

# Year 6 Maths Pathway (WRM)

**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.

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.

Use common factors to simplify fractions; use common multiples to express fractions in the same denominator.

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  $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$ )

Divide proper fractions by whole numbers (for example  $\frac{1}{2} \div \frac{1}{3} = \frac{3}{2}$ )

Associate a fraction with division and calculate decimal fraction equivalents (for example, 0.375) for a simple fraction (for example  $\frac{3}{8}$ )

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

**Number: Addition, Subtraction, multiplication and division**

$+$   $-$   $\times$   $\div$

**Number: Fractions**

**Geometry: Position and direction**

**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.

**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.

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.

**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.

**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.

**Measurement: Perimeter, Area and Volume**

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 ( $\text{mm}^3$ ,  $\text{km}^3$ )

**Number: 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.

**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.

**Geometry: Properties of shape**

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.

**Projects, investigation and transition units**

**Consolidation / addressing gaps in learning**

## New vocabulary

**Numbers to ten million**

**Order of operations**

**Common factors, common multiples**

**Four quadrants (for coordinates)**

**Vertically opposite (angles)**

**Circumference, radius, diameter**

**Degree of accuracy**

**Simplify**

**Linear number sequence**

**Substitute**

**Variables**

**Symbol**

**Known values**

**Mean**

**Pie chart**

**Construct**

