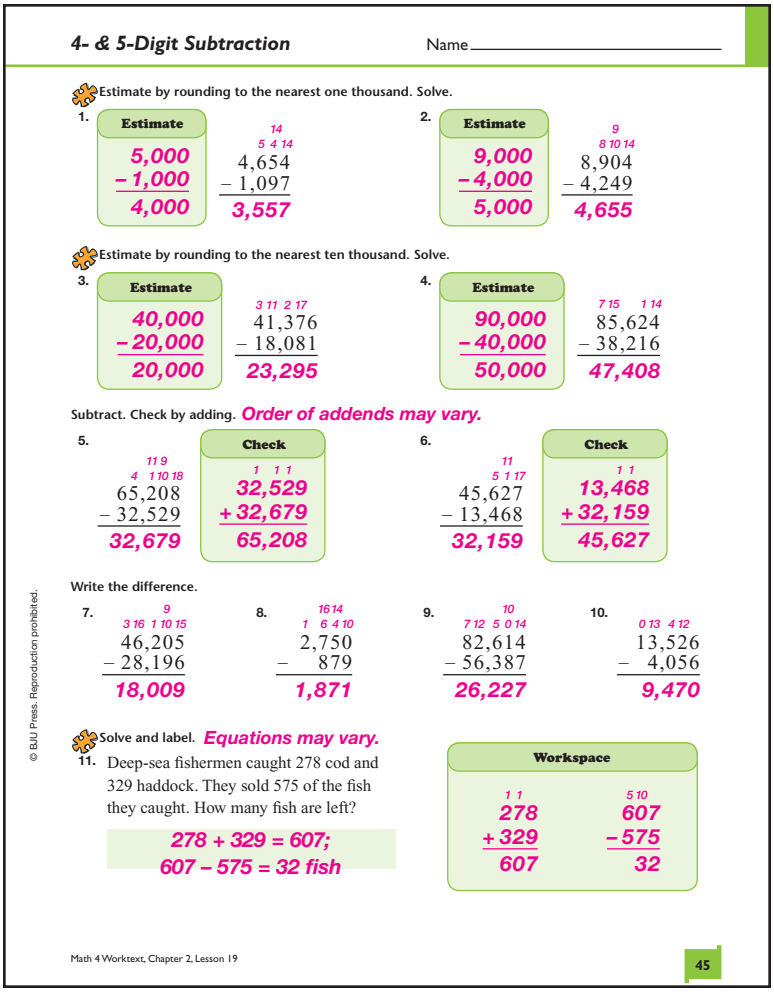
1. Remind the students that you can add the 2 parts to make the whole or total amount.
2. Direct attention to 5,364 − 3,723 = 1,641 displayed in vertical form.
   - ➤ What addition problem would you write to check the answer to this subtraction problem? *3,723 + 1,641 or 1,641 + 3,723*
3. Choose a student to write the addition problem for display and solve it while the rest of the students do so on paper. *3,723 + 1,641 = 5,364*
   - ➤ Is the difference of 1,641 correct? How do you know? *Yes; the sum of the addition problem is the same as the number we subtracted from in the subtraction problem. Elicit that when 1,641 was added to the known part, the sum was the same whole amount.*
   - ➤ What would you need to do if the sum did not equal the number that you subtracted from? *Elicit that this would indicate that a mistake was made when solving the subtraction problem or the addition problem and that the problems need to be checked or redone to find the mistake.*
4. Repeat the procedure for the remaining 4 subtraction problems displayed.

Estimate the difference by rounding

1. Write 8,154 − 5,734 = ___ in vertical form as shown. (Do not write the estimates or answer yet.)

8,000	←	8,154
− *6,000*	←	− 5,734
2,000		*2,420*

2. Remind the students that estimating helps you to determine whether your exact answer is reasonable.
   - ➤ Which one thousand numbers is 8,154 between? *8,000 and 9,000*



4- & 5-Digit Subtraction Name _____

Estimate by rounding to the nearest one thousand. Solve.

1. Estimate: 5,000 − 1,000 = 4,000; 4,654 − 1,097 = 3,557
2. Estimate: 9,000 − 4,000 = 5,000; 8,904 − 4,249 = 4,655

Estimate by rounding to the nearest ten thousand. Solve.

3. Estimate: 40,000 − 20,000 = 20,000; 41,376 − 18,081 = 23,295
4. Estimate: 90,000 − 40,000 = 50,000; 85,624 − 38,216 = 47,408

Subtract. Check by adding. *Order of addends may vary.*

5. 65,208 − 32,529 = 32,679; Check: 32,529 + 32,679 = 65,208
6. 45,627 − 13,468 = 32,159; Check: 13,468 + 32,159 = 45,627

Write the difference.

7. 46,205 − 28,196 = 18,009
8. 2,750 − 879 = 1,871
9. 82,614 − 56,387 = 26,227
10. 13,526 − 4,056 = 9,470

Solve and label. *Equations may vary.*

11. Deep-sea fishermen caught 278 cod and 329 haddock. They sold 575 of the fish they caught. How many fish are left?

278 + 329 = 607;
607 − 575 = 32 fish

Workspace: 278 + 329 = 607; 607 − 575 = 32

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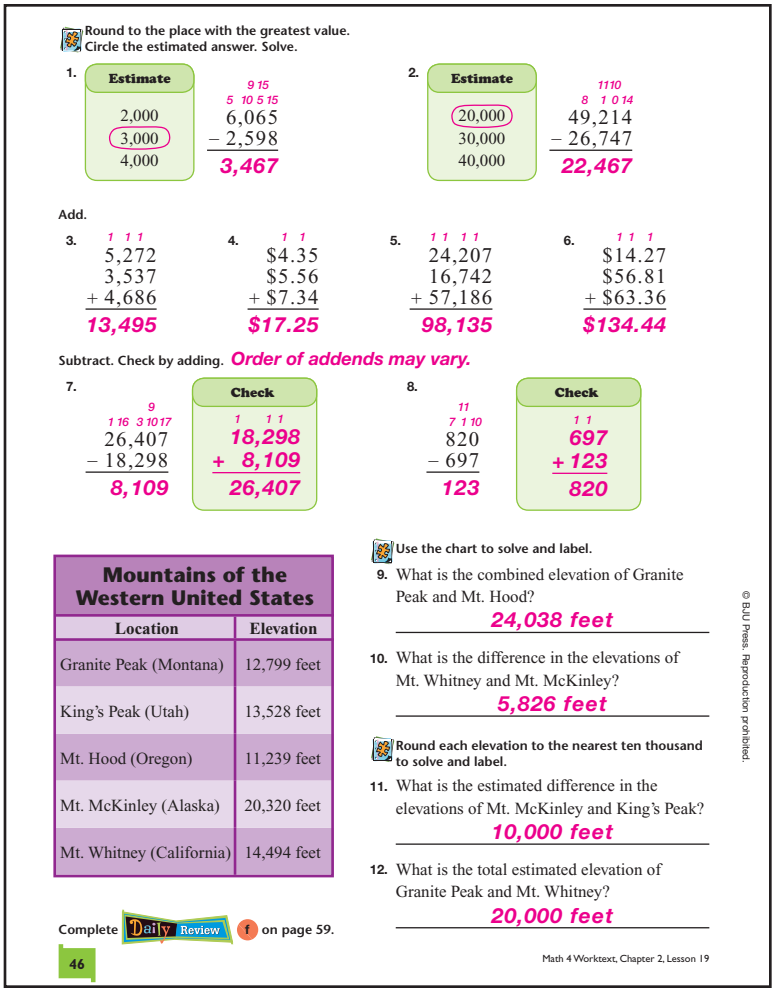

Round to the place with the greatest value. Circle the estimated answer. Solve.

1. Estimate: 2,000; (3,000); 4,000. 6,065 − 2,598 = 3,467
2. Estimate: (20,000); 30,000; 40,000. 49,214 − 26,747 = 22,467

Add.

3. 5,272 + 3,537 + 4,686 = 13,495
4. $4.35 + $5.56 + $7.34 = $17.25
5. 24,207 + 16,742 + 57,186 = 98,135
6. $14.27 + $56.81 + $63.36 = $134.44

Subtract. Check by adding. *Order of addends may vary.*

7. 26,407 − 18,298 = 8,109; Check: 18,298 + 8,109 = 26,407
8. 820 − 697 = 123; Check: 697 + 123 = 820

Mountains of the Western United States

Location	Elevation
Granite Peak (Montana)	12,799 feet
King's Peak (Utah)	13,528 feet
Mt. Hood (Oregon)	11,239 feet
Mt. McKinley (Alaska)	20,320 feet
Mt. Whitney (California)	14,494 feet

Use the chart to solve and label.

9. What is the combined elevation of Granite Peak and Mt. Hood? 24,038 feet
10. What is the difference in the elevations of Mt. Whitney and Mt. McKinley? 5,826 feet

Round each elevation to the nearest ten thousand to solve and label.

11. What is the estimated difference in the elevations of Mt. McKinley and King's Peak? 10,000 feet
12. What is the total estimated elevation of Granite Peak and Mt. Whitney? 20,000 feet

Complete Daily Review f on page 59.

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➤ How do you round to the nearest one thousand? *Possible answers: Look at the Hundreds place to see if the digit is less than 5 or if it is 5 or greater; decide whether 8,154 is greater than or less than 8,500, the halfway point between 8,000 and 9,000.*

➤ Is 8,154 nearer to 8,000 or 9,000? How do you know? *8,000; the 1 in the Hundreds place is less than 5 so you round down; 8,154 is less than the halfway point of 8,500.*

Write 8,000 in front of the arrow beside 8,154.

➤ Does 5,734 round down to 5,000 or up to 6,000? How do you know? *Up to 6,000; the 7 in the Hundreds place is greater than 5; 5,734 is greater than the halfway point of 5,500.*

Write − 6,000 in front of the arrow beside − 5,734.

➤ What does 8,000 − 6,000 equal? *2,000* Write the estimate.

3. Choose a student to solve the problem.

➤ What is the exact answer? *2,420* Lead a discussion about the reasonableness of the exact answer.

4. Follow a similar procedure for this problem; round to the nearest ten thousand.

60,000 ← 55,726
− *30,000* ← − 29,614
30,000 *26,112*

Solve a multi-step word problem

Last week, Mendoza and his crew caught 245 fish while deep-sea fishing. This week, Mendoza caught 79 fish, Captain Bailey caught 65, Ernesto caught 36, and the other crew members caught 134. How many more fish did they catch this week than last week?

➤ What is the question asking you to find? *how many more fish they caught this week than last week*

1. Remind the students that this word problem is a *comparison* problem. Explain that you are comparing the number of fish caught during each week by finding the difference between the two sets.

➤ How many fish were caught last week? *245*

➤ Do you know how many fish were caught this week? *no*

➤ How many steps do you think are needed to solve this problem? *Elicit 2.* What are the 2 steps? *Add to find out how many fish they caught this week; subtract to find the difference between the number of fish they caught last week and this week.*

➤ What information will you use to find out how many fish were caught this week? *79 fish, 65 fish, 36 fish, and 134 fish*

➤ What operation do you use? *addition*

➤ What is your equation? *79 + 65 + 36 + 134 = __*

2. Write the equation for display. Direct the students to write the equation on paper and solve it.

➤ How many fish did they catch this week? *314*

Complete the equation.

➤ Now what can you find out? *how many more fish were caught this week than last week*

➤ What operation do you use? *subtraction*

➤ What is your equation? *314 − 245 = __*

3. Write the equation for display. Direct the students to write the equation on paper and to solve and label it.

➤ What is your answer? *69 fish* Does your answer make sense? Why? *Accept any reasonable answer.* Complete the equation.

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