

Fractions – The Basics

Covered in these slides:

Addition with Unlike Fractions
Finding Common Denominators
Least Common Multiple
Simplifying Fractions
Greatest Common Factor

$$\frac{3}{5}$$

Proper
fraction

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

Mixed
fraction

$$\frac{5}{3}$$

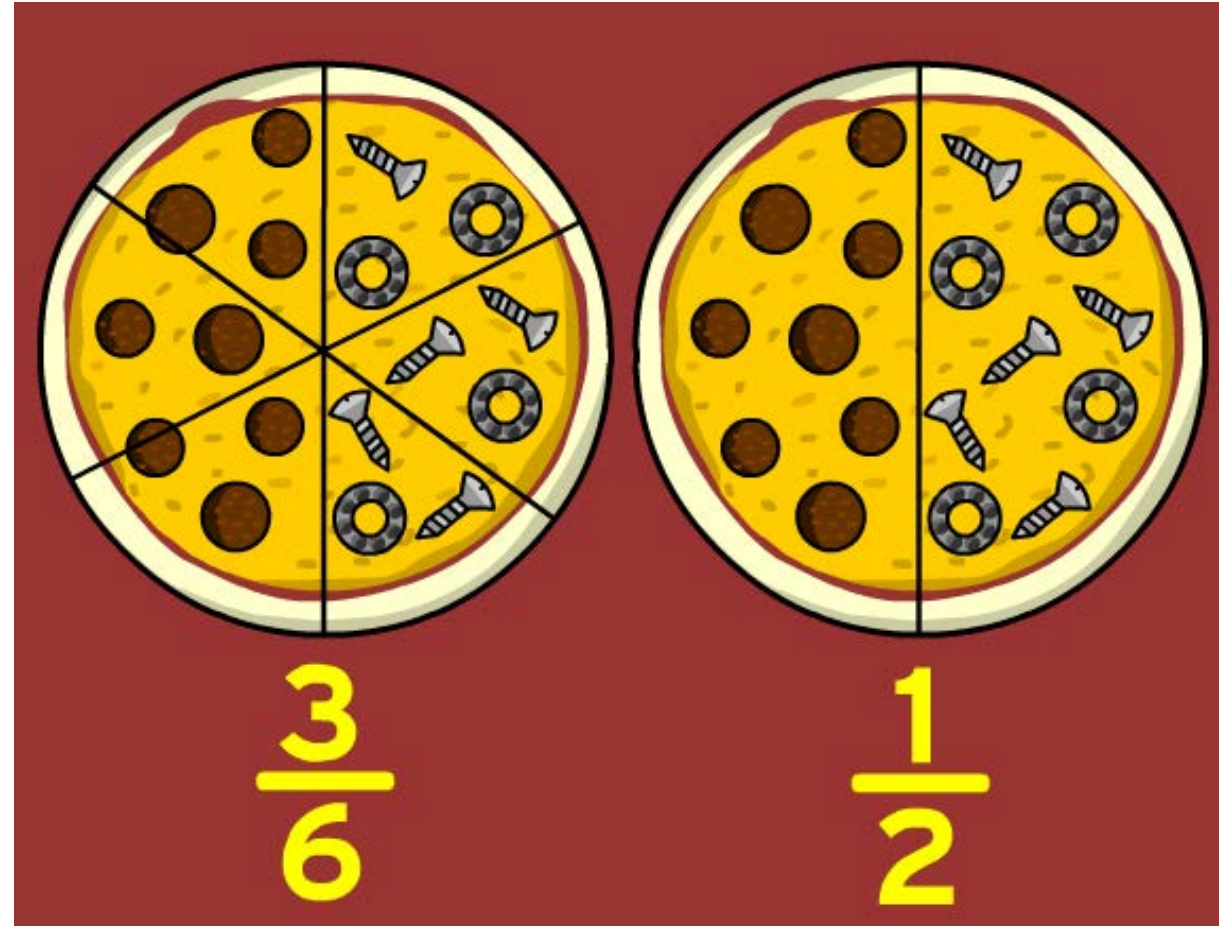
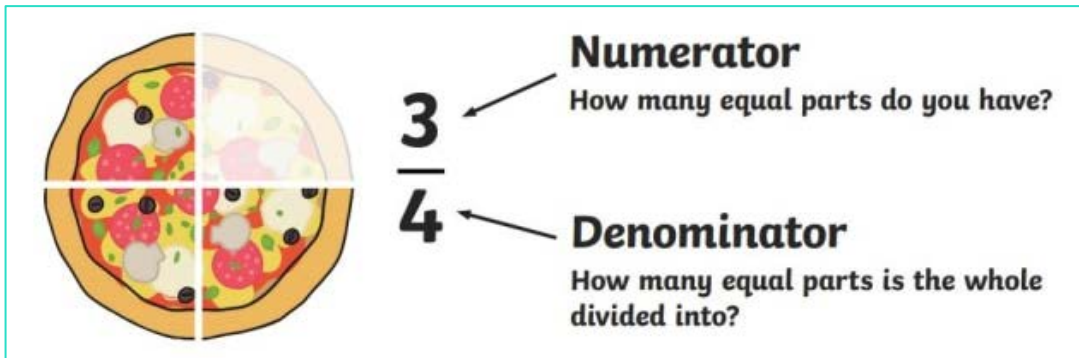
Improper
fraction

Types of fractions

Fractions = $\frac{is}{of}$

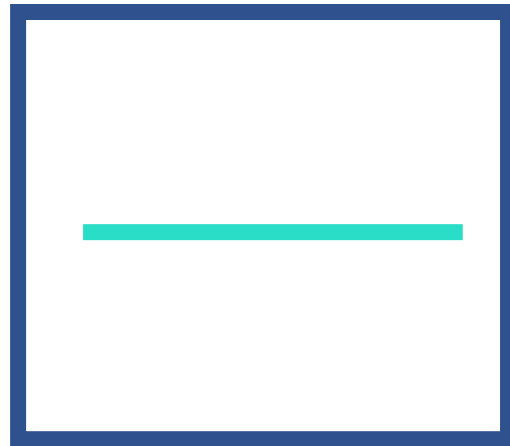
There are 3 pepperoni slices out of 6.

There is 1 pepperoni slice out of 2.

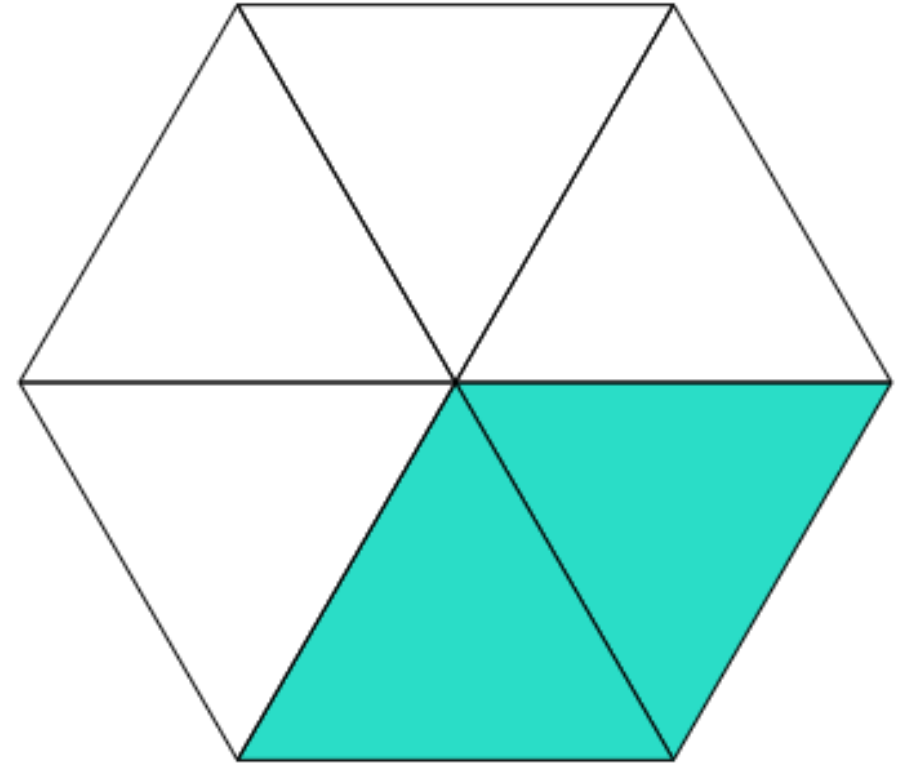


There are _____ green triangles
out of _____.

Fraction representing how
many green triangles out of the
total would be:



A blue square box containing a horizontal cyan line, representing a fraction.



The top number in a fraction is called the **numerator**. The bottom number in a fraction is called the **denominator**.

The numerator shows the **part** while the denominator shows the **whole**.

An improper fraction has a higher **numerator**. A mixed number has a **fraction** with a whole **number**.

Our next task is to
ADD the following unlike fractions

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

Unlike fractions are fractions which have different denominators

What is something you **MUST HAVE** to add fractions?

A COMMON DENOMINATOR

When adding fractions, they need **COMMON DENOMINATORS**

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

One way to find a **COMMON DENOMINATOR** is through finding the **LEAST COMMON MULTIPLE (LCM)**.

3 Multiples:

2 Multiples: 2, 4, 6, 8, 10, 12, 14

When adding fractions, they need **COMMON DENOMINATORS**

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

What's the "Least Common Multiple?"

3 Multiples: 3, 6, 9, 12, 15, 18

2 Multiples: 2, 4, 6, 8, 10, 12, 14

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

What's the "Least Common Multiple?"

3 Multiples: 3, 6, 9, 12, 15, 18

2 Multiples: 2, 4, 6, 8, 10, 12, 14

When adding fractions, they need **COMMON DENOMINATORS**

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

$$\text{LCM} = 6$$

3 goes into 6 two times

2 goes into 6 three times

What this means...

We need to multiple the denominator of $\frac{2}{3}$ by 2 and multiply the denominator of $\frac{1}{2}$ by 3.

$$\frac{2}{3} \times \frac{A}{2}$$

If we multiply the denominator of a fraction by a number, the numerator must also be multiplied by the same number.

A =

$$\frac{1}{2} \times \frac{B}{3}$$

B =

In case you're wondering, it's OKAY to make your multiplication #s look like a fraction.
It'll actually make the future easier

$$\frac{2}{3} \times \frac{2}{2} = \frac{4}{6}$$

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

$$\frac{4}{6} + \frac{3}{6} = \frac{7}{6}$$

This is an **IMPROPER** Fraction and we'll soon learn how to convert this bad boy into a mixed number. For now, we'll leave it like this.

Simplifying Fractions

Fractions are easier to read and understand if they're in their simplest form.

Example: It's a lot easier to work with $\frac{2}{5}$ than $\frac{1930}{4825}$.

The best way to simplify fractions is by finding the
Greatest Common Factor

Simplifying Fractions (GCF)

Greatest Common Factor: *The largest integer that evenly divides both numbers.*

18

Factors:

30

Factors:

Simplifying Fractions (GCF)

Greatest Common Factor: *The highest number that divides exactly into two or more numbers*

18

Factors: 1, 2, 3, 6, 9, 18

30

Factors: 1, 2, 3, 5, 6, 10, 15, 30

Simplifying Fractions (GCF)

Greatest Common Factor: *The highest number that divides exactly into two or more numbers*

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Factors: 1, 2, 3, 6, 9, 18

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Factors: 1, 2, 3, 5, 6, 10, 15, 30

Simplifying Fractions (GCF)

18

Factors: 1, 2, 3, 6, 9, 18

30

Factors: 1, 2, 3, 5, 6, 10, 15, 30

$$18 \div 6 =$$

$$30 \div 6 =$$

$$6 \sqrt{18}$$

$$6 \sqrt{30}$$

Simplify

$$\frac{18}{30} = \frac{3}{5}$$