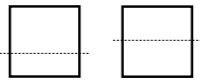
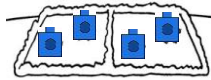


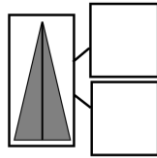


# Fractions: Overview

unequal equal



"There are two equal parts."

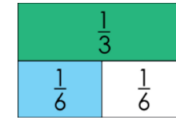


**Numerator**

\_\_\_ equal parts are highlighted

**Denominator**

There are \_\_\_ equal parts altogether



"Two sixths is equal to one third"

**Concepts:** Understanding fractions, Comparing fractions, Equivalences, Calculating with fractions



"Zero, one tenth, two tenths..."

## Reception

- Exploration of counting in equal groups
- Understand halving as splitting into two equal groups

## Year 1

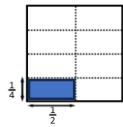
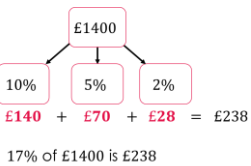
- Recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity
- Recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity

## Year 2

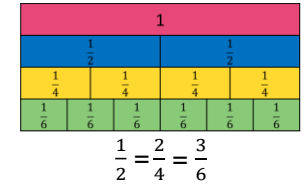
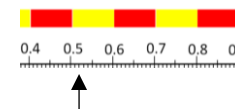
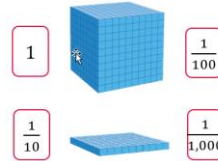
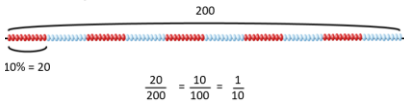
- Recognise, find, name and write fractions  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{2}{4}$  and  $\frac{3}{4}$  of a length, shape, set of objects or quantity
- Write simple fractions, for example  $\frac{1}{2}$  of 6 = 3 and recognise the equivalence of  $\frac{2}{4}$  and  $\frac{2}{4}$ .

## Year 3

- Develop an understanding of tenths; count up and down in tenths
- Recognise, use as numbers, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- Compare and order unit fractions, and fractions with the same denominators
- Recognise and show, using diagrams, equivalent fractions with small denominators
- Add and subtract fractions with the same denominator within one whole
- Solve problems that involve all of the above



What is 10% of 200?



## Year 6

- Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- Identify the value of each digit in numbers given to 3 decimal places
- Compare and order fractions, including fractions > 1
- Recall and use equivalences between simple fractions, decimals and percentages
- Add and subtract fractions with different denominators and mixed numbers
- Multiply simple pairs of proper fractions
- Divide proper fractions by whole numbers
- Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction
- Multiply/divide numbers by powers of 10 giving answers up to 3 decimal places
- Multiply one-digit numbers with up to 2 decimal places by whole numbers
- Use written division methods in cases where the answer has up to 2 decimal places
- Solve problems which require answers to be rounded to specified degrees of accuracy

## Year 5

- Recognise mixed numbers and improper fractions and convert from one form to the other
- Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- Round decimals with 2 decimal places
- Read, write, order, compare and solve problems numbers with up to 3 decimal places
- Develop understanding of percentages (%) as a 'number of parts per 100'
- Compare and order fractions whose denominators are all multiples of the same number
- Read and write decimal numbers as fractions
- Identify, name and write equivalent fractions of a given fraction, including tenths and hundredths
- Add and subtract fractions with the same denominator, and denominators that are multiples of the same number
- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
- Solve problems which require knowing percentage and decimal equivalents of common fractions

## Year 4

- Round decimals with 1 decimal place to the nearest whole number
- Develop understanding of hundredths
- Compare numbers with the same number of decimal places up to 2 decimal places
- Recognise and show, using diagrams, families of common equivalent fractions
- Recognise and write decimal equivalents of any number of tenths or hundredths,  $\frac{1}{4}$ ,  $\frac{1}{2}$  and  $\frac{3}{4}$
- Solve problems involving increasingly harder fractions to calculate quantities
- Add and subtract fractions with the same denominator
- Divide a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths
- Solve simple measure and money problems involving fractions and decimals to 2 decimal places



# Fractions: Concept breakdown

Note: Statutory Curriculum requirements are in **bold**

Reception →

Year 1 →

Year 2 →

Year 3 →

Year 4 →

Year 5 →

Year 6

## Understanding fractions including decimals and percentages

Recognising and representing fractions

Exploration of counting in equal groups;  
Understand halving as splitting into two equal groups  
[Unit 10](#); [Unit 12](#)

**Recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity**  
[Unit 10](#); [Unit 15](#)

**Recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity**  
[Unit 10](#); [Unit 15](#)

**Recognise, find, name and write fractions  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{2}{4}$  and  $\frac{3}{4}$  of a length, shape, set of objects or quantity**  
[Unit 8](#)

**Write simple fractions, for example  $\frac{1}{2}$  of 6 = 3**  
[Unit 8](#)

**Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators**  
[Unit 9](#)

**Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators**  
[Unit 9](#)

*Pupils continue to develop understanding of interpretations of fractions including:*

- Fractions as a part of a whole
- Fractions as a number
- Fractions as a set
- Fractions as a result of division

[Unit 6](#)

**Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example,  $\frac{3}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$ ]**  
[Unit 6](#)

**Use common factors to simplify fractions; use common multiples to express fractions in the same denomination**  
[Unit 4](#)

Tenths, hundredths and thousandths

**Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10**  
[Unit 9](#); Pupils continue to embed during transitions and Maths Meetings

**Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10**  
[Unit 8](#)  
Pupils continue to embed during transitions and Maths Meetings

**Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents**  
Pupils continue to embed during transitions and Maths Meetings  
[Unit 6](#)

*In Year 6 pupils continue to count in steps of tenths, hundredths and thousandths during Maths Meetings*

Representing decimals and percentages

*Pupils learn decimal notation and the language associated with it, including in the context of measurements.*  
[Unit 8](#)

**Read, write, order and compare numbers with up to 3 decimal places**  
[Unit 6](#)  
**Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100'**  
[Unit 8](#)

**Identify the value of each digit in numbers given to 3 decimal places**  
[Unit 1](#)



# Fractions: Concept breakdown

Note: Statutory Curriculum requirements are in **bold**

Reception → Year 1 → Year 2 → Year 3 → Year 4 → Year 5 → Year 6

## Comparing fractions including decimals

Comparing fractions				<p><b>Compare and order unit fractions, and fractions with the same denominators</b></p> <p><a href="#">Unit 9</a></p>	<p><i>Pupils continue to consolidate Y3 content with an emphasis on reasoning. They use pictorial representations to begin exploring different denominators (Y5 objective).</i></p> <p><a href="#">Unit 6</a></p>	<p><b>Compare and order fractions whose denominators are all multiples of the same number</b></p> <p><a href="#">Unit 6</a></p>	<p><b>Compare and order fractions, including fractions &gt;1</b></p> <p><a href="#">Unit 4</a></p>
Comparing Decimals					<p><b>Compare numbers with the same number of decimal places up to 2 decimal places</b></p> <p><a href="#">Unit 8</a></p>	<p><b>Read, write, order and compare numbers with up to 3 decimal places</b></p> <p><a href="#">Unit 6</a></p>	<p><i>Pupils continue to read, write, order and compare numbers with up to 3 decimal places</i></p> <p><a href="#">Unit 1</a></p>

## Equivalent fractions including decimals and percentages

Fraction families			<p><b>Recognise the equivalence of <math>\frac{2}{4}</math> and <math>\frac{2}{4}</math></b></p> <p><a href="#">Unit 8</a></p>	<p><b>Recognise and show, using diagrams, equivalent fractions with small denominators</b></p> <p><a href="#">Unit 9</a></p>	<p><b>Recognise and show, using diagrams, families of common equivalent fractions</b></p> <p><a href="#">Unit 6</a></p>	<p><b>Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</b></p> <p><a href="#">Unit 6</a></p>	
Equivalents between fractions, decimals and percentages					<p><b>Recognise and write decimal equivalents of any number of tenths or hundreds</b></p> <p><a href="#">Unit 8</a></p>	<p><b>Read and write decimal numbers as fractions [for example, <math>0.71 = \frac{71}{100}</math>]</b></p> <p><a href="#">Unit 6</a></p>	<p><b>Associate a fraction with division and calculate decimal fraction equivalents [for example, <math>0.375</math>] for a simple fraction [for example, <math>\frac{3}{8}</math>]</b></p> <p><a href="#">Unit 4</a></p>
					<p><b>Recognise and write decimal equivalents of any number of tenths or hundreds, <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math> and <math>\frac{3}{4}</math></b></p> <p><a href="#">Unit 8</a></p>	<p><b>Write percentages as a fraction with denominator 100, and as a decimal fraction</b></p> <p><a href="#">Unit 6</a></p>	<p><b>Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts</b></p> <p><a href="#">Unit 4</a></p>
						<p><b>Solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> and those fractions with a denominator of a multiple of 10 or 25</b></p> <p><a href="#">Unit 8</a></p>	



# Fractions: Concept breakdown

Note: Statutory Curriculum requirements are in **bold**

Reception → Year 1 → Year 2 → Year 3 → Year 4 → Year 5 → Year 6

## Calculating with fractions including decimals

Add and subtract fractions				<p><b>Add and subtract fractions with the same denominator within one whole [for example <math>\frac{5}{7} + \frac{1}{7} = \frac{6}{7}</math>]</b>  <a href="#">Unit 9</a></p>	<p><b>Add and subtract fractions with the same denominator</b>  <a href="#">Unit 6</a></p>	<p><b>Add and subtract fractions with the same denominator, and denominators that are multiples of the same number</b>  <a href="#">Unit 8</a></p>	<p><b>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</b>  <a href="#">Unit 4</a></p>
Multiply and divide fractions						<p><b>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</b>  <a href="#">Unit 8</a></p>	<p><b>Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, <math>\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}</math>]</b>  <a href="#">Unit 4</a></p> <p><b>Divide proper fractions by whole numbers [for example, <math>\frac{1}{3} \div 2 = \frac{1}{6}</math>]</b>  <a href="#">Unit 4</a></p>
Expressing answers as a decimal					<p><b>Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths</b>  <a href="#">Unit 8</a></p>	<p><b>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</b>  <a href="#">Unit 11</a></p>	<p><b>Multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places</b>  <a href="#">Unit 2</a></p>



# Fractions: Concept breakdown

Note: Statutory Curriculum requirements are in **bold**

Reception → Year 1 → Year 2 → Year 3 → Year 4 → Year 5 → Year 6

## Applying knowledge of fractions including decimals and percentages

Applying knowledge of fractions including decimals and percentages							
Applying knowledge of fractions		<p><i>Pupils apply understanding of halves and quarters whilst exploring half, quarter and three-quarter turns</i>  <a href="#">Y1 Unit 10</a>; <a href="#">Y2 Unit 11</a></p>		<p><b>Solve problems that involve all of the above</b>  <a href="#">Unit 6</a></p>	<p><b>Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number</b>  <a href="#">Unit 6</a></p>		<p><i>Pupils apply understanding of fractions to express proportion and solve problems involving a scale factor of number or shape</i>  <a href="#">Unit 10</a></p>
Applying knowledge of decimals and percentages					<p>Solve simple measure and money problems involving fractions and decimals to 2 decimal places  <a href="#">Unit 10</a></p>	<p><b>Solve problems involving number up to 3 decimal places</b>  <a href="#">Unit 11</a></p> <p>Solve problems which require knowing percentage and decimal equivalents of <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{1}{5}</math>, <math>\frac{2}{5}</math>, <math>\frac{4}{5}</math> and those fractions with a denominator of a multiple of 10 or 25  <a href="#">Unit 8</a></p>	<p><b>Multiply one-digit numbers with up to 2 decimal places by whole numbers</b>  <a href="#">Unit 4</a></p>
Rounding Decimals					<p><b>Round decimals with 1 decimal place to the nearest whole number</b>  <a href="#">Unit 8</a></p>	<p><b>Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place</b>  <a href="#">Unit 6</a></p>	<p><b>Solve problems which require answers to be rounded to specified degrees of accuracy</b>  <a href="#">Unit 1</a></p>