Writing fractions

Fractions can be written in lots of different ways:

With a slanting line	$3/8$
With a different slanting line	$3\!\!\diagup\!\!8$
How some calculators display fractions	$3\lrcorner 8$

The *general form* of a fraction is:

$$\frac{\text{Numerator}}{\text{Denominator}}$$

Proper fractions

Proper fractions are fractions where the numerator is *smaller than* the denominator.

$$\frac{1}{3}, \frac{5}{27}, \frac{7}{57}, \frac{3523}{764442}$$

Equivalent fractions

The same fraction can be written using different numbers.

$$\frac{1}{2} = \frac{10}{20} = \frac{2}{4}$$

Improper fractions

Improper fractions have numerators that are *larger than or equal to* the denominator.

$$\frac{17}{5}, \frac{4}{2}, \frac{37}{22}, \frac{645}{276}$$

Mixed numbers

Improper fractions can also be written as *mixed* numbers. Mixed numbers *mix* both whole numbers and fractions.

Fractions

$\Rightarrow \frac{7}{5}$ Here's the original improper fraction

$= \frac{5+2}{5}$ Let's split up the numerator

$= \frac{5}{5} + \frac{2}{5}$ Let's split it up into two separate fractions

$= 1 + \frac{2}{5}$ $\frac{5}{5}$ is the same as 1

$= 1\frac{2}{5}$ There is no need to write the plus sign

Reciprocals

To find the reciprocal of a fraction, all you have to do is swap the numerator and the denominator.

Find the reciprocal of $\frac{7}{9}$

Swap the numerator and the denominator

$\frac{9}{7}$ is the reciprocal of $\frac{7}{9}$

When you multiply a fraction by its reciprocal you get 1.

$$\frac{7}{9} \times \frac{9}{7} = \frac{7 \times 9}{9 \times 7} = \frac{63}{63} = 1$$

Simplifying fractions

To simplify a fraction, you need to find the *greatest common factor* (GCF) for the numerator and denominator. For $63\!\!\diagup\!\!98$:

63 has factors 1, 3, 7, 9, 21

98 has factors 1, 2, 7

The largest common factor is 7. The GCF is 7.

Use the GCF to divide both the numerator and denominator of the fraction:

$\Rightarrow \frac{63}{98} \div \frac{7}{7}$

$= \frac{9}{14}$

Talking About Fractions

Fraction in number form	Word form 1	Word form 2	Percentage form	Decimal form
1/2	One half	One on two	50 percent	0.5
1/3	One third	One on three	33 percent	0.33
1/4	One quarter	One on four	25 percent	0.25
1/5	One fifth	One on five	20 percent	0.20
1/6	One sixth	One on six	17 percent	0.17

Fractions as percentages

- Divide 100% by the denominator
- Multiply that by the numerator

$\frac{3}{8}$: $100\% \div 8 \times 3 = 37.5\%$