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I

THE MAGIC OF FRACTIONS

The world is full of fractions. If there weren't any fractions, you couldn't have half of your friend's cookie, or leave one-third of your spinach on your plate, or eat one-eighth of a pizza. What if your father sent you to the market to pick up a few groceries? On the list he might write:

- 1/4 pound of American cheese
- 3/4 pound of ham
- 1/2 gallon of milk
- half a dozen eggs
- one loaf of bread

If there weren't any fractions, you'd have to get either a whole of everything or nothing. Neither of these options would make your dad very happy.

What are fractions? "Fractions" are just another way to write numbers. Fractions show that a number is part of a set. For example, if you ate one slice of pizza out of an eight-slice pie, you can show that in a fraction by saying that you ate one-eighth (1/8) of the pizza. The word *fraction* means "part of a whole," from the Latin *fractio,* meaning "to break into pieces."

A fraction has two parts, a "numerator" and a "denominator." The numerator and the denominator are separated by a bar, as in $\frac{1}{2}$, or a slant line, as in 1/2 or 1/2 . The numerator is written on top of the bar or to the left of the slant line, and the denominator is written below the bar or to the right of the slant line. However the fraction is written, one-half means one of two equal parts of a whole. Look at the parts of these fractions:

- In the fraction $\frac{3}{4}$, 3 is the numerator and 4 is the denominator.
- In the fraction 2/3, 2 is the numerator and 3 is the denominator.
- In the fraction 1/10, 1 is the numerator and 10 is the denominator.
- In the fraction 4/3, 4 is the numerator and 3 is the denominator.

The denominator tells you how many equal parts make up the whole. If the denominator is 4, the whole is divided into four equal parts. If the denominator is 3, the whole is divided into three equal parts. The numerator represents how many parts are being used. If the numerator is 2, two parts are being used. If the numerator is 1, one part is being used.

Fractions can be expressed in words, such as "I'd like half a sandwich" for 1/2 or "I'll be back in a quarter of an hour" for 1/4. For most fractions, the word is just a combination of the numerator and the denominator, so 1/6 is said as "one-sixth."

FRACTION WORDS

Number Forms	Word Forms
1/2	one-half or half
1/4	one-fourth or one quarter
1 1/2	one and a half
13/16	thirteen-sixteenths

If you want to eat one-fourth of a sandwich, first divide the sandwich into four equal parts, and then eat one of them: 1/4.

If you want to eat three-fourths of an apple, first divide the apple into four equal parts, and then eat three of them: 3/4.

If you want to drink half a glass of milk, first mentally divide the milk in the glass into two equal parts, and then drink one of them: 1/2.

Fractions are an essential mathematical skill. You will use fractions every day of your life, so start practicing with the 40 fun fraction activities in this book. After the first one, you will have done one-fortieth of the activities. After the last one, you'll be a fractions master. Then you can proudly display the fractions master certificate at the back of this book.

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