

Objectives

- Develop an understanding of the types of subtraction
- Identify the type of subtraction word problem
- Solve subtraction word problems

Teacher Materials

- Chart 7: *Sixths, Eighths*
- Types of Subtraction transparency, page IA15 (CD)
- Subtraction Word Problems transparency, page IA16 (CD)
- Division flashcards: 5 as a divisor, and previously reviewed division facts
- 10 books

Student Materials

- Number Cards: 0–9

Practice and Review

Fractions: sixths and eighths

Review the fractions on the *Sixths, Eighths* chart. Emphasize that $\frac{6}{6}$ and $\frac{8}{8}$ are equal to 1 whole.

Division facts: 5 as a divisor

Teach for Understanding

Develop an understanding of the types of subtraction

- Read aloud the first word problem on the Types of Subtraction transparency. Guide students in role-playing the word problem.
 - **How many were in the whole set of students? 7**
 - **How many left the soccer game or were taken from the whole set? 3**
 - **How many students were left to play soccer? 4**
Choose a student to write for display the equation with its answer. $7 - 3 = 4$ students
- Write *take-away* for display. Explain that when a portion of the original or total amount is taken away it is called *take-away* subtraction.
(**Note:** Continue to display the words for the types of subtraction throughout this lesson.)
Choose students to give examples of take-away subtraction problems.
- Read aloud the second word problem on the transparency.
 - **Is this problem asking you to take something away from a whole set? no**
 - **What is the question asking you? to find out how many more books Jill has than Tina**
Choose one girl to be Jill and give her 7 books. Select another girl to be Tina. Give her 3 books and tell her to stand beside Jill.
 - **Are these girls holding the same number of books? no**
 - **Who has more books? Jill**
 - **What did you do to determine that Jill has more books than Tina? Answers will vary, but elicit that you compared the number of books in each stack and saw that Jill's stack has more than Tina's.**
 - **What operation can you use to find out how many more books Jill has? Why do you think so? Subtraction; answers will vary, but elicit that by subtracting the amount in one set from the amount in the other set, you can find the difference between the amounts or how many more/less there are in one set than the other.**
- Write *missing addend* below *take-away* and *comparison*. Explain that this type of subtraction problem is called a *missing addend* subtraction problem because you subtract to find the missing addend so that you can know how many more are needed to make the total amount. Choose students to give examples of missing addend problems—3 girls and 4 boys.
- Read aloud the last word problem on the transparency. Choose students to role-play the 7 students in the problem.
 - **Do you think that this is a take-away subtraction problem? Why? Elicit that it is not a take-away subtraction problem because no students are being taken away from the reading group.**
 - **Do you think that this is a missing addend subtraction problem? Why? Elicit that this is not a missing addend subtraction problem because in this problem you have the total amount of 7 students; you do not need to add more to make the total amount needed.**
 - **What do you think you need to do with this set of 7 students to solve this problem? Answers will vary, but elicit that you need to separate the known amount from the unknown amount, or the 3 girls from the boys.**
- Direct the 3 girls in the group to sit together and the boys to sit together.

- **What subtraction equation can you write to find out how many more books Jill has? $7 - 3 = 4$**

Write the equation for display: $7 - 3 = 4$ books.

- Write *comparison* for display below *take-away*. Explain that this type of subtraction problem is called a *comparison* subtraction problem because 2 sets are being compared. Choose students to give examples of comparison subtraction problems.
- Read the third word problem aloud.
 - **How many students does Mr. Jacobs need to help clean desks? 7**
 - **Did 7 students volunteer? no**
Choose 3 students to represent the 3 students who volunteered to remain after school.
 - **Would Mr. Jacobs be able to take away students from the 3 that volunteered to get the 7 students that he needs? no**
 - **What can Mr. Jacobs do so that he will have 7 students to clean desks? Answers will vary, but elicit that he needs to get some more students.**
 - **What operation do you use when you combine 2 amounts to get a total answer? addition**
- Write $_ + _ = _$ for display and direct attention to the word problem.
 - **Where would you write the 7 in this addition equation? Why? After the equal sign: it's the total number of students needed.** Write 7 as the sum of the equation.
 - **How many students volunteered to help? 3**
Write 3 as the first addend and n as the second addend. Remind the students that the letter n is a variable; it represents the missing addend—the number of students Mr. Jacobs still needs.
 - **What related subtraction equation can you write to find the missing addend? $7 - 3 = 4$**
- Write the subtraction equation above the missing addend equation.
 - **What is the missing addend? 4**
 - **How many more students does Mr. Jacobs need? 4**
Erase the n and write 4 in its place. Write *more students* below the 4.
- Write *missing addend* below *take-away* and *comparison*. Explain that this type of subtraction problem is called a *missing addend* subtraction problem because you subtract to find the missing addend so that you can know how many more are needed to make the total amount. Choose students to give examples of missing addend problems—3 girls and 4 boys.
- Read aloud the last word problem on the transparency. Choose students to role-play the 7 students in the problem.
 - **Do you think that this is a take-away subtraction problem? Why? Elicit that it is not a take-away subtraction problem because no students are being taken away from the reading group.**
 - **Do you think that this is a missing addend subtraction problem? Why? Elicit that this is not a missing addend subtraction problem because in this problem you have the total amount of 7 students; you do not need to add more to make the total amount needed.**
 - **What do you think you need to do with this set of 7 students to solve this problem? Answers will vary, but elicit that you need to separate the known amount from the unknown amount, or the 3 girls from the boys.**
- Direct the 3 girls in the group to sit together and the boys to sit together.

Types of Subtraction

Name _____

Solve and label.

1. Take Away

Brandon had saved \$35.00. He bought a baseball glove for \$14.99. How much money does he have left?

$$\$35.00 - \$14.99 = \$20.01$$

2. Comparing

Cassie read 705 pages for this summer's reading contest. Last summer she read 468 pages. How many more pages did she read this summer?

$$705 - 468 = 237 \text{ more pages}$$

3. Missing Addend

The Miller family is traveling 1,000 miles to visit grandparents. They traveled 565 miles the first day. How far do they need to go to arrive the next day?

$$1,000 - 565 = 435 \text{ miles}$$

4. Unknown Part

Mrs. Barnes spent \$650.85 on an oak table and a rocking chair. The table cost \$384.99. How much did the rocking chair cost?

$$\$650.85 - \$384.99 = \$265.86$$

Solve.

$$\begin{array}{r} 99 \\ 8 \ 101013 \\ 9,003 \\ - 6,748 \\ \hline 2,255 \end{array}$$

$$\begin{array}{r} 615 \\ 75.69 \\ - 26.24 \\ \hline 49.45 \end{array}$$

$$\begin{array}{r} 9 \\ 51017 \ 118 \\ \$607.28 \\ - \$378.19 \\ \hline \$229.09 \end{array}$$

$$\begin{array}{r} 111 \\ \$60.24 \\ \$36.53 \\ + \$16.89 \\ \hline \$113.66 \end{array}$$

$$\begin{array}{r} 11 \\ 276,214 \\ + 348,579 \\ \hline 624,793 \end{array}$$

$$\begin{array}{r} 911 \\ 5 \ 10111 \\ 6,021 \\ - 2,468 \\ \hline 3,553 \end{array}$$



53

Use the information to solve and label.

Foam Balls	
4-inch \$2.25	
7-inch \$4.75	

Basketballs	
regular \$20.88	
sale \$16.95	

Soccer Balls	
rubber \$10.95	
leather \$17.95	

Playground Balls	
8-inch \$5.99	
10-inch \$7.99	

1. A school bought a total of 15 basketballs and soccer balls. If 7 are soccer balls, how many are basketballs?

$$15 - 7 = 8 \text{ basketballs}$$

2. How much money will you save if you buy the basketball on sale?

$$\$20.88 - \$16.95 = \$3.93$$

3. What is the total cost of one rubber soccer ball, one 7-inch foam ball, and one 10-inch playground ball?

$$\$10.95 + \$4.75 + \$7.99 = \$23.69$$

4. You have saved \$8.45. You want to buy a leather soccer ball. How much more money do you need to save?

$$\$17.95 - \$8.45 = \$9.50$$

Steps and equations may vary. Final answers given.

5. You have \$25.00. How much will you have left if you buy the 8-inch playground ball and the leather soccer ball?

$$\$1.06$$

Workspace	
$\begin{array}{r} 14 \ 9 \\ 1 \ 4 \ 1010 \\ \$25.00 \\ - \$5.99 \\ \hline \$19.01 \end{array}$	$\begin{array}{r} 9 \\ 8 \ 1011 \\ \$19.01 \\ - \$17.95 \\ \hline \$1.06 \end{array}$

6. You have \$9.50. How much more will you need to buy the basketball on sale and the rubber soccer ball?

$$\$18.40$$

Workspace	
$\begin{array}{r} 1 \ 1 \\ \$16.95 \\ + \$10.95 \\ \hline \$27.90 \end{array}$	$\begin{array}{r} 1 \ 17 \\ \$27.90 \\ - \$9.50 \\ \hline \$18.40 \end{array}$

Complete **Daily Review** on page 60.

54

Math 4 Worktext, Chapter 2, Lesson 23

► What operation can you use to show that a set of 7 has been separated into 2 parts? **subtraction**

Choose a student to write for display the equation with its answer. $7 - 3 = 4 \text{ boys}$

11. Write **unknown part** below the other types of subtraction. Explain that this type of subtraction problem is called an **unknown part** subtraction problem; you subtract the known part of the set (i.e., the amount in 1 part of the set) from the total amount to find out how many are in the rest of that set.

► How is this unknown part subtraction problem different from the comparison subtraction word problem? **Answers will vary, but elicit that in this problem 1 set was separated into 2 parts. In the comparison problem, a set was not separated into 2 parts; the amount was given for each of the 2 sets, and those 2 sets were compared.**

Identify the type of subtraction word problem

Solve subtraction word problems

- Display the Subtraction Word Problems transparency. Guide the students in identifying the type of subtraction for the first word problem. Instruct each student to solve the problem on paper. **take-away; $\$15.00 - \$12.95 = \$2.05$**
- Follow a similar procedure for the remaining word problems.
 - missing addend; $243 + n = 325$; $325 - 243 = 82 \text{ miles}$**
 - comparison; $478 - 321 = 157 \text{ pages}$**
 - take-away; $25 - 19 = 6 \text{ mini candy bars}$**
 - unknown part; $325 - 133 = 192 \text{ baseball cards}$**



Worktext pages 53–54, 60 (j)