

Ratios

Key Words

denominator
greatest common factor (GCF)
numerator
ratio

A **ratio** is a comparison between two numbers. A ratio can be written in three ways.

3 to 4

3:4

$\frac{3}{4}$

The order of the numbers in a ratio is important. The first number being compared comes first in the ratio. When a ratio is expressed as a fraction, the first number appears as the **numerator** and the second number appears as the **denominator**.

To simplify a ratio, divide both numbers by the **greatest common factor (GCF)**.

Example 1

What is the ratio of squares to circles? Describe the ratio in words.

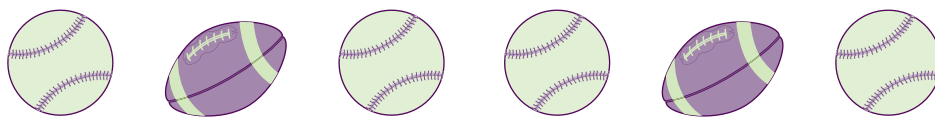


There are 4 squares. There are 3 circles.
Describe the ratio with squares first.

The ratio of squares to circles is 4 to 3.

Example 2

What is the ratio of footballs to all the balls?



There are 2 footballs. There are 6 balls in all.

The ratio of footballs to balls is 2 to 6 or $\frac{2}{6}$.

This can be simplified: $\frac{2 \div 2}{6 \div 2} = \frac{1}{3}$.

For every 1 football, there are 3 balls.

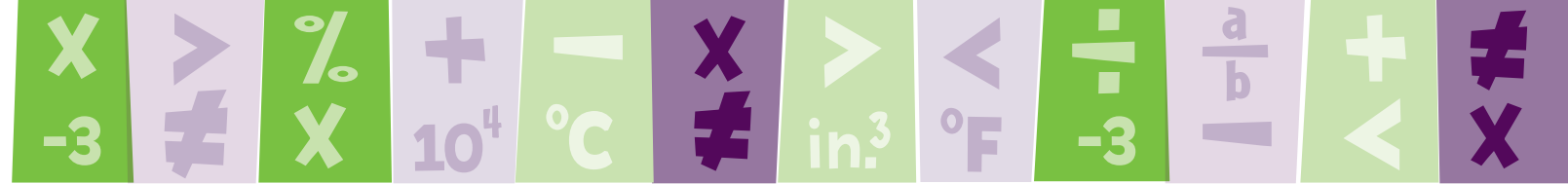
The ratio of footballs to all the balls is 1 to 3.

It can also be written as 1:3 or $\frac{1}{3}$.

LIST

A fruit bowl has 3 apples and 1 banana.
Write three different ratios describing the fruits in the bowl.

Duplicating any part of this book is prohibited by law.



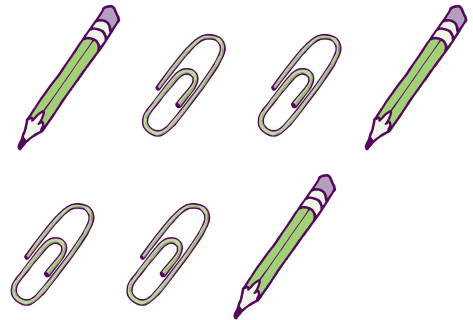
Guided Practice

- 1** Write the ratio of pencils to paper clips as a fraction. Then, describe the ratio using words.

Step 1 Count the number of pencils.
Count the number of paper clips.

There are _____ pencils.

There are _____ paper clips.



Step 2 Write a fraction comparing the pencils to the paper clips.

$$\frac{\text{pencils}}{\text{paper clips}} = \frac{\square}{\square}$$

The ratio of pencils to paper clips is $\frac{\square}{\square}$.

For every _____ pencils, there are _____ paper clips.

REMEMBER

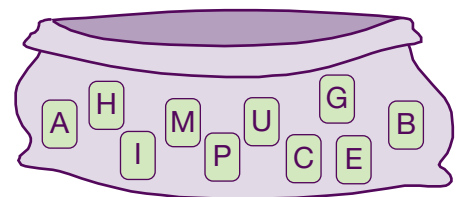
Write the first number being compared in a ratio as the numerator.

- 2** Write the ratio of vowels to all letters in the bag as $a:b$. Then, describe the ratio using words.

Step 1 Count the number of vowels.
Count the number of letters in total.

There are _____ vowels.

There are _____ letters in total.



Step 2 Write a ratio comparing the vowels to the letters in total.
Simplify by using the GCF.

vowels: all letters = _____ : _____

$4 \div \underline{\quad} = \underline{\quad}$ $10 \div \underline{\quad} = \underline{\quad}$

THINK

To find the greatest common factor, find the greatest whole number that divides evenly into 4 and 10.

The ratio of vowels to letters in the bag is _____.

For every _____ vowels, there are _____ letters in the bag.