



# Year 6

## Maths Overview



Adapted following school closure as a result of Covid-19

Red text represents objectives not covered in previous year group

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Mental Objectives
Autumn	Place Value		Baseline assessment	Number – all four operations			Number - fractions			Assessment	Fractions	Measurement – converting units	Geometry: Properties of shapes, circles, angles		<ul style="list-style-type: none"> <li>Fractions – multiplying</li> <li>Decimals – place value</li> <li>Decimals – fraction to decimal</li> <li>% to decimal/fraction</li> <li>Convert units of measure</li> <li>Shape - quadrilaterals</li> </ul>	
	Number - Fractions (Year 5)					Measures – convert units (Year 5)					Shape – properties (Year 5)					
Spring	Measurement – area and volume		Assessment	position and direction	Statistics	Number – Decimals and percentages			Assessment	Number - Algebra	Number - Ratio				<ul style="list-style-type: none"> <li>Volume</li> <li>Reflection/translation</li> <li>Area and perimeter</li> <li>Revise place value</li> <li>Revise 4 rules – fluent in 5</li> <li>Problem of the Day – White Rose</li> </ul>	
	Number – Decimals (Year 5)															
Summer	Reasoning – all areas		SATS WEEK	Assessment and Consolidation: Moderation tasks		POST SATs: Problem Solving projects Mystery maths/Escape Room								<ul style="list-style-type: none"> <li>Arithmetic – fluent in 5</li> <li>BODMAS</li> <li>Algebra</li> <li>Fractions – calculating</li> <li>Properties of shapes</li> <li>Measures - conversions</li> <li>Problem of the Day – White Rose</li> </ul>		

## Autumn Term

### Consolidation Unit: (Year 5 objectives)

#### Number – Fractions

- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
- Read and write decimal numbers as fractions [ for example  $0.71 = \frac{71}{100}$  ]
- Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

#### Measures – converting units

- Convert between different units of metric measure [for example, km and m; cm and m; cm and mm; g and kg; l and ml]
- Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.
- Solve problems involving converting between units of time.

#### Geometry – properties of shape

- Identify 3D shapes, including cubes and other cuboids, from 2D representations.
- Use the properties of rectangles to deduce related facts and find missing lengths and angles.
- Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

#### Block 1: Place Value

- Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.
- Round any whole number to a required degree of accuracy.
- Use negative numbers in context, and calculate intervals across zero.
- Solve number and practical problems that involve all of the above.

#### Block 2: Number - Addition and subtraction, multiplication and division

- Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why.
- Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication.
- Divide numbers up to 4 digits by a 2-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding as appropriate for the context.
- Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division, interpreting remainders according to the context.
- Perform mental calculations, including with mixed operations and large numbers.
- Identify common factors, common multiples and prime numbers.
- Use their knowledge of the order of operations to carry out calculations involving the four operations.
- Solve problems involving addition, subtraction, multiplication and division.
- Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy.

#### Block 3: Number – Fractions

- Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.
- Compare and order fractions, including fractions  $> 1$
- Generate and describe linear number sequences (with fractions)
- Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions.
- Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example  $14 \times 12 = 18$  ]

- Divide proper fractions by whole numbers [for example  $13 \div 2 = 16$  ]
- Associate a fraction with division and calculate decimal fraction equivalents [ for example, 0.375] for a simple fraction [for example 38]
- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

**Block 4: Measurement – converting units**

- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.
- Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3dp.
- Convert between miles and kilometres.

**Block 5: Geometry – properties of shapes, circles and angles**

- Draw given angles, and measure them in degrees ( $^{\circ}$ )
- Identify: angles at a point and one whole turn (total  $360^{\circ}$ ), angles at a point on a straight line and  $\frac{1}{2}$  a turn (total  $180^{\circ}$ ) other multiples of  $90^{\circ}$
- Draw 2-D shapes using given dimensions and angles.
- Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons.
- Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

## Spring Term

### Consolidation Unit: (Year 5 objectives)

#### Decimals:

- Read, write, order and compare numbers with up to three decimal places.
- Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.
- Round decimals with two decimal places to the nearest whole number and to one decimal place.
- Solve problems involving number up to three decimal places.
- 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, and as a decimal
- Calculate with decimal numbers
- Solve problems involving number up to three decimal places.
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000

#### Block 1: Measurement – Time, area and perimeter

- Estimate volume [for example using  $1\text{cm}^3$  blocks to build cuboids (including cubes)] and capacity [for example, using water]
- Recognise that shapes with the same areas can have different perimeters and vice versa.
- Recognise when it is possible to use formulae for area and volume of shapes.
- Calculate the area of parallelograms and triangles.
- Calculate, estimate and compare volume of cubes and cuboids using standard units, including  $\text{cm}^3$ ,  $\text{m}^3$  and extending to other units ( $\text{mm}^3$ ,  $\text{km}^3$ )

#### Block 2: Geometry – position and direction

- Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.
- Describe positions on the full coordinate grid (all four quadrants).
- Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

#### Block 3: Statistics

- Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
- Interpret and construct pie charts and line graphs and use these to solve problems.
- Calculate the mean as an average.

#### Block 4: Number – Decimals

- Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 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.

#### Block 5: Number - Percentages

- Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison.
- Recall and use equivalences between simple fractions, decimals and percentages including in different contexts

#### Block 6: Number – algebra

- Use simple formulae
- Generate and describe linear number sequences.
- Express missing number problems algebraically.
- Find pairs of numbers that satisfy an equation with two unknowns.
- Enumerate possibilities of combinations of two variables.

**Block 7: Ratio**

- Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.
- Solve problems involving similar shapes where the scale factor is known or can be found.
- Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

## Summer Term

### Block 1: Problem Solving in a range of contexts

- Solve problems involving addition, subtraction, multiplication and division.
- Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy.
- Solve problems which require answers to be rounded to specified degrees of accuracy.
- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.

### Block 2: Assessment – SATs Testing

### Block 3: Assessment and consolidation (Teacher assessment judgements)

### Block 4: Problem Solving

- Solve problems involving addition, subtraction, multiplication and division.
- Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy.
- Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison.
- Recall and use equivalences between simple fractions, decimals and percentages including in different contexts.
- Solve problems which require answers to be rounded to specified degrees of accuracy.
- Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.