

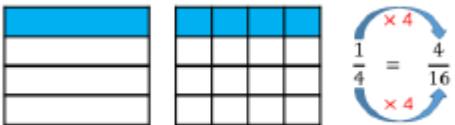
Godmanchester Community Academy Maths Progression

Year 5		
Place Value	4 operations (+, -, x, ÷)	Number: Vocabulary
<p>Count forwards or backwards in powers of 10 for any number up to 1,000,000</p> <p>Count forwards and backwards with positive and negative whole numbers, including through zero</p> <p>Read, write, order and compare numbers to at least 1.000,000 and determine the value of each digit e.g 7,564,839 The value of the 7 is seven million The value of the 5 is five hundred thousand The value of the 6 is sixty thousand etc</p> <p>Read Roman numerals to 1000 (M) and recognise years written in Roman numerals</p> <p>Round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000</p>	<p>Using column written method (more detail on methods in calculation policy): add and subtract numbers with more than four-digits e.g. $34,925 + 27,723 =$, $73,862 - 10,074 =$, $4,487 - 134$</p> <p>identify multiples and factors (including finding all factor pairs), common factors e.g. multiples of 6 are 6, 12, 18 factor pairs of 6 are 2 and 3</p> <p>Establish if any number up to 100 is a prime number</p> <p>Recall prime numbers up to 19 e.g 1,3,5,7,11,13,17,19</p> <p>Multiply numbers up to four-digit by a one-digit or two-digit number (More details on calculation policy) e.g $3825 \times 7 =$, $3792 \times 28 =$</p> <p>Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders according to the context (More details on calculation policy)</p> <p>Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 e.g. $346 \div 100 = 3.46$</p>	<p>Multiple: 25 is a multiple of 5 Factor: factors of a number can multiply to give that number. 5 is a factor of 25 $5 \times 3 = 15$ (factor x factor = product) Factor Pairs: 2 numbers that multiplied to give that number. Factors pairs of 12 are: 1×12, 2×6, 3×4</p> <p>Know, understand and use the following words: Prime Numbers: Prime numbers are only divisible by 1 and themselves Prime Factors: Factors that are also prime numbers. E.g. prime factors of 15 are 3 and 5 because $3 \times 5 = 15$ and 3 and 5 are both prime numbers Common Factors: Factors that are the same for 2 numbers. Common factors of 12 and 15 are 1 and 3 as both 12 and 15 are multiples of 1 and 3 Composite Numbers: Whole numbers that are not prime numbers Square Numbers: A number x by itself twice. E.g. 4×4 squared is 16. This is recorded as $4^2 = 16$ Cube Numbers: A number x by itself three times. E.g. $4 \times 4 \times 4$ 4 cubed is 16. This is recorded as $4^3 = 16$</p>

Fractions: Types and Converting

Identify, name and write equivalent fractions, including tenths and hundredths

e.g.



Recognise mixed numbers and improper fractions

Mixed numbers contain a whole number and a fraction e.g. $3\frac{3}{5}$

Improper fraction are a fraction where the numerator (top number) is greater than the denominator (bottom number) $\frac{8}{5}$

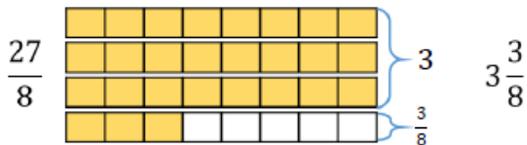
Convert mixed numbers to improper fractions.

e.g. $2\frac{3}{5} = \frac{13}{5}$



Convert improper fractions to mixed numbers.

e.g. $\frac{27}{8} = 3\frac{3}{8}$

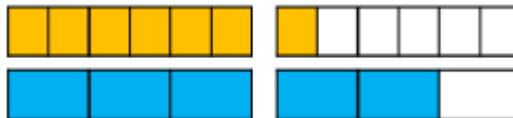


Fractions: Compare and Order

Compare and order fractions whose denominators are all multiples of the same numbers

e.g. compare $\frac{7}{6}$ (yellow image) and $\frac{5}{3}$ (blue image)

$\frac{7}{6} < \frac{5}{3}$



This could also be recorded as a mixed number

Compare $1\frac{1}{6}$ (yellow image) and $1\frac{2}{3}$ (blue image)

$1\frac{1}{6} < 1\frac{2}{3}$

Fractions: Addition and Subtraction

Add and subtract fractions with the same denominator and denominators that are multiples of the same number

Addition with same denominator

e.g. $\frac{3}{5} + \frac{4}{5} = \frac{7}{5} = 1\frac{2}{5}$



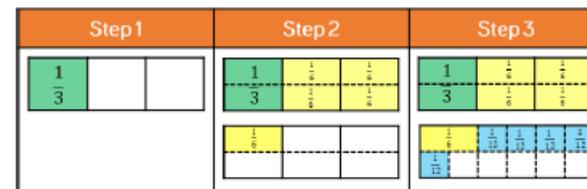
Subtraction with same denominator

e.g. $\frac{7}{8} - \frac{3}{8} = \frac{4}{8}$



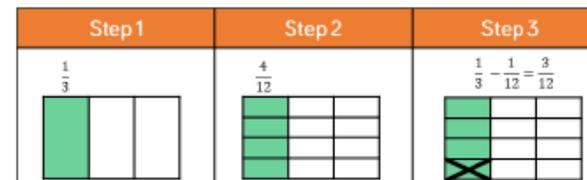
Addition with denominators that are multiples of the same number.

e.g. $\frac{1}{3} + \frac{5}{6} + \frac{5}{12} = 1\frac{7}{12}$



Subtraction with denominators that are multiples of the same number.

e.g. $\frac{1}{3} - \frac{1}{12} + \frac{9}{12} =$

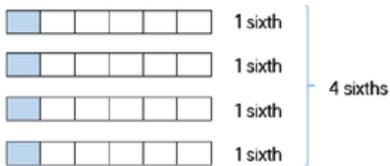


Fractions: Multiplying and Fractions of Amounts

Multiply proper fractions and mixed numbers by whole numbers (supported with diagrams and resources)

A proper fraction multiplied by a whole number e.g.

$$\frac{1}{6} \times 4 = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{4}{6} = \frac{2}{3}$$

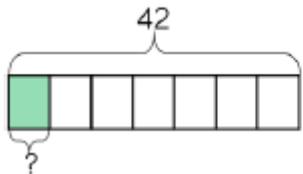


A mixed number multiplied by whole number e.g.

$$2\frac{2}{3} \times 4 = 2\frac{2}{3} + 2\frac{2}{3} + 2\frac{2}{3} + 2\frac{2}{3} = 8\frac{8}{3} = 10\frac{2}{3}$$

Find fractions of amounts.

e.g. $\frac{1}{7}$ of 42



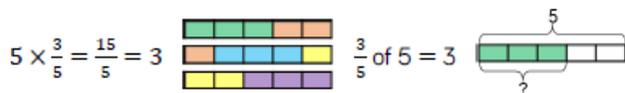
$$42 \div 7 = 6$$

$$\frac{1}{7} \text{ of } 42 \text{ is } 6$$

Multiply a fraction.

Multiplying a fraction and finding a fraction of an amount result in the same answer.

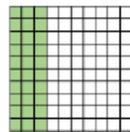
e.g.



Decimals and Percentages

Read and write decimals as fractions

e.g. $0.71 = 71/100$



$$0.3 = \frac{3}{10} = \frac{30}{100}$$

Round decimals with 2 decimal places to the nearest whole number

e.g. 3.45 rounded to the nearest whole number is 3

Know the place value of each digit for numbers with up to 3 decimal places

e.g. 34.751 The value of the 7 is seven tenths $\frac{7}{10}$

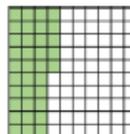
The value of the 5 is five hundredths $\frac{5}{100}$

The value of the 1 is 1 thousandths $\frac{1}{1000}$

Read, write, order and compare numbers with up to 3 decimal places

Recognise the % symbol and understand that per cent relates to 'number of parts per hundred'

e.g. There are 35 parts per hundred shaded. This is 35%



Write percentages as a fraction with a denominator of 100 and write percentages as a decimal

e.g.

Pictorial	Percentage	Fraction	Decimal
	41 parts per hundred	41 out of 100	41 hundredths
	41%	$\frac{41}{100}$	0.41

Measurement

Convert between different units of measure

e.g.

1 kilometre = 1000 metres

1 metres = 100 centimetres

1 centimetre = 10 millimetres

1 kilogram = 1000 grams

1 litre = 1000 millilitres

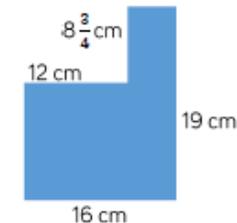
1 hour = 60 minutes

1 minute = 60 seconds

Measure and calculate the perimeter of a composite rectilinear figure in centimetres(cm) and metres(m)

e.g. The perimeter of this composite rectilinear shape

is $12\text{cm} + 16\text{cm} + 19\text{cm} + 8\frac{3}{4}\text{cm} = 55\frac{3}{4}\text{cm}$

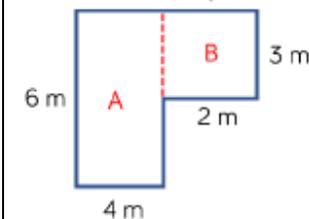


Calculate the area of a rectangle and compound shape using units of measure (m, cm, mm etc).

e.g. The area of this compound shape is

$A (6\text{m} \times 4\text{m} = 24\text{m}^2) + B (2\text{m} \times 3\text{m} = 6\text{m}^2)$

$24\text{m}^2 + 6\text{m}^2 = 30\text{m}^2$



Estimate volume by using cubes to build cuboids

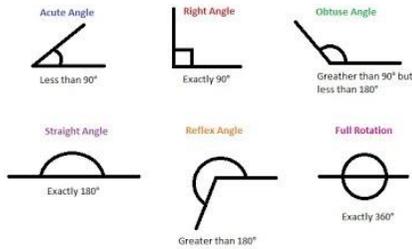
e.g.



Angles

Know angles are measured in degrees

Compare acute, obtuse and reflex angles and identify angles at a point, on a straight line, half a turn (180°) and one whole turn (360°) as well as other multiples of 90° e.g.



Draw given angles and measure them in degrees ($^\circ$)

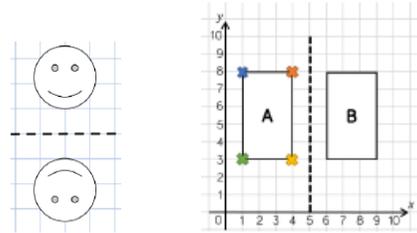
Geometry

Distinguish between regular and irregular polygons
Regular polygons have sides that are all the same length and irregular polygons have sides that are different lengths.

Use the properties of rectangles to deduce related facts and find missing lengths and angles

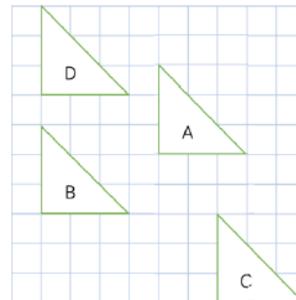
Identify 3d shapes including cubes and other cuboids, from 2d representations

Identify, describe and show the position of a shape following a reflection and reflection with coordinates e.g.



Identify, describe and show the position of a shape following a translation

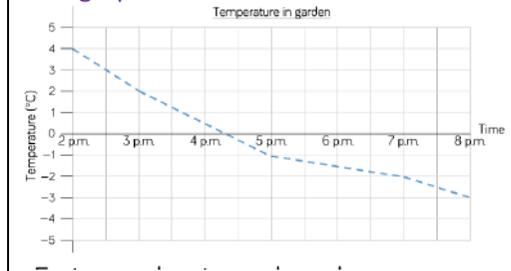
e.g. Shape A has been translated right 4 and down 2 to shape B



Statistics

Complete, read and interpret information in line graphs and tables, including timetables

Line graphs



Tables

Planet	Time for Revolution	Diameter (km)	Time for Rotation
Mercury	88 days	4,878	59 days
Venus	225 days	12,104	243 days
Earth	365 days	12,756	24 hours
Mars	687 days	6,794	25 hours
Jupiter	12 years	142,984	10 hours
Saturn	29 years	120,536	11 hours
Uranus	84 years	51,118	17 hours
Neptune	165 years	49,500	17 hours

Two-way tables

	Male	Female	Total
Constable	55	24	79
Sergeant	8	5	13
Inspector	2	4	6
Chief Inspector	1	1	2
Total	66	34	100

Timetables

Bus Timetable					
Halifax	06:05	06:35	07:10	07:43	08:15
Shelf	06:15	06:45		07:59	08:31
Shelf Village	06:16	06:46	07:23	08:00	08:32
Woodside	06:21	06:50	07:28		
Odsal	06:26	06:55	07:33	08:15	08:45
Bradford	06:40	07:10	07:48	08:30	09:00