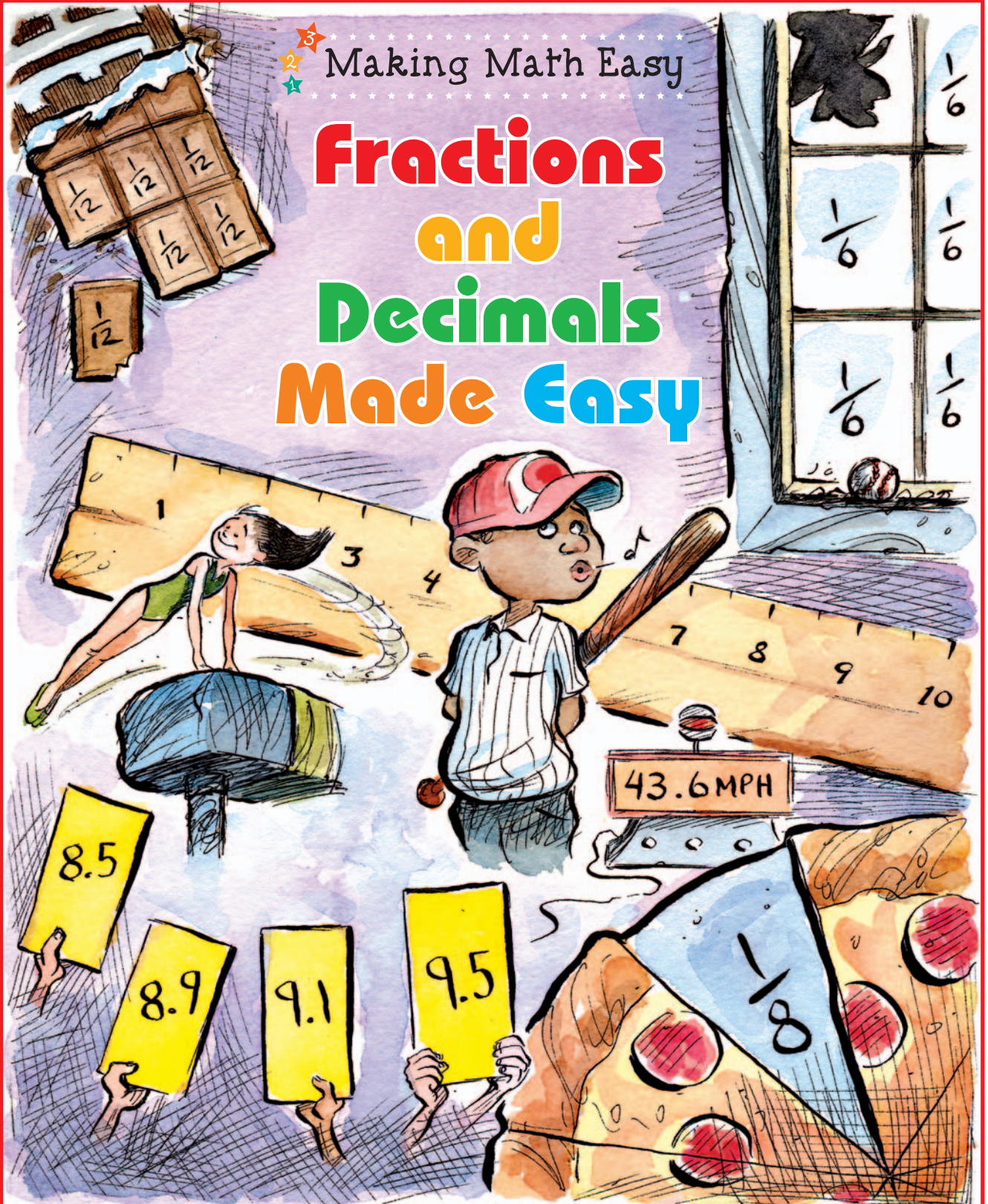


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★ Making Math Easy

Fractions and Decimals Made Easy



Rebecca Wingard-Nelson

Illustrated by Tom LaBaff

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5 Making Math Easy

Fractions and Decimals Made Easy

Rebecca Wingard-Nelson



Enslow Elementary

an imprint of

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Enslow Publishers, Inc.

40 Industrial Road

Box 398

Berkeley Heights, NJ 07922

USA

PO Box 38

Aldershot

Hants GU12 6BP

UK

<http://www.enslow.com>



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Library of Congress Cataloging-in-Publication Data

Wingard-Nelson, Rebecca.

Fractions and decimals made easy / Rebecca Wingard-Nelson.

p. cm. — (Making math easy)

Includes index.

ISBN 0-7660-2513-6 (hardcover)

1. Fractions—Juvenile literature. 2. Decimal fractions—Juvenile literature.

I. Title. II. Series.

QA117.W56 2005

513.2'6-dc22

2005012670

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

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Illustrations: Tom LaBaff

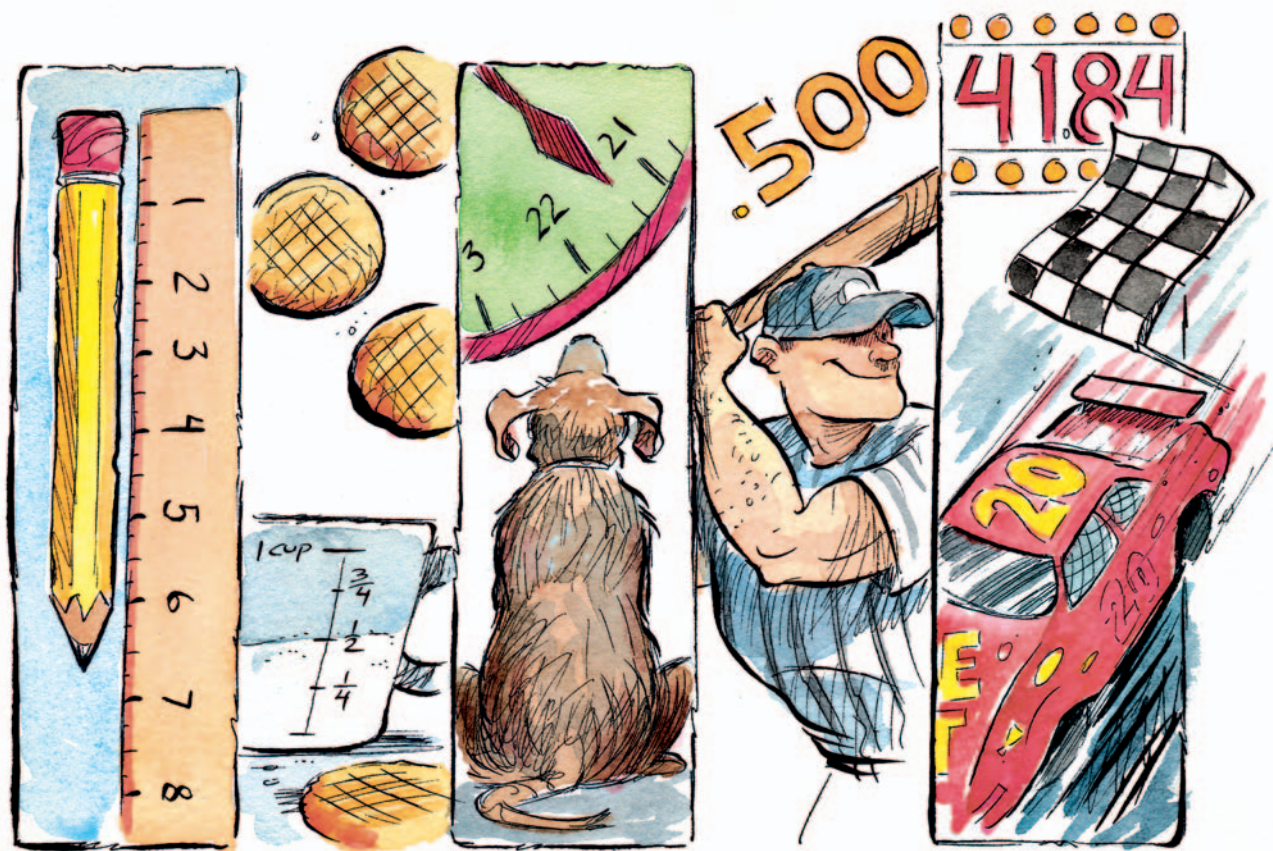
Cover illustration: Tom LaBaff

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Introduction

Math is all around, and an important part of anyone's life. You use math when you are playing games, cooking food, spending money, telling time, reading music, or doing any other activity that uses numbers. Even finding a television channel uses math!



Fractions and Decimals Are Everywhere

You use fractions every day. Every time you use the word *half*, you are talking about a fraction! Measurements often use fractions. For example, a pencil could be $6\frac{3}{4}$ inches long; you might need $\frac{1}{2}$ cup of sugar for cookies; and your dog might weigh $21\frac{1}{3}$ pounds.

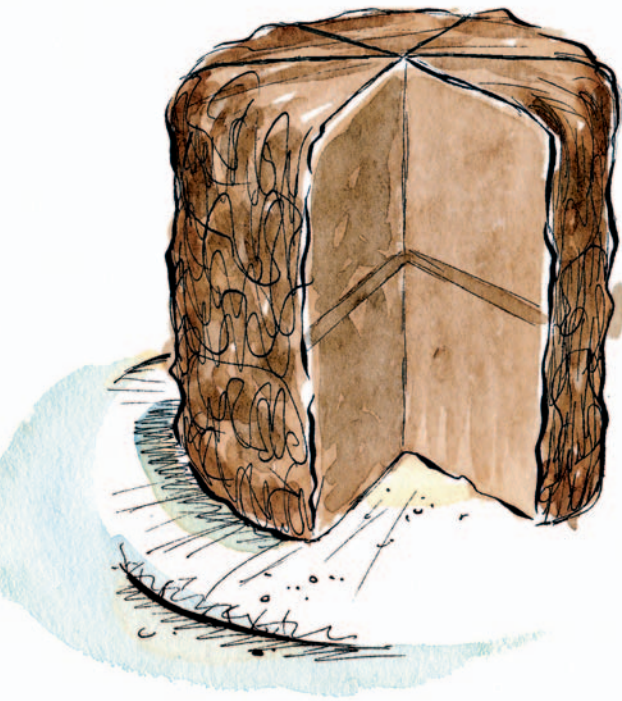
Decimals are an important part of our money system. Money amounts in dollars and cents are written as decimals. Sports statistics, such as batting averages and race times, are also given as decimal numbers. The metric system is a way to measure using decimals, instead of fractions.

Using This Book

This book can be used to learn or review fractions and decimals at your own speed. It can be used on your own or with a friend, tutor, or parent. Get ready to discover math . . . made easy!

What Is

Fractions are numbers that stand for part of a whole. A fraction may show part of one whole thing.



This chocolate cake was cut into 6 equal pieces.

One piece of the cake is gone.

You can use a fraction to show how much of the cake is gone.

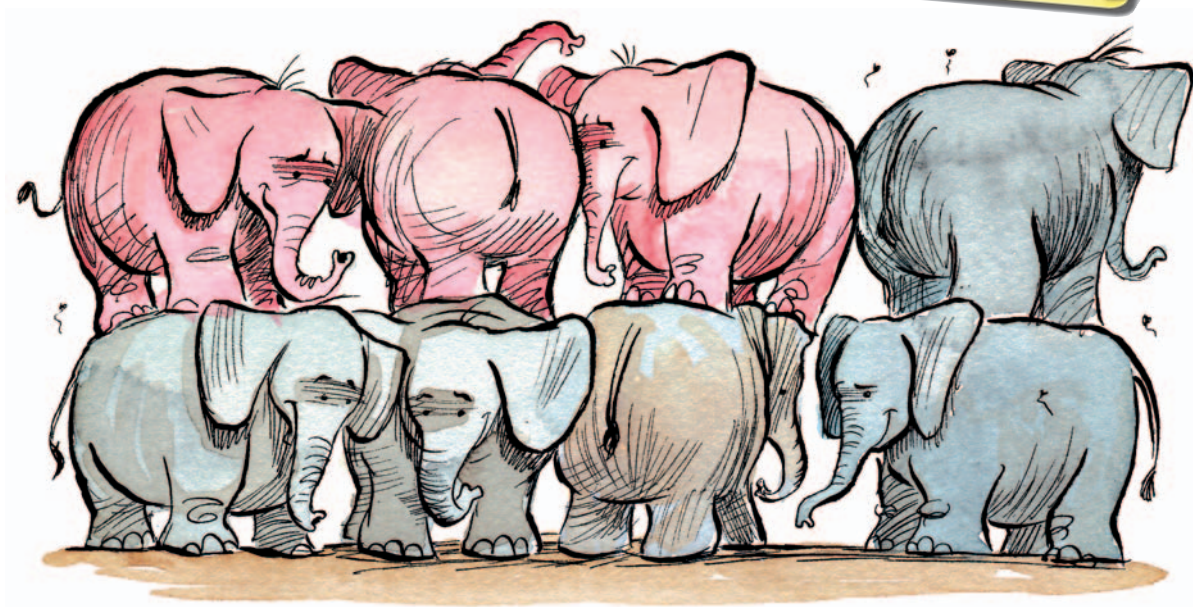
$\frac{1}{6}$ piece of cake is gone
 $\frac{6}{6}$ pieces of cake in the whole cake

$\frac{1}{6}$ of the cake is gone.

a fraction?

A fraction may show part of one whole group.

fraction—Part
of one whole
thing or group.



This is one whole group of elephants. Some of the elephants are pink. You can use a fraction to show how many in the group of elephants are pink.

$\frac{3}{8}$ elephants are pink
 $\frac{8}{8}$ elephants are in the group

$\frac{3}{8}$ of the elephants are pink.

Fraction

All fractions are made of two numbers, a top number and a bottom number.

The bottom number is the denominator. It tells how many equal parts are in the whole. The top number is the numerator. It tells how many parts you are talking about.

To help you remember which is which, think, “*D* is for *downstairs* and *denominator*, so the denominator goes on the bottom.”

numerator → $\frac{1}{4}$ ← number of parts you are talking about
denominator → 4 ← number of equal parts in the whole

When you read a fraction, read the top number first. Then read the bottom number using words like *half*, *thirds*, *fourths*, or *fifths*.

$$\frac{1}{4}$$

This fraction is read as *one fourth*.

Terms

$\frac{2}{3}$ of this pie is left.

The fraction $\frac{2}{3}$ is read as **two thirds**.

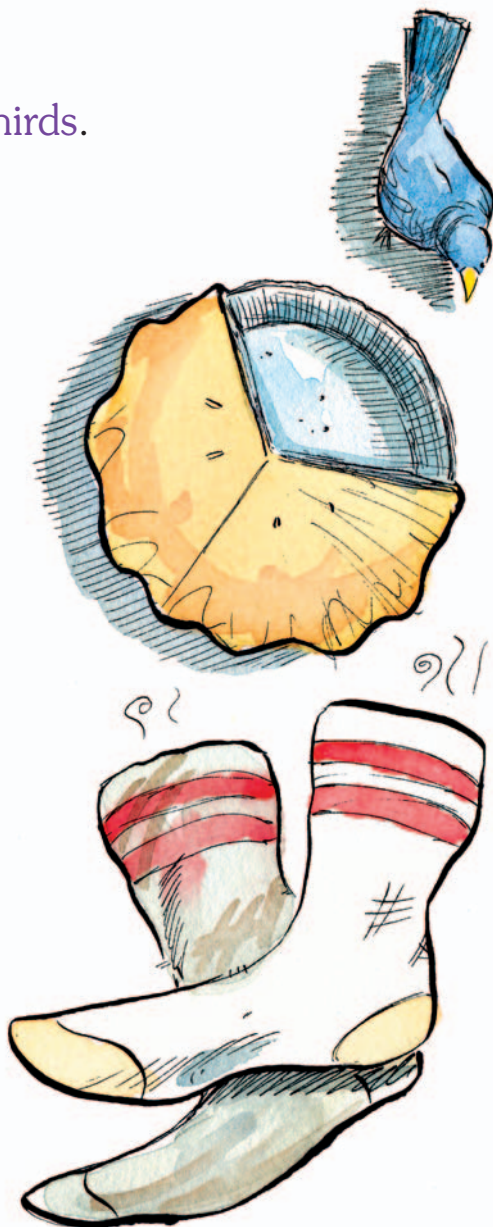
The bottom number, 3, tells you there are three equal pieces in the whole pie.

The top number, 2, tells you that two of the parts are left.

$\frac{1}{2}$ of these socks are dirty.

The fraction $\frac{1}{2}$ is read as **one half**.

The bottom number, 2, tells you there are two socks in the whole group. The top number, 1, tells you that one of the socks is dirty.



Proper

A fraction whose top number is smaller than its bottom number is called a proper fraction.

$$\frac{1}{3}$$

1 is smaller than 3.

$$\frac{5}{6}$$

5 is smaller than 6.

$$\frac{2}{7}$$

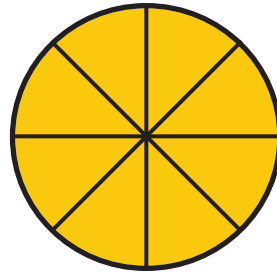
2 is smaller than 7.

$$\frac{9}{10}$$

9 is smaller than 10.

All proper fractions have a value less than one.

This circle has 8 equal parts.
It is one whole circle.



If you are looking at less than 8 parts of the circle, you are looking at less than one whole circle.

$\frac{1}{8}$, $\frac{2}{8}$, $\frac{3}{8}$, $\frac{4}{8}$, $\frac{5}{8}$, $\frac{6}{8}$, and $\frac{7}{8}$ are all less than 1.

$\frac{8}{8}$ is the same as 1, so it is not a proper fraction.

Fractions

proper fraction-
A fraction whose
top number is
smaller than its
bottom number

Proper fractions can be shown on a number line between the numbers 0 and 1.

Show $\frac{2}{5}$ on a number line.

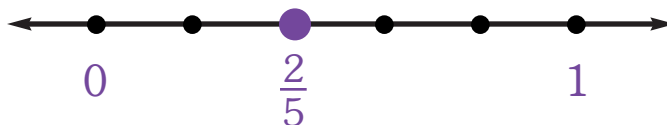
$\frac{2}{5}$ is less than 1. Draw a number line from 0 to 1.



The bottom number (denominator) is 5. That means there are 5 equal parts in one whole. Divide the number line from 0 to 1 into 5 equal spaces.



The top number (numerator) is 2. It tells you how many of the sections of the number line you are talking about. The numerator is 2, so count 2 spaces from the 0.



Improper

An improper fraction has a top number that is equal to or larger than the bottom number.

$$\frac{9}{9}$$

9 is equal to 9.

$$\frac{4}{3}$$

4 is larger than 3.

$$\frac{7}{6}$$

7 is larger than 6.

$$\frac{12}{5}$$

12 is larger than 5.

Fractions whose top and bottom number are the same have a value of 1.

A garden is divided into 3 parts. All 3 parts are planted with sunflowers. How much of the garden is planted with sunflowers?

$\frac{3}{3}$ is the same as 1 whole.

The whole garden is planted with sunflowers.

Fractions

improper fraction-
A fraction whose
top number is equal
to or larger than
its bottom number.

When the top number is larger than the bottom number, the fraction has a value greater than 1.

Here are three halves of a sweater. Three halves is written as the fraction $\frac{3}{2}$.



3 is greater than 2. $\frac{3}{2}$ is greater than 1.

There is more than one sweater.

Mixed

A mixed number is a mix of two kinds of numbers. There is a whole number, such as 2, and a proper fraction, such as $\frac{1}{4}$.

whole number $2\frac{1}{4}$ fraction

When you read a mixed number out loud, you say the whole number, the word *and*, then the fraction. The mixed number $2\frac{1}{4}$ is read as *two and one fourth*.

What does a mixed number stand for?

The mixed number $2\frac{1}{4}$ is greater than 2 but less than 3.

- 1 Draw 0 through 3 on a number line.
- 2 Make four equal spaces between the whole numbers 2 and 3.
- 3 The first line you made after the number 2 is $\frac{1}{4}$ more than 2, or $2\frac{1}{4}$.



Numbers

One page of a sticker book holds 6 famous monster stickers. Marlon has 12 full pages of stickers, and one page with 5 stickers on it. Write the number of pages of stickers as a mixed number.

Write the number of full pages as the whole number part.

12

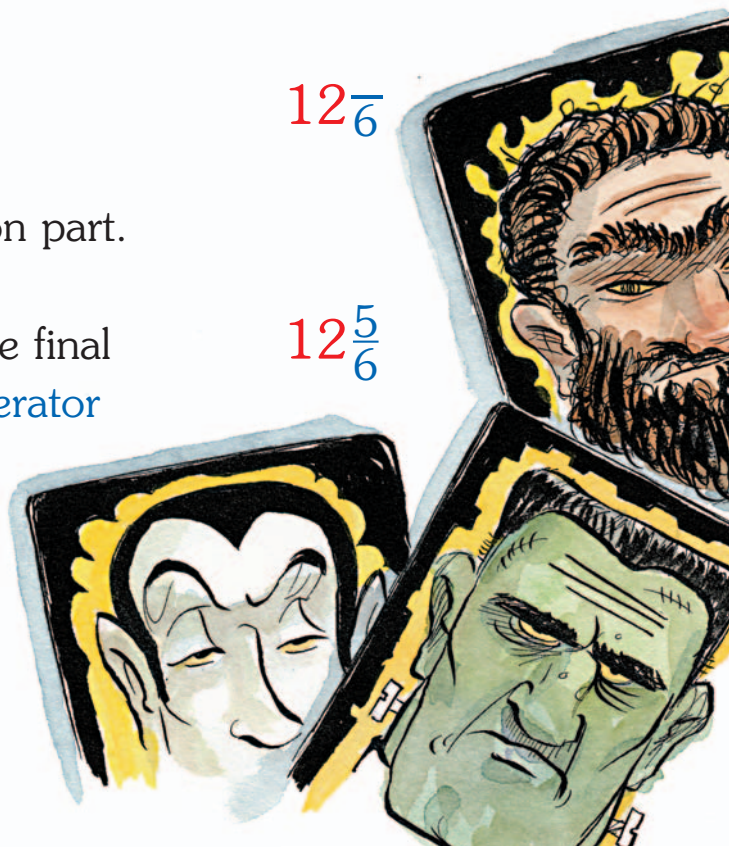
There are 6 stickers on a full page. Write 6 as the denominator of the fraction part.

$12\frac{\quad}{6}$

There are 5 stickers on the final page. Write 5 as the numerator of the fraction part.

$12\frac{5}{6}$

Marlon has $12\frac{5}{6}$ pages of famous monster stickers.

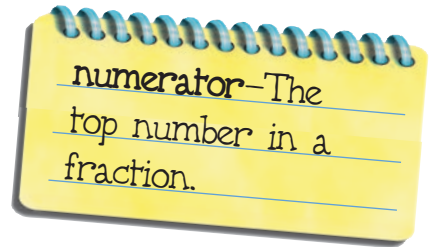


Comparing

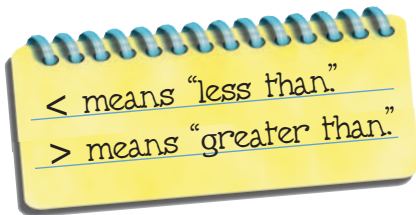
You can compare two fractions to see which one is greater. If the two fractions have the same denominator, just compare the numerators.

$$\frac{2}{5} \quad \frac{3}{5}$$

same denominators (5)



The numerator **2** is less than the numerator **3**, so the fraction $\frac{2}{5}$ is less than the fraction $\frac{3}{5}$.



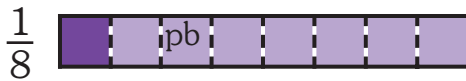
$$\frac{2}{5} < \frac{3}{5}$$

Fractions

What if the denominators are different? You can easily compare these fractions when the numerators are the same.

$$\frac{1}{3} \quad \frac{1}{8} \quad \text{— same numerators (1)}$$
$$\frac{1}{3} \quad \frac{1}{8} \quad \text{— different denominators}$$

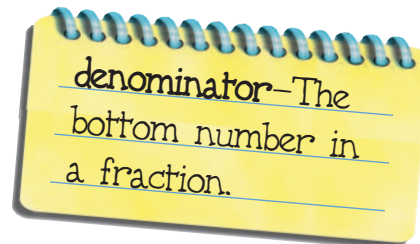
The denominators are different, but the numerators are the same, 1.



There are the same number of parts in both of these fractions (1 part), but the parts in $\frac{1}{3}$ are larger than the parts in $\frac{1}{8}$.

When the numerators are the same, the fraction with the smaller denominator is the larger fraction.

$$\frac{1}{3} > \frac{1}{8}$$



Comparing

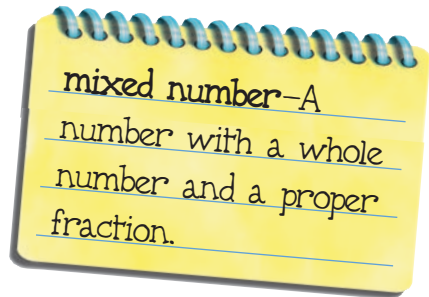
When you are comparing mixed numbers, look at the whole number first.

$$4\frac{2}{3}$$

whole number

$$6\frac{1}{2}$$

whole number



When mixed numbers have different whole number parts (4 and 6), just compare the whole numbers.

4 is less than 6, so $4\frac{2}{3}$ is less than $6\frac{1}{2}$.

$$4\frac{2}{3} < 6\frac{1}{2}$$



Mixed Numbers

When mixed numbers have the same whole number parts, just compare the fraction.

$$7\frac{3}{4}$$

fraction

$$7\frac{1}{4}$$

fraction

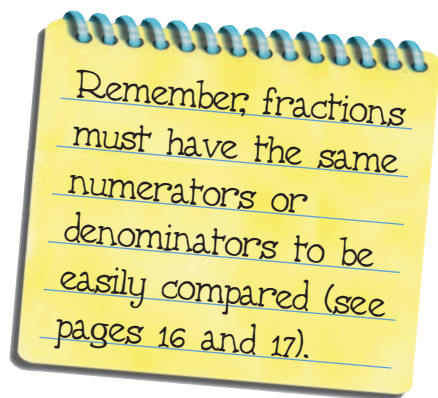
Since the mixed numbers $7\frac{3}{4}$ and $7\frac{1}{4}$ have the same whole number part, 7, you compare the fraction parts, $\frac{3}{4}$ and $\frac{1}{4}$.

$$7\frac{3}{4}$$

$$7\frac{1}{4}$$

The denominators are the same, 4, so compare the numerators, 3 and 1. Since 3 is more than 1, the fraction $\frac{3}{4}$ is more than the fraction $\frac{1}{4}$.

$$7\frac{3}{4} > 7\frac{1}{4}$$

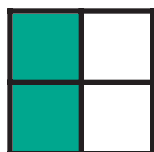


Equivalent

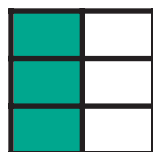
Some fractions, such as $\frac{1}{2}$ and $\frac{3}{6}$, use different numbers but have the same value.



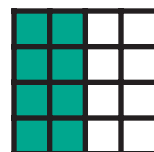
$$\frac{1}{2}$$



$$\frac{2}{4}$$



$$\frac{3}{6}$$



$$\frac{8}{16}$$

All of these fractions ($\frac{1}{2}$, $\frac{2}{4}$, $\frac{3}{6}$, and $\frac{8}{16}$) have equal values. They are called equivalent fractions.

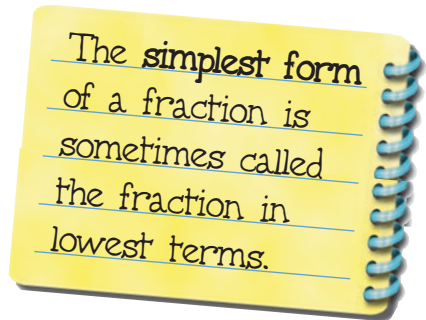
Let's find an equivalent fraction of $\frac{1}{2}$. Multiply or divide the top and bottom number by the same number (other than zero). You can pick any number you like. Let's pick the number 3.

$$\frac{1}{2} \times \frac{3}{3} = \frac{3}{6}$$

The fractions $\frac{1}{2}$ and $\frac{3}{6}$ are equivalent, or equal.

Fractions

When there is no number that both the top and bottom number can be divided by, except 1, the fraction is in simplest form.



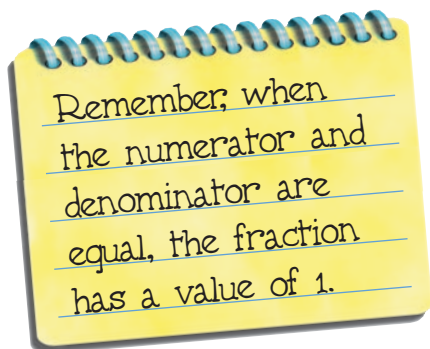
The simplest form of a fraction is sometimes called the fraction in lowest terms.

Put $\frac{4}{12}$ in simplest form.

The numbers 4 and 12 can both be divided by 4.

$$\frac{4}{12} \begin{array}{c} \div 4 \\ \div 4 \end{array} = \frac{1}{3}$$

The fractions $\frac{4}{12}$ and $\frac{1}{3}$ are equivalent. There is no number that both 1 and 3 can be divided by, except 1.



Remember, when the numerator and denominator are equal, the fraction has a value of 1.

$\frac{4}{12}$ in simplest form is $\frac{1}{3}$.

Estimating

You can estimate the value of a fraction by comparing the numerator and denominator.

- A** When the numerator is about half of the denominator, the value of the fraction is close to $\frac{1}{2}$.

Look at the fraction $\frac{5}{12}$. Half of the denominator, 12, is 6. The numerator, 5, is close to 6, so

$$\frac{5}{12} \text{ is close to } \frac{1}{2}.$$

- B** When the numerator is much less than half of the denominator, the value of the fraction is close to 0.

Look at the fraction $\frac{1}{6}$. Half of the denominator, 6, is 3. The numerator, 1, is much less than 3.

$$\frac{1}{6} \text{ is close to } 0.$$

- C** When the numerator is much greater than half of the denominator, the value of the fraction is close to 1.

Look at the fraction $\frac{7}{8}$. Half of the denominator, 8, is 4. The numerator, 7, is much greater than 4.

$$\frac{7}{8} \text{ is close to } 1.$$

Fractions

You can estimate the sum or difference of fractions by estimating the value of each fraction first.

Jamal read $1\frac{3}{8}$ books last week. Then he read another $2\frac{5}{6}$ books this week. About how many books did Jamal read in the two weeks?

First estimate the value of each fraction.

$1\frac{3}{8}$ $\frac{3}{8}$ is close to $\frac{1}{2}$,
so $1\frac{3}{8}$ is close to $1\frac{1}{2}$.

$2\frac{5}{6}$ $\frac{5}{6}$ is close to 1,
so $2\frac{5}{6}$ is close to 3.

Now add the estimated fractions.

$$\begin{array}{r} 1\frac{1}{2} \\ + 3 \\ \hline 4\frac{1}{2} \end{array}$$

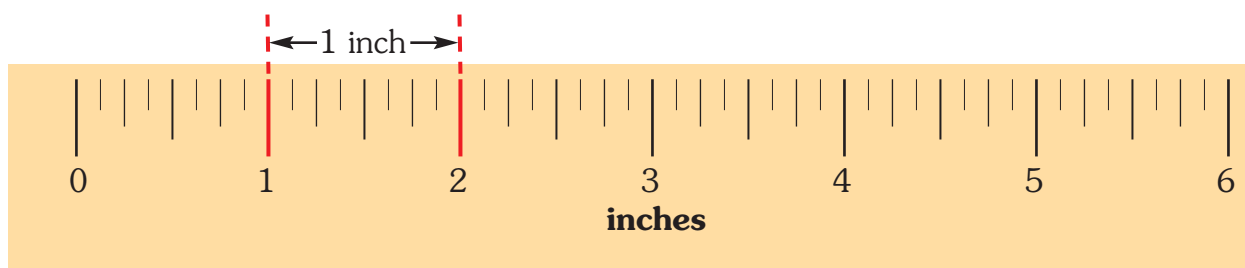
Jamal read about $4\frac{1}{2}$ books in the two weeks.



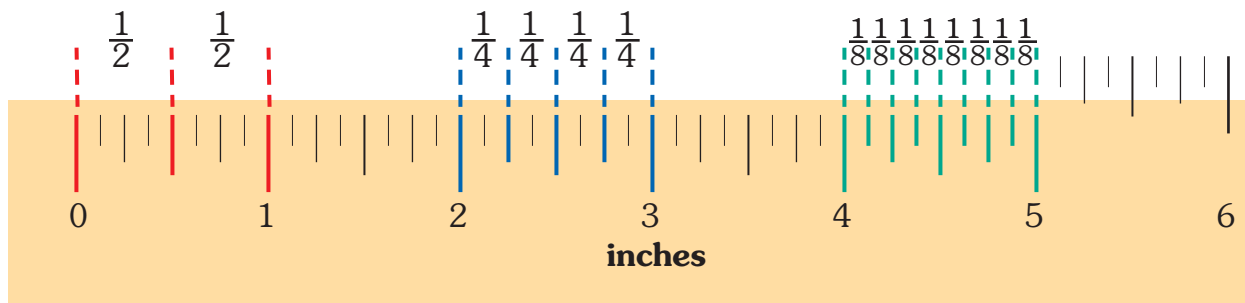
Fractions in

Fractions are used when you measure things. You might measure distance, volume, area, or time. Let's look at measuring distance.

This ruler is 6 inches long. The distance between each numbered line is 1 inch.



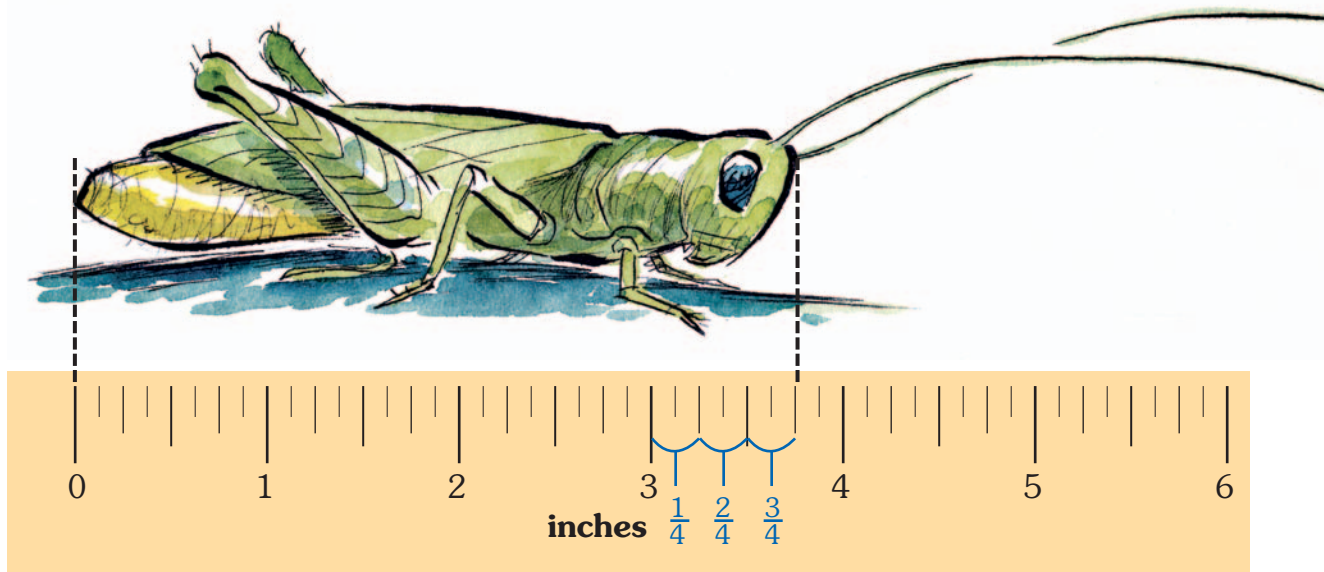
Each inch is divided by lines into halves ($\frac{1}{2}$), fourths ($\frac{1}{4}$), and eighths ($\frac{1}{8}$) of an inch.



Measurement

How long is this grasshopper?

When you measure something with a ruler, line up one end of the object with the zero mark on the ruler.

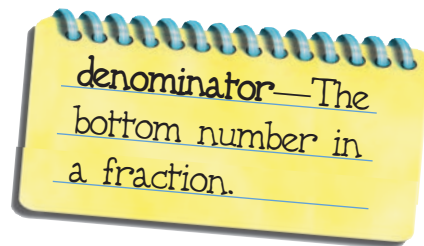


Compare the other end of the object to the ruler. The grasshopper is more than 3 inches long, but not 4 inches long. The end of the grasshopper is at one of the lines that divides an inch into fourths. Count how many fourths longer the grasshopper is than 3 inches.

The grasshopper is $3\frac{3}{4}$ inches long.

Adding

When you add fractions, first check the denominators. Fractions that have the same denominator are called like fractions.

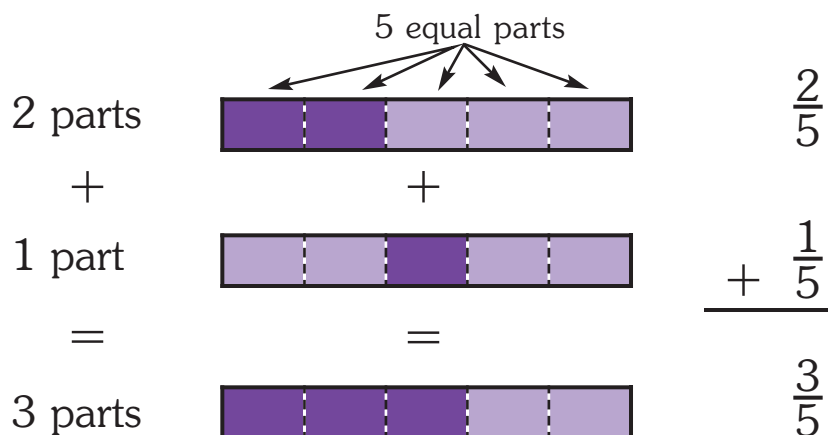


What is $\frac{2}{5} + \frac{1}{5}$?

If the fractions have the same denominators, add the numerators and keep the same denominator.

$$\frac{2}{5} + \frac{1}{5} = \frac{2 + 1}{5} = \frac{3}{5}$$

Remember, the denominator tells how many equal parts are in the whole.



Fractions

Harold made two kinds of soup. The vegetable soup needed $\frac{5}{8}$ cup of onions. The chicken soup needed $\frac{1}{8}$ cup of onions. All together, how many cups of onions did Harold use?

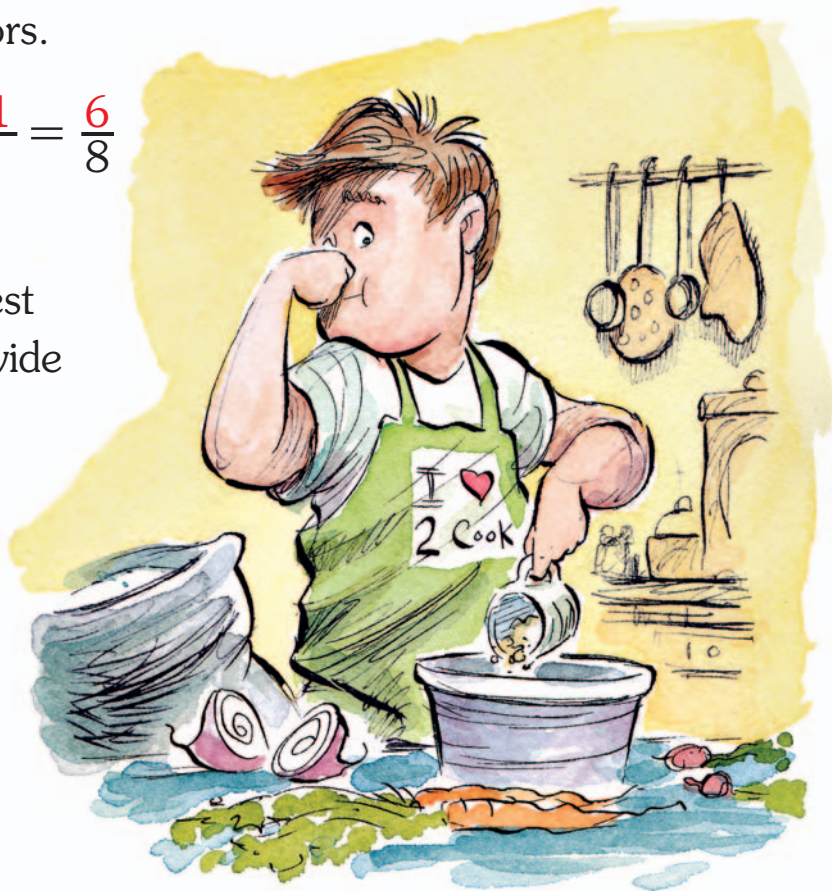
The fractions have the same denominator, so just add the numerators.

$$\frac{5}{8} + \frac{1}{8} = \frac{5 + 1}{8} = \frac{6}{8}$$

Always put your answers in simplest form. You can divide 6 and 8 by 2.

$$\frac{6}{8} \div \frac{2}{2} = \frac{3}{4}$$

Harold used $\frac{3}{4}$ cup of onion for both soups.

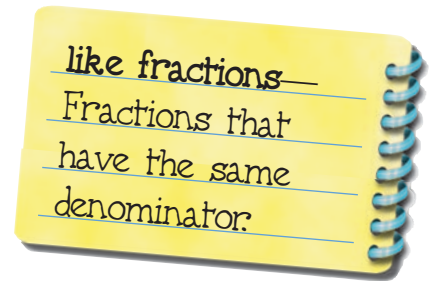


Subtracting

Subtracting fractions works like adding fractions. Make sure the fractions have the same denominator.

$$\frac{5}{8} - \frac{3}{8}$$

The fractions $\frac{5}{8}$ and $\frac{3}{8}$ are like fractions. Subtract the top numbers and keep the bottom number the same.



$$\frac{5}{8} - \frac{3}{8} = \frac{5 - 3}{8} = \frac{2}{8}$$

Always put your answer in simplest form.

$$\frac{2}{8} = \frac{2}{8} \div \frac{2}{2} = \frac{1}{4}$$

$$\frac{5}{8} - \frac{3}{8} = \frac{1}{4}$$

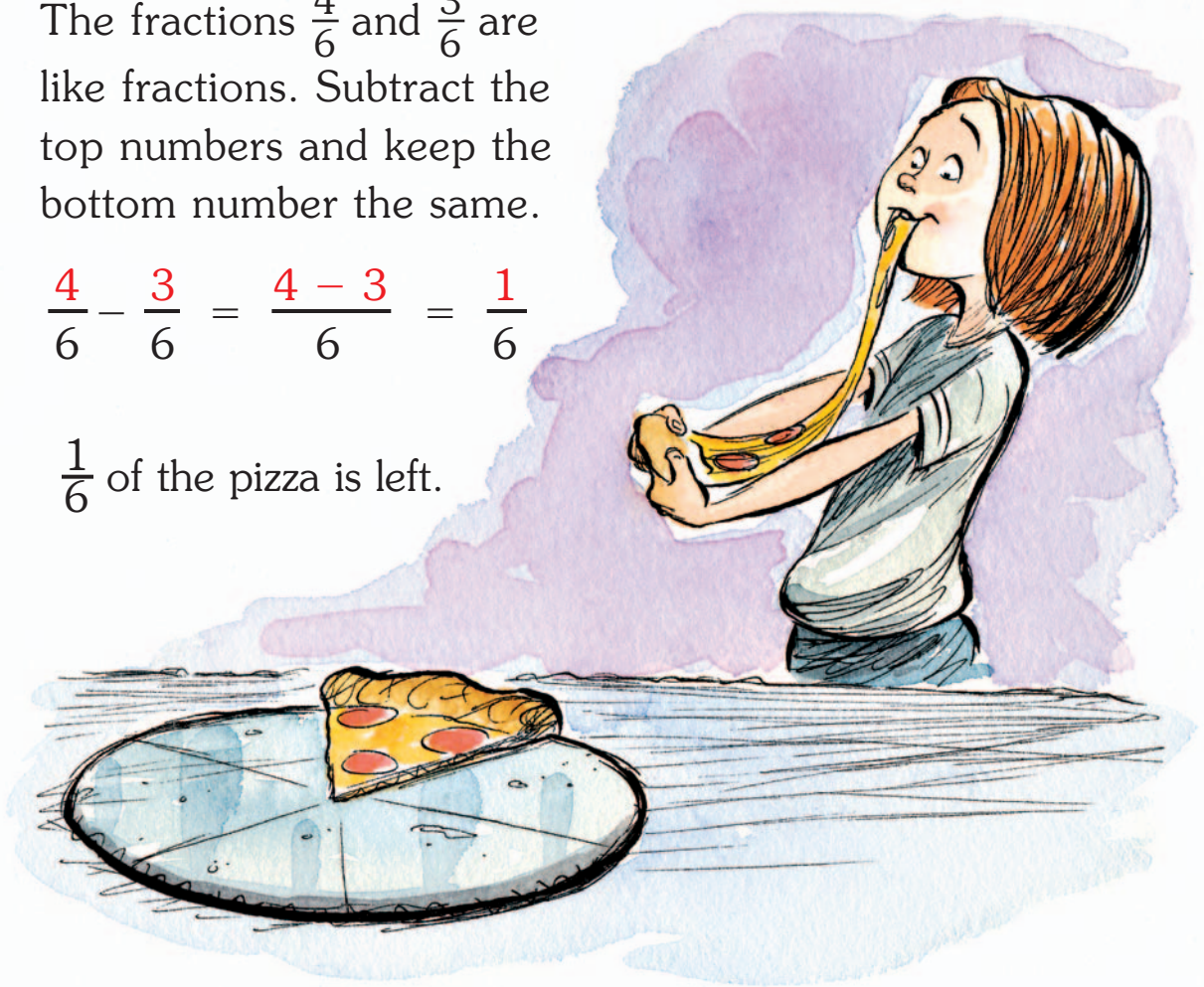
Fractions

A pizza is cut into 6 slices. There were 4 slices, or $\frac{4}{6}$, of the pizza left. Then Gary ate 3 more slices, or $\frac{3}{6}$, of the pizza. What fraction of the pizza is left?

The fractions $\frac{4}{6}$ and $\frac{3}{6}$ are like fractions. Subtract the top numbers and keep the bottom number the same.

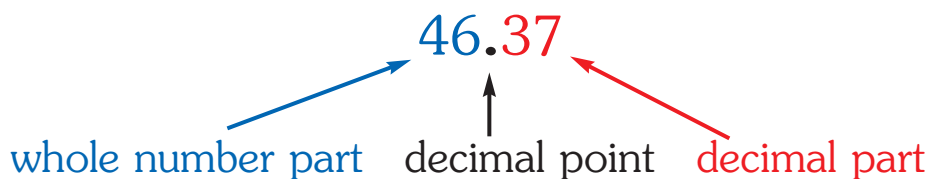
$$\frac{4}{6} - \frac{3}{6} = \frac{4 - 3}{6} = \frac{1}{6}$$

$\frac{1}{6}$ of the pizza is left.



What Is a

A decimal number is a number that is written using a decimal point. Decimals have a whole number part, a decimal point, and a decimal part.



Decimals use place value, just like whole numbers.



In the number 46.37, the digit **3** has a value of 3 tenths, or 0.3.

The digit **7** has a value of 7 hundredths, or 0.07.

Decimal?

You can read any decimal number in four parts.

46.37

SAY:

1. Read the whole number part. forty-six
2. Read the decimal point as the word *and*. and
3. Read the decimal part as if it were a whole number. thirty-seven
4. Say the place value of the last digit. hundredths

forty-six and thirty-seven hundredths



Decimals and

A decimal is just another way to write a fraction.

The decimal 0.7 is seven tenths.

The fraction $\frac{7}{10}$ is seven tenths.

0.7 is the same as $\frac{7}{10}$.

They are even said the same way, *seven tenths*.

The decimal 1.29 is 1 and 29 hundredths.

The mixed number $1\frac{29}{100}$ is 1 and 29 hundredths.

1.29 is the same as $1\frac{29}{100}$.

They are both said the same way, *one and twenty-nine hundredths*.

Fractions

Write $\frac{9}{10}$ as a decimal.

1. Write the decimal point. There is no whole number part. Write a zero in the whole number part as a place holder.
2. Look at the denominator. It is 10, so the last number must be in the tenths place.
3. Write the numerator so that it ends in the tenths place.

0.

0.
↑

0.9

Write 8.3 as a mixed number.

1. Write the whole number part.
2. Write the decimal part as the numerator.
3. Write the place value of the last digit as the denominator.
The place value is tenths, so write 10.

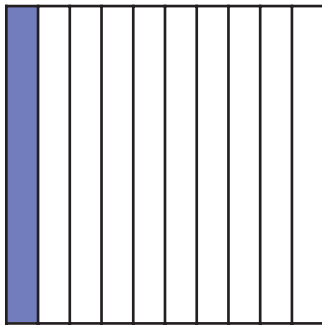
8

8 $\frac{3}{10}$

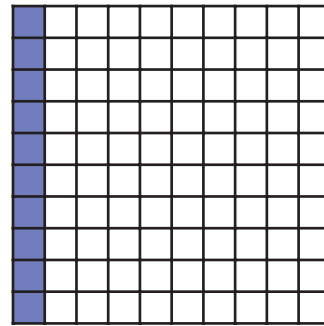
8 $\frac{3}{10}$

Equivalent

Some decimals, such as 0.1 and 0.10, have the same value.



0.1 (one tenth)
of this square is blue



0.10 (ten hundredths)
of this square is blue

These decimals, 0.1 and 0.10, are equal.
Decimals that are equal are called equivalent.

Look at the equivalent decimals 0.1 and 0.10.

0.1

0.10

The only difference is the zero on the right. You can add zeros to the right of a decimal number without changing its value.

Decimals

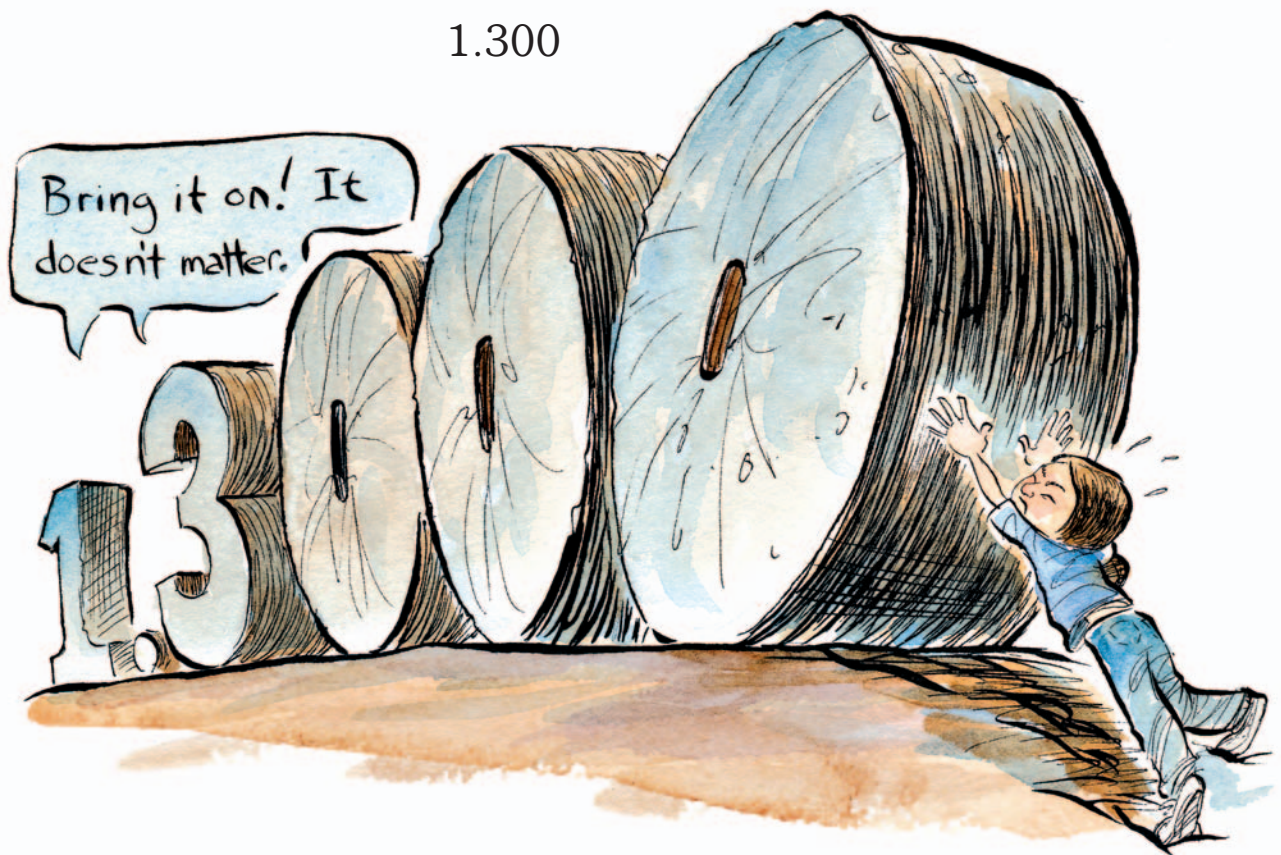
It does not matter how many zeros
you add to the end of a decimal.
The value does not change.

You can only add
zeros on the right of
decimal numbers,
NOT whole numbers.
5 does NOT equal 50!

$1.3 =$

$1.30 =$

1.300



Comparing

An easy way to compare decimal numbers is to line up the numbers by their place values.

Compare 3.42 and 3.47.

3.42	Write the numbers in a column.
3.47	Line up the decimal points.
↑	

Start at the left and compare numbers with the same place values.

3.42	The numbers in the ones place
3.47	are the same.

3.42	The numbers in the tenths place
3.47	are the same.

3.42	The numbers in the hundredths place
3.47	are different.
	2 hundredths < 7 hundredths

$$3.42 < 3.47$$

Decimals

Let's look at another one.

Compare 1.3 and 1.13

1.3 Write the numbers in a column,
1.13 lining up the decimal points.

1.30 You can add a zero to the end of a
1.13 decimal without changing the value
(see pages 34 and 35).

Start at the left and compare numbers with the same place values.

1.30 The numbers in the ones place
1.13 are the same.

1.30 The numbers in the tenths place
1.13 are different.

3 tenths > 1 tenth

$$1.3 > 1.13$$

Rounding

You round decimal numbers just as you round whole numbers.

The bee hummingbird is the smallest bird in the world. It weighs 0.056 ounces. Round 0.056 to the nearest tenth.

Find the tenths place.

0.056

Look at the digit one place to its right.

0.056

If the digit is 5 or greater, round up.



If the digit is less than 5, round down.

The digit is 5, so round the zero in the tenths place up to 1.

0.056 to the nearest tenth is 0.1

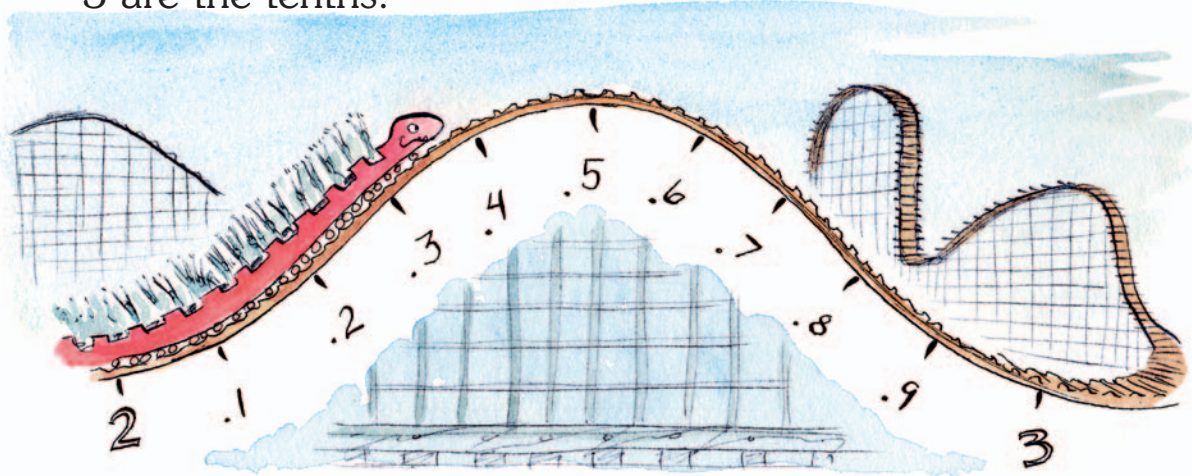


Decimals

Rounding is like riding a roller coaster. Let's look at an example.

Round the decimal 2.3 to the nearest whole number.

The whole numbers 2 and 3 are at the bottom of either side of the hill. Evenly spaced between 2 and 3 are the tenths.



If the roller coaster stops before the top of the hill, 2.5, it will roll back. If the roller coaster stops at 2.5 or more, it will roll forward.

The coaster stopped at 2.3! It will roll back down to the whole number 2.

2.3 to the nearest whole number is 2.

Estimating

You can use rounding to estimate the answer to an addition or subtraction problem that has decimals.

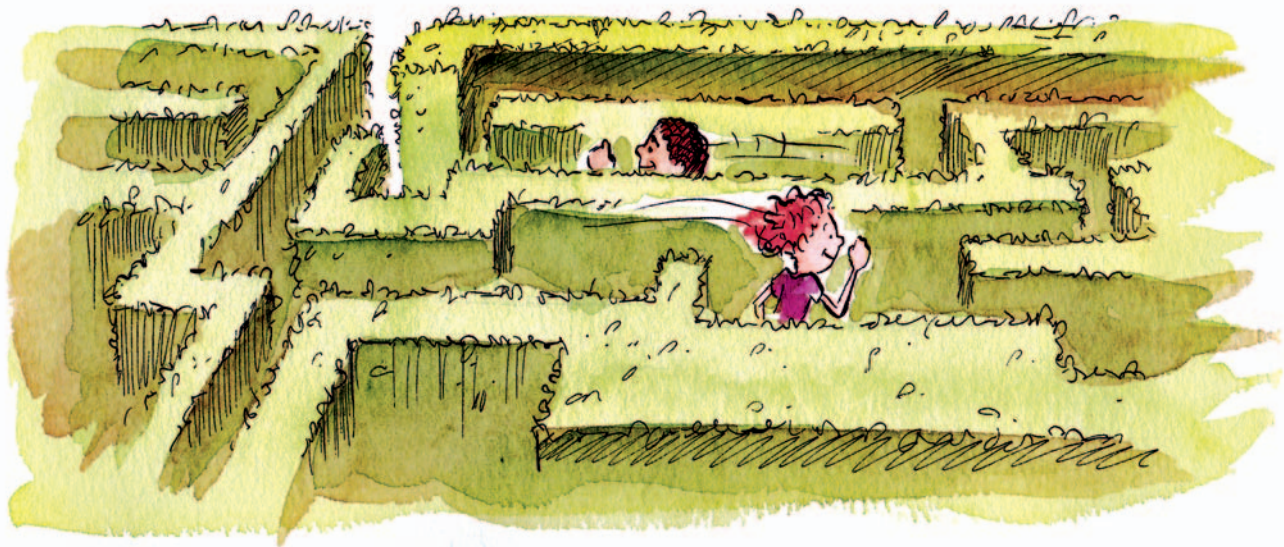
estimate—To find an answer that is not exact; to make a reasonable guess.

Estimate $12.65 + 2.3$.

Round each decimal number to the nearest whole number. 12.65 rounds up to 13
 2.3 rounds down to 2

Add the rounded numbers. $13 + 2 = 15$

$12.65 + 2.3$ is about 15 .



Adding

Decimals are added just like whole numbers. An important part of adding decimals is to line up the place values.

$$3.5 + 2.1$$

Write the problem in a column. Use the decimal point to line up place values. Put the decimal point in the answer.

$$\begin{array}{r} 3.5 \\ + 2.1 \\ \hline . \end{array}$$

Add right to left, one column at a time.

Add tenths.
 $5 + 1 = 6$

$$\begin{array}{r} 3.5 \\ + 2.1 \\ \hline .6 \end{array}$$

Add ones.
 $3 + 2 = 5$

$$\begin{array}{r} 3.5 \\ + 2.1 \\ \hline 5.6 \end{array}$$

$$3.5 + 2.1 = 5.6$$

Decimals

Money values are written as decimals. Add money the same way you would add any other decimal.

Abby spent \$2.37 on an ice cream cone. She also bought a candy bar for \$0.59. How much did Abby spend on both?

Add \$2.37 and \$0.59.

$$\begin{array}{r} 2.37 \\ + 0.59 \\ \hline . \end{array}$$
$$\begin{array}{r} 1 \\ 2.37 \\ + 0.59 \\ \hline .6 \end{array}$$
$$\begin{array}{r} 1 \\ 2.37 \\ + 0.59 \\ \hline .96 \end{array}$$
$$\begin{array}{r} 1 \\ 2.37 \\ + 0.59 \\ \hline 2.96 \end{array}$$

Abby spent \$2.96 on the ice cream cone and candy bar.



Subtracting

Decimals are subtracted like whole numbers.

$$5.8 - 4$$

Write the problem in a column.

4 is a whole number, so the decimal point is after the 4.

Put the decimal point in the answer.

$$\begin{array}{r} 5.8 \\ - 4. \\ \hline . \end{array}$$

Write a zero as a place holder in the tenths place (see pages 34–35).

$$\begin{array}{r} 5.8 \\ - 4.0 \\ \hline . \end{array}$$

Subtract right to left, one column at a time.

$$\begin{array}{r} 5.8 \\ - 4.0 \\ \hline .8 \end{array}$$

Subtract **tenths**.

$$8 - 0 = 8$$

$$\begin{array}{r} 5.8 \\ - 4.0 \\ \hline 1.8 \end{array}$$

Subtract **ones**.

$$5 - 4 = 1$$

$$5.8 - 4 = 1.8$$

Decimals

Karen rode her bicycle 5.65 miles. John rode 3.16 miles. How much farther did Karen ride?



Subtract to find the difference between Karen's distance (5.65 miles) and John's distance (3.16 miles).

$$\begin{array}{r} 5.65 \\ - 3.16 \\ \hline .9 \end{array}$$

Subtract hundredths.
 $15 - 6 = 9$

$$\begin{array}{r} 5.65 \\ - 3.16 \\ \hline .49 \end{array}$$

Subtract tenths.
 $5 - 1 = 4$

$$\begin{array}{r} 5.65 \\ - 3.16 \\ \hline 2.49 \end{array}$$

Subtract ones
 $5 - 3 = 2$

Karen rode her bicycle 2.49 miles farther than John did.

Further Reading

Books

Greenberg, Dan. *Funny & Fabulous Fraction Stories*. New York: Scholastic Press, 1999.

Hein, Marilyn B. *Decimals*. Carthage, IL: Teaching and Learning Company, 1999.

Long, Lynette. *Delightful Decimals and Perfect Percents*. Indianapolis: Wiley & Sons, 2002.

McMillan, Bruce. *Eating Fractions*. New York: Scholastic Press, 1999.

Internet Addresses

Banfill, J. *AAA Math*. “Fractions.” © 2000–2002.

[<http://www.aaamath.com/fra.html>](http://www.aaamath.com/fra.html)

Math.com. “Homework Help Hot Subject: Decimals.” © 2000–2005.

[<http://www.math.com/homeworkhelp/HotSubjects_decimals.html>](http://www.math.com/homeworkhelp/HotSubjects_decimals.html)

Math.com. “Homework Help Hot Subject: Fractions.” © 2000–2005.

[<http://www.math.com/homeworkhelp/HotSubjects_fractions.html>](http://www.math.com/homeworkhelp/HotSubjects_fractions.html)

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