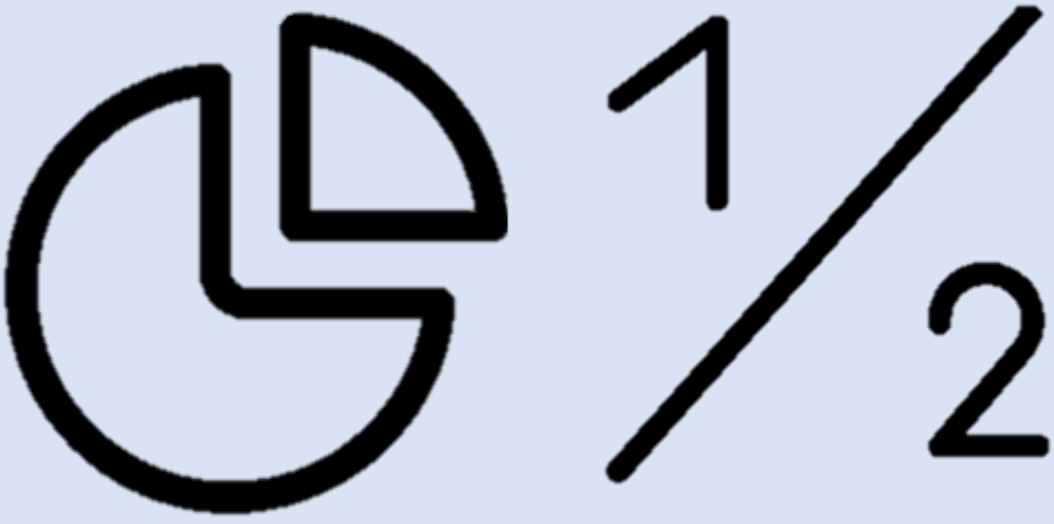
Portswood Primary School

Progression of sKills



Fractions

Portswood Primary School

At Portswood Primary Academy Trust, we strive for achievement for all our pupils and believe that all pupils should develop a passion for maths.

We want pupils to be ***confident*** in their use of maths; being able to ***identify*** where the ***maths*** is ***in*** the ***problems*** they are ***faced*** with, to prepare them for its use in the ***real world,*** and to ensure that they are ready for the ***next stage*** of their ***mathematics education.***

Our ***aims*** for maths, ***reflect*** the aims of the ***National Curriculum***. Pupils should:

- Become ***fluent*** in the fundamentals of Maths
- ***Reason mathematically***
- ***Solve problems***

Pupils, at Portswood Primary School, should have a ***secure knowledge of mathematical facts*** and be able to ***recall*** them ***rapidly.*** Ensuring that pupils ***retain*** a ***knowledge*** of number, other mathematical facts or the processes of calculation, will mean they are ***not a barrier to use in wider mathematics.***

Maths teaching should be supported by using a ***concrete, pictorial, abstract*** approach.

This allows for ***secure retention*** of key mathematical concepts. ***Manipulative resources*** should be available until a pupil is confident working with abstract concepts. They may be returned to at any time.

Early years

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By the end of the year I can…

- I can double
- I can share
- I can halve

Recognising fractions

Recognise and sort objects into a half

Recognise and double concrete apparatus

Year 1

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By the end of the year I can…

- I can recognise and name a half of an object
- I can recognise and name a half of a shape
- I can recognise and name a half of a quantity
- I can find a half of an object
- I can find a half of a shape
- I can find a half of a quantity
- I can recognise and name a quarter of an object
- I can recognise and name a quarter of a shape
- I can recognise and name a quarter of a quantity
- I can find a quarter of an object
- I can find a quarter of a shape
- I can find a quarter of a quantity

Recognising fractions

recognise, find and name a half as one of two equal parts of an object, shape or quantity

recognise, find and name a quarter as one of four equal parts of an object, shape or quantity

Year 2

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By the end of the year I can…

- **I can recognise and name 1/3, ¼, 2/4, ¾ of a length, shape, set of objects or quantity**
- I can find and read 1/3, ¼, 2/4, ¾ of a length, shape, set of objects or quantity
- I can write 1/3, ¼, 2/4, ¾ of a length, shape, set of objects or quantity
- **I know that all parts of must be equal parts of the whole.**
- I can write simple fractions; ½ of 6 = 3
- I understand fractions that are the same; 2/4 and ½

Year 2

Portswood Primary School

Counting in fractional steps

Pupils should count in fractions up to 10, starting from any number and using the1/2 and 2/4 equivalence on the number line (Non Statutory Guidance)

Recognising fractions

recognise, find, name and write fractions $^{1}/_{3}$, $^{1}/_{4}$, $^{2}/_{4}$ and $^{3}/_{4}$ of a length, shape, set of objects or quantity

Equivalence (including fractions, decimals and percentages)

write simple fractions (e.g. $^{1}/_{2}$ of 6 = 3) and recognise the equivalence of $^{2}/_{4}$ and $^{1}/_{2}$

Year 3

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By the end of the year I can…

- I know what a tenth is
- I can count up and down and in tenths
- I can recognise, find and write fractions from objects using unit fractions and non-unit fractions
- I can recognise, find and write fractions from numbers using unit fractions and non-unit fractions
- I understand equivalent fractions.
- I know what a denominator is
- I can add fractions with the same denominator
- I can subtract fractions with the same denominator
- I can compare and order fractions with the same denominator
- I can use my knowledge of fractions to solve problems.

<u>Addition and subtraction of fractions</u>

add and subtract fractions with the same denominator within one whole (e.g. $^{5}/_{7} + {}^{1}/_{7} = {}^{6}/_{7}$)

<u>Problem solving</u>

solve problems that involve all of the above

Year 3

Portswood Primary School

Counting in fractional steps

count up and down in tenths

Recognising fractions

recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators

recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10.

recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators

Comparing fractions

compare and order unit fractions, and fractions with the same denominators

Equivalence (including fractions, decimals and percentages)

recognise and show, using diagrams, equivalent fractions with small denominators

Year 4

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By the end of the year I can…

- I can recognise and show equivalent fractions
- I know what a hundredth is
- I can count up and down in hundredths
- I can write the decimals for tenths and hundredths
- I can solve problems using fractions
- I can add fractions with the same denominator
- I can subtract fractions with the same denominator
- I recognise decimal equivalents to ¼, 1/2 ,3/4
- I can write decimal equivalents to ¼,1/2,3/4
- I know the effect of a dividing a one or two – digit number by 10 or 100 and I know the answer as ones, tenths and hundredths.
- I can round decimals with one decimal place to the nearest whole number
- I can compare numbers with the same number of decimals places, up to two decimal places
- I can solve problems involving fractions and decimals, up to two decimal places

Year 4

Portswood Primary School

Counting in fractional steps

count up and down in hundredths

Recognising fractions

recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten

Comparing decimals

compare numbers with the same number of decimal places

Rounding including decimals

compare decimals with one decimal place to the nearest whole number

Equivalence (including fractions, decimals and percentages)

recognise and show, using diagrams, families of common equivalent fractions

recognise and write decimal equivalents of any number of tenths or hundredths

recognise and write decimal equivalents to $^1/_4$; $^1/_2$; $^3/_4$

Year 4

Portswood Primary School

Addition and subtraction of fractions

add and subtract fractions with the same denominator

Multiplication and division of decimals

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.

Problem solving

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

solve simple measure and money problems involving fractions and decimals to two decimal places

Year 5

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By the end of the year I can…

- I can compare and order fractions
- I can find, name and write equivalent fractions
- I know what a mixed number is
- I know what an improper fraction is
- I can convert mixed numbers and improper fractions
- I can add fractions with the same denominator and denominators that are multiples of the same number
- I can subtract fraction with same denominator and denominators that are multiples of the same number
- I can multiply proper fractions and mixed numbers by whole numbers
- I can read and write decimal numbers as fractions
- I can recognise and use thousandths
- I can relate thousandths to tenths, hundredths and decimal equivalents
- I can round decimals with two decimal places to the nearest whole number
- I can read and write numbers with up to three decimal places
- I can order and compare number with up to decimals up to three decimal places
- I can solve problems with numbers up to three decimal places
- I know and understand the % symbol
- I can write % as a fraction and a decimal
- I can solve problems using % and decimal equivalents of ½, 1/4, 1/5, 2/5, 4/5
- I can solve problems with fractions with a denominator of a multiple of 10 or 25.

Year 5

Portswood Primary School

Recognising fractions

recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents

Comparing fractions

compare and order fractions whose denominators are all multiples of the same number

Comparing decimals

read, write, order and compare numbers with up to three decimal places

Rounding including decimals

round decimals with two decimal places to the nearest whole number and to one decimal place

Problem solving

solve problems involving numbers up to three decimal places

solve problems which require knowing percentage and decimal equivalents of $^{1}/_{2}$, $^{1}/_{4}$, $^{1}/_{5}$, $^{2}/_{5}$, $^{4}/_{5}$ and those with a denominator of a multiple of 10 or 25.

Year 5

Portswood Primary School

Equivalence (including fractions, decimals and percentages)

identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths

read and write decimal numbers as fractions (e.g. 0.71 = $^{71}/_{100}$)

recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents

recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator 100 as a decimal fraction

Addition and subtraction of fractions

add and subtract fractions with the same denominator and multiples of the same number

recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. $^{2}/_{5} + {}^{4}/_{5} = {}^{6}/_{5} = 1^{1}/_{5}$)

Year 5

Portswood Primary School

Multiplication and division of fractions

Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams

identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places

use written division methods in cases where the answer has up to two decimal places

multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places

Year 6

Portswood Primary School

By the end of the year I can…

- I can use common factors to simplify fractions
- I can use common multiples to express fractions in the same denomination
- I can compare and order fractions, including >1
- **I can add fractions with different denominators and mixed numbers**
- **I can subtract fractions with different denominators and mixed numbers**
- **I can multiply simple pairs of proper fractions**
- **I can divide proper fractions by whole numbers**
- **I can calculate decimal fraction equivalents for a simple fractions (0.375 = 3/8)**
- I can identify the value of each digit in numbers to three decimal places
- **I can multiply numbers by 10, 100, 1000 giving answers up to three decimal places.**
- **I can divide numbers by 10, 100, 1000 giving answers up to three decimal places.**
- **I can multiply one – digit numbers with up to two decimal places by whole numbers**
- **I can use written division methods where the answer has up to two decimals place.**
- I can solve problems using accurate rounding
- **I can recognise the relationship between fractions, decimals and %**
- **I can use equivalences between simple fractions, decimals and %**

Year 6

Portswood Primary School

Comparing fractions

compare and order fractions, including fractions less than 1.

Comparing decimals

identify the value of each digit in umbers given to three decimal places

Rounding including decimals

solve problems which require answers to be rounded to specified degrees of accuracy

Equivalence (including fractions, decimals and percentages)

use common factors to simplify fractions; use common multiples to express fractions in the same denomination

associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^{3}/_{8}$)

recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Year 6

Portswood Primary School

Addition and subtraction of fractions

add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

Multiplication and division of fractions

multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. $^1/_4 \times {}^1/_2 = {}^1/_8$)

multiply one-digit numbers with up to two decimal places by whole numbers

divide proper fractions by whole numbers (e.g. $^1/_3 \div 2 = {}^1/_6$)

Multiplication and division of decimals

multiply one-digit numbers with up to two decimal places by whole numbers

associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. $^3/_8$)

Vocabulary

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numerator

a numerator represents the number of parts out of the whole

denominator

a denominator represents the number of equal parts an item is divided into

$$\frac{3}{5}$$ ← numerator ← denominator

proper fraction

a fraction that is less than one, with the numerator less than the denominator

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

improper fraction

a fraction in which the numerator is greater than the denominator

$$\frac{13}{5}$$

factor

a factor of a number is a number that can be divided into the original number evenly.

Multiple

multiples are what we get after multiplying the number by an integer (not a faction).

Equivalent factor

equivalent fractions are the fractions that have different numerators and denominators but are equal to the same value

Vocabulary

Portswood Primary School

mixed number

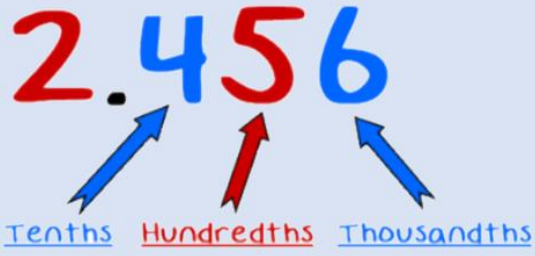
a mixed number is a number consisting of a whole number and a proper fraction

whole number

a whole number can be written as a fraction by writing the whole number in the numerator and 1 in the denominator

decimal place (tenths, hundredths, thousandths)

we use decimals to write fractions as a single number. The decimal point shows where the fractional part of a number begins. To the left of the decimal point, we have the whole number part, and to the right we have the fractional part, made up of tenths, hundredths, thousandths.



simplest form

the fraction is in its simplest form when the numerator and denominator of the fraction does not have any common factor

simplify

simplifying a fraction means finding an equivalent fraction where the numbers are reduced as much as possible