

Grade 4

Maths in the Primary Years Programme (PYP), is taught through an integrated, inquiry-based approach that emphasises understanding concepts, problem-solving, and real-world application rather than rote memorisation. The focus is on helping students become confident mathematicians who can think critically and apply their knowledge in meaningful ways.

Maths is divided into five interrelated strands which are taught progressively.

- ☐ **Data Handling:** Collecting, organising, and interpreting data, including graphing and statistics.
- ☐ **Measurement:** Exploring concepts of time, length, mass, capacity, and volume.
- ☐ **Shape and Space:** Investigating geometry, shapes, spatial reasoning, and positions.
- ☐ **Pattern and Function:** Recognising and describing patterns and relationships, including early algebraic thinking.
- ☐ **Number:** Understanding numbers, operations, and their relationships.

Data Handling

Focus	Learning Outcomes
Line graphs - read and draw	I can retrieve information from a line graph I can draw a line graph I can use line graphs to solve problems
Averages - mode and median	I can understand and identify the mode and median of a set of data
Probability - fraction percentage	I can express the probability of real-life events as a fraction or percent I can use probability to help me choose outcomes in events or games

Measurement

Focus	Learning Outcomes
Time - 12 and 24 hour clocks, convert units of time, timetables	- I can tell the time using both 12 and 24 hour clocks - I can convert units of time e.g. minutes to hours, hours to minutes, seconds to minutes - I can explain how a timetable works - I can use a timetable to find out information about an event - I can select and use appropriate units of measurement and tools to solve problems in real-life situations
Perimeter - measure, and calculate, irregular shapes	- I can measure the perimeter of a shape - I can calculate the perimeter of a quadrilateral - I can find the perimeter of a compound/irregular shape
Area - count and calculate quadrilaterals, compound shapes	- I can count squares to find the area of a shape - I can calculate the area of a rectangle - I can calculate the area of compound shapes - I can find the area of irregular shapes
Volume	- I can explain the difference between volume and capacity - I can explain different metric measures of volume ml, cl, l - I can add and subtract different measurements of volume - I can measure the volume of a shape by filling it with cm cubes and counting them - I can work out the volume of a 3D shape - I can count the cubes in an irregular 3D shape to find its volume - I can calculate the volume of a shape using the formula $L \times W \times D$ - I can measure volume to solve real-life problems

Angles	I understand we measure angles using degrees in measurement I can use a protractor to measure angles accurately I can use a protractor to draw angles accurately
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Shape and Space

Focus	Learning Outcomes
Angles - types of angle, compare and order, measure and construct	I can identify different types of angles e.g. acute, right, obtuse, reflex I can calculate missing angles on a straight line I can identify and classify a shape by its angles e.g. a square has four 90° angles
2D Shapes - triangles	I can draw different types of triangles using a ruler I can draw a triangle with specific attributes
2D Shapes/polygons	I can describe 2D shapes using correct mathematical language e.g. edges, sides, vertices, faces, corners, angles I can identify different types of 2D shapes by their properties I can draw different types of quadrilaterals I can explain the difference between a regular and irregular shape
3D shapes - describe and classify	I can describe 2D and 3D shapes using correct mathematical language e.g. edges, sides, vertices, faces, corners, angles I can use 2D drawings/representations of 3D shapes to identify their attributes I understand the similarities and differences between regular and irregular shapes I can use geometric vocabulary in real-life situations or when solving other mathematical problems
Coordinates	I can identify the coordinates of a point in any of the four quadrants I can plot the coordinates of a point in any of the four quadrants I can translate a shape on a grid using directional language

Pattern and Function

Focus	Learning Outcomes
Patterns generated by a rule	I can continue and generate patterns of fractions ($n = n + \frac{1}{2}$) I can continue and generate patterns of decimal fractions (0.2, 0.4, 0.8, __)
Factors	I can explain what a factor of a number is I can list the factors of 2 and 3 digit numbers I can explain what a prime number is I can find prime numbers between 1 and 20
Integers and exponents	I can explain what an integer is I can identify an exponent number and write it as repeated multiplication and vice versa (PF) I can explain what a square number is I can work out the first 12 square numbers

Number

Focus	Learning Outcomes
Place Value - Count, compare, order, round whole numbers to 100,000	I can read, compare and order numbers up to 1 million I can round any number to the nearest 10 up to 1 million I can count in 10s, 100s, 1000s 10,000s, 100,000s
Place Value (decimal numbers) - Count, compare, order, and round	I can multiply numbers by 10, 100, 1000 I can divide numbers by 10, 100, 1000 I can explain the value of numbers with 2 d.p.

	I understand 1000ths and their relationship to 10th and 100ths I can order and compare decimal numbers
Addition - 4-digits, decimals, word problems	I can add numbers with up to 4 digits I can solve multistep word problems using all four operations I can add decimals with the same number of decimal places I can use inverse operations to solve maths problems
Subtraction - 4-digits, decimals, word problems	I can subtract numbers with up to 4 digits I can solve multistep word problems using all four operations I can use estimation to work out the reliability of my answers I can subtract decimals with the same number of decimal places I can use inverse operations to solve maths problems
Negative numbers	I can demonstrate that numbers below 0 are negative I can count on in negative numbers I can plot negative numbers on a number line I can use scales with negative numbers
Multiplication - Whole numbers	I can use written methods to multiply numbers up to 4-digit by 1-digit numbers I can multiply numbers using the grid method I can use written method to multiply numbers up to 4-digits by 2-digits
Division - Whole numbers	I can use written methods e.g. chunking, grouping short, long to divide numbers up to 4-digit by 1-digit numbers I can divide numbers with remainders
Fractions - Addition/Subtraction	I can add fractions with different denominators (where denominators are simple multiples of each other) I can add 3 or more fractions I can subtract fractions with the same denominator I can add mixed numbers I can subtract mixed numbers

Fractions - Ordering fractions	I can explain/demonstrate that fractions can have equivalent fractions of the same value (using bar models) I can compare and order fractions with the same denominator and different numerators I am beginning to compare and order numbers with different denominators
Fractions - Improper/mixed numbers	I can turn mixed numbers into improper fractions I can turn improper fractions into mixed numbers I can compare and order mixed numbers and improper fractions
Fractions - Fractions of quantity	I can find the fraction of an amount I can find the fractions of an amount by dividing by the denominator and multiplying by the numerator
Understand the relationship between fractions, decimals and percentages	I can turn fractions of $\frac{1}{10}$ into decimals I can explain the relationship between fractions and percentages I can demonstrate the relationship between 10ths, percentages and fractions
Word Problems	I can break a word problem into different steps I can solve a word problem and check the reasonableness of my answers

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