LESSON 15 | **Worktext** pp. 37–38, 57 | Correlated **Math Reviews** pp. 27–28

Objectives
- Add 2- and 3-digit numbers with renaming
- Solve an addition word problem
- Estimate the sum by rounding to the nearest ten or the nearest hundred
- Solve addition problems with 3 addends

Teacher Materials
- Chart 5: *Problem-Solving Plan*
- Place Value Kit
- Number Cards: 0–19
- Vertical Number Lines transparency, page IA11 (CD)
- Division flashcards: 1 as a divisor (A list of facts is provided on Appendix pages A14–A16.)

Student Materials
- Place Value Mats
- Place Value Kits
- Number Cards: 0–9

Notes
The word form side of the Number Cards is referred to as the Number Word Cards in the lessons.
Leave the *Problem-Solving Plan* chart displayed for future use.

Practice and Review

Number words *zero–nineteen*
Lead in reading in random order the number words on the Number Word Cards. Then guide the students in sequencing the number words and writing the corresponding numbers.

Division facts: 1 as a divisor
1. Display the division flashcards slowly, one at a time. Allow volunteers to give the answers.
2. Distribute Number Cards 0–9. Display each flashcard. Direct each student to use the Number Cards to "write" the quotient.

Practice facts 8–10 minutes daily.

Introduce the Lesson

After the Flood, God told Noah that all animals would be fearful of man (Genesis 9:2). Some animals such as dogs and cats have been domesticated—tamed and trained to live with man. Occasionally, wild animals lose their fear of man, depending on man for food or care.

Although it is rare, herring gulls have been known to befriend a single person and become a pet. [Bible Promise: I. God as Master]

Teach for Understanding

Add 2- and 3-digit numbers with renaming
1. Distribute the Place Value Mats and the Place Value Kits. Display the *Problem-Solving Plan* chart and draw a Place Value frame for display.

Stephen has 249 baseball cards. Jason has 164 football cards. What is the total number of cards that both boys own?

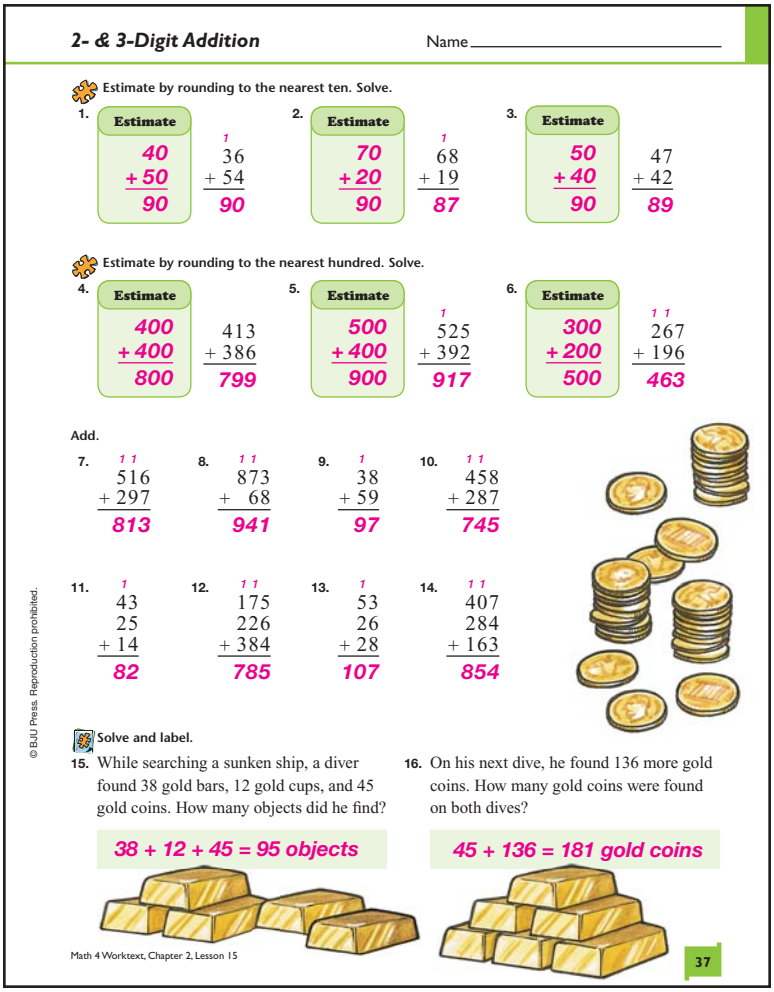
➤ What is the question asking you to find? *the total number of cards that both boys own*
➤ What information is given? *Stephen has 249 cards, and Jason has 164 cards.*
➤ What operation do you use to solve this problem? *addition*
➤ What is your equation? *249 + 164 = __* Write the equation for display.

2. Direct each student to show the first addend near the top of his mat and the second addend near the bottom of his mat. Demonstrate each step in the Place Value frame.
2 hundreds, 4 tens, 9 ones; 1 hundred, 6 tens, 4 ones
➤ Which place do you add first? *Ones*
3. Direct the students to combine the ones.
➤ What is 9 ones + 4 ones? *13 ones*
➤ What do you do next? *Rename 10 ones as 1 ten.*
4. Instruct the students to remove 10 ones and place 1 ten at the top of the Tens place.
➤ When you renamed, did you change the value of the 13 ones? *no* What did you do? *pictured the number differently*
➤ Which place do you add next? *Tens*
➤ What is 1 ten + 4 tens + 6 tens? *11 tens*
➤ What do you do next? *Rename 10 tens as 1 hundred.*
5. Instruct the students to remove 10 tens and place 1 hundred at the top of the Hundreds place.
➤ What is the next step? *Add the hundreds.*
➤ What is 1 hundred + 2 hundreds + 1 hundred? *4 hundreds*
➤ Is renaming necessary? Why? *No; there are less than 10 hundreds.*
➤ How many cards do the boys have altogether? *413* What label should you give the answer? *cards*
6. Complete the equation: *413 cards*.
7. Choose a student to write 249 + 164 = __ vertically for display. Guide him in explaining each step as he solves the problem.
➤ Does your answer make sense? Why? *Accept any reasonable answer.*
8. Repeat the procedure for 48 + 72 = *120*, 135 + 283 = *418*, and 723 + 459 = *1,182*.

Estimate the sum by rounding
➤ What is *estimating*? *finding an answer close to the exact answer*
1. Direct attention to the first number line on the Vertical Number Lines transparency. Write this problem for display. (Do not write the estimates or answer yet.)

40	←	36
+ 20	←	+ 22
60		*58*

2. Remind the students that rounding to the nearest ten is one way of estimating.
➤ Is 36 nearer to 30 or 40 on the number line? How do you know? *40; possible answers: 36 is greater than 35, the halfway point between 30 and 40; the 6 in the Ones place is greater than 5, so you round up to 40; 36 is 6 more than 30 but only 4 less than 40.*
Write 40 in front of the arrow beside 36.
➤ Is 22 nearer to 20 or 30? How do you know? *20; accept any reasonable answer.*
Write + 20 in front of the arrow beside + 22.
➤ What is 40 + 20? *60* Write the estimated answer.



2- & 3-Digit Addition Name _____

Estimate by rounding to the nearest ten. Solve.

1. Estimate: 40 + 50 = 90; 36 + 54 = 90
2. Estimate: 70 + 20 = 90; 68 + 19 = 87
3. Estimate: 50 + 40 = 90; 47 + 42 = 89

Estimate by rounding to the nearest hundred. Solve.

4. Estimate: 400 + 400 = 800; 413 + 386 = 799
5. Estimate: 500 + 400 = 900; 525 + 392 = 917
6. Estimate: 300 + 200 = 500; 267 + 196 = 463

Add.

7. 516 + 297 = 813
8. 873 + 68 = 941
9. 38 + 59 = 97
10. 458 + 287 = 745
11. 43 + 25 + 14 = 82
12. 175 + 226 + 384 = 785
13. 53 + 26 + 28 = 107
14. 407 + 284 + 163 = 854

Solve and label.

15. While searching a sunken ship, a diver found 38 gold bars, 12 gold cups, and 45 gold coins. How many objects did he find?
38 + 12 + 45 = 95 objects

16. On his next dive, he found 136 more gold coins. How many gold coins were found on both dives?
45 + 136 = 181 gold coins

Add parentheses to show *grouping 10*. Solve.

1. (6 + 4) + 7 = 17
2. 5 + (8 + 2) = 15
3. (7 + 3) + 9 = 19

Solve.
Color the book if the estimating is correct.

4. Estimate: 70 + 10 = 80; 68 + 13 = 81
5. Estimate: 500 + 300 = 800; 529 + 384 = 913
6. Estimate: 300 + 400 = 700; 274 + 353 = 627

Add.

7. 306 + 487 = 793
8. 65 + 19 = 84
9. 87 + 6 = 93
10. 538 + 286 = 824
11. 620 + 289 = 909
12. 36 + 45 = 81
13. 34 + 27 + 45 = 106
14. 283 + 420 + 277 = 980
15. 164 + 348 + 452 = 964
16. 63 + 29 + 17 = 109
17. 84 + 23 + 57 = 164
18. 173 + 245 + 317 = 735

Solve and label.

19. The elementary school library had 198 biographies. The librarian purchased 24 new biographies. How many biographies does the library have now?
198 + 24 = 222 biographies

20. The librarian also purchased 27 new nonfiction books. Estimate the number of new books purchased by the librarian.
30 + 20 = 50 new books

Write the fact family equations.

21. 6 8 14
6 + 8 = 14; 8 + 6 = 14; 14 − 8 = 6; 14 − 6 = 8
Order of equations may vary.

Complete Daily Review b on page 57.

3. Choose a student to solve the problem. *58*
4. Direct attention to the second number line on the transparency. Write this problem for display. (Do not write the estimates or answer yet.)

200	←	174
+ *100*	←	+ 112
300		*286*

- How do you round 174 to the nearest hundred? *Possible answers: decide whether the number is nearer to 100 or 200; decide whether the number is more or less than 150.*
- Is 174 nearer to 100 or 200? How do you know? *200; possible answers: 174 is greater than 150; the 7 in the Tens place is greater than 5, so you round up.* Write the estimate.
- Is 112 nearer to 100 or 200? How do you know? *100; accept any reasonable answer.* Write the estimate.
- What is 200 + 100? *300* Write the estimated answer.

5. Choose a student to solve the problem. *286*
6. Repeat the activity using these problems.

500	←	475	*20*	←	23	*200*	←	227
+ *300*	←	+ 343	+ *50*	←	+ 51	+ *200*	←	+ 162
800		*818*	*70*		*74*	*400*		*389*

Solve addition problems with 3 addends

On the first day of their fishing trip, the fishermen caught 148 herring, 536 cod, and 74 tuna. How many fish did they catch altogether during that first day?

- What is the question asking you to find? *how many fish were caught altogether*
- What information is given? *They caught 148 herring, 536 cod, and 74 tuna.*
- What operation do you use? *addition*
- What is your equation? *148 + 536 + 74 = __*

1. Write the equation in vertical form for display. Direct the students to write the problem on paper. Remind them to correctly align the numbers.
2. Demonstrate each step as you guide the students in solving the problem.
   - Can you make 10 when adding the ones? How? *yes; 6 + 4*
   - How many more ones do you have? *8*
     Instruct the students to write 8 in the Ones place and then write 1 above the Tens place to show 10 ones renamed as 1 ten.
   - Can you make 10 when adding the tens? How? *yes; 7 + 3*
   - How many more tens do you have to add? *4 and 1; 5*
   - How many tens do you have in all? *15*
     Direct the students to write 5 in the Tens place and then write 1 above the Hundreds place to show 10 tens renamed as 1 hundred.
   - Do you have enough hundreds to make 10? *no*
   - How many hundreds do you have? *7*
   - How many fish did the fishermen catch during their first day? *758 fish* Complete the equation.
3. Follow the procedure for these addition problems.

348	72	861
216	35	129
+ 62	+ 44	+ 250
626	*151*	*1,240*

Worktext pages 37–38, 57 (b)