POWER BASICS ®

Basic Mathematics

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Table of Contents

UNIT 1

Addition and Subtraction

LESSON 1: Addition

WORDS TO KNOW

carry	plus sign
column	row
digit	sum
equal sign	total

What Is Addition?

When you add, you combine two or more groups into one group. These groups can include one thing or more than one thing. The number of things in one group can be added to the number of things in another group. Adding is quicker than counting.

You have three apples in one group below and two apples in the other.

Group One   Group Two

How many apples do you have altogether?

To answer this question, you can count:

$1 \longrightarrow 2 \longrightarrow 3 \longrightarrow 4 \longrightarrow 5$

Or, even faster, you can add:

$3 \longrightarrow + \longrightarrow 2 \longrightarrow = 5$

The sign for addition is + . It is called the **plus sign.** The plus sign tells you to add the numbers before and after the sign. The answer in an addition problem is called the **sum** or **total.** The result of addition equals the sum or total. The **equal sign** is = .

Look at the examples below.

Example 1

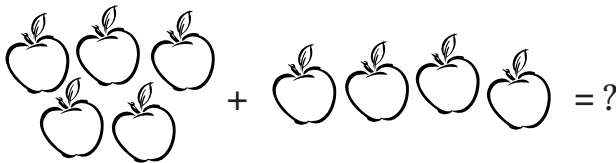$3 + 7 = 10$ Three plus seven equals ten. The sum or total is 10.

Example 2

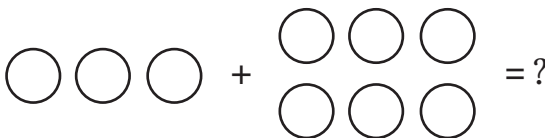$8 + 4 = 12$ Eight plus four equals twelve. The sum or total is 12.

■ PRACTICE 1: Addition

Answer the question about each set of pictures. Write your answer on the line after each question.

1. Look at the apples below. How many apples are there altogether? _____ apples

2. Look at the circles below. How many circles are there altogether? _____ circles

Find the sum for each addition problem. Write your answer on the line after each problem.

3. $1 + 1 =$ _____   4. $2 + 1 =$ _____

5. $2 + 2 =$ _____   6. $2 + 3 =$ _____

7. $3 + 1 =$ _____   8. $4 + 3 =$ _____

Addition Problems in Columns

Addition problems can be written in different ways. You can write an addition problem in a **row,** in which the numbers are lined up horizontally. Look at the example below.

Example 1

$$8 + 6 = 14$$

However, you will more often write an addition problem in a **column.** Put the addition sign to the left of the last number to be added. Then put a line under the last number, separating it from the total. Look at the example below.

Example 2

$$\begin{array}{r} 8 \\ +\ 6 \\ \hline 14 \end{array}$$

Addition problems are easier to solve when they are written in columns, especially if you are adding large numbers.

TIP

! The word *sum* comes from a Latin word that means "highest." So when we say "The sum of 6 and 3 is 9," we mean that the sum (9) is the highest number in the problem.

■ PRACTICE 3: Adding More Than Two Numbers

Find the sum for each problem. Circle your answer when you have finished.

1. 3
    4
    2
    + 6

2. $1 + 5 + 3 + 2 =$ _____

3. 1
    3
    4
    + 5

4. $4 + 2 + 1 + 3 =$ _____

5. 5
    2
    2
    + 7

6. $3 + 4 + 2 + 6 =$ _____

■ IN REAL LIFE

Addition skills can help you do work around the house. Ellis wants to make some shelves for his living room. He measures his living room wall and decides that each shelf should be 4 feet long. At the lumber yard, he notices that boards are sold in lengths of 6 feet, 8 feet, 10 feet, 12 feet, and 16 feet. The salesperson tells him he can buy one piece of wood and cut it into three pieces. If Ellis wants three shelves, each 4 feet long, which length of board should he buy? Write your answer on a separate sheet of paper.

Adding Two-Digit Numbers

A **digit** is any of the symbols used to write numbers: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. So far we have added numbers with one digit. Numbers from 10 to 99 have two digits.

Some One-Digit Numbers   **Some Two-Digit Numbers**

1, 3, 7, 6   10, 36, 21, 55

To add two-digit numbers, follow the steps below.

Example

$$35 + 54$$

Step 1. Line up the ones and tens digits in columns.

```
 tens ones
  3  5
+ 5  4
```

Step 2. Add the digits in the ones column.

```
   35
+  54
    9
```

Step 3. Add the digits in the tens column.

```
   35
+  54
   89
```

The sum is 89.