



Maths – Year 6

Yearly Topic Overview

Rising Stars Mathematics



PARISH
CE Primary School

These medium-term plans give a complete at-a-glance overview of the structure of Maths at Parish for Year 6 detailing the order of teaching, key concepts, questions and vocabulary and a suggestion of what could be covered each term with some flexibility. Each length of topic (in weeks) differs. Some topics may take 2 weeks to cover, others may take longer depending on the class and cohort. If teachers are confident that children have mastered a concept, then it is acceptable to move on quickly, just as it is important to allow children to spend longer on a topic if necessary to ensure they have fully mastered it before moving on. It is important to remember that the length of a half-term will vary. If the half-term is short, teachers can choose to move a unit into the next term. If a half-term is long, teachers can choose to move a unit back into the preceding term. It is best practice to avoid splitting units between two half-terms, unless the content in each concept is very distinct. Please use these topic overviews as a guide to your class' planning, teaching and learning to provide consistency across the year group.

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Autumn 1	Year 6		
Strand	Place Value and Decimals – Number Sense		
Domain	<ol style="list-style-type: none"> 1. Number and Place Value 2. Measurement 3. Fractions/Decimals/Percentages 		
Key Concepts	Place Value Comparing, ordering and rounding numbers Comparing, ordering and simplifying fractions Multiplying and dividing decimal numbers	Key Vocabulary	place value, compare, order, fractions, numerator, denominator, vinculum, unit fractions, non-unit fractions, multiplication, division, decimals, tenths, hundredths, thousandths
Objectives	<ul style="list-style-type: none"> • 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 • Solve problems involving addition and subtraction • Demonstrate an understanding of place value including decimals e.g. $28.13 = 28 + ? + 0.03$. • Solve number and practical problems that involve ordering and comparing numbers to 10,000,000, rounding to a required degree of accuracy, using negative numbers and calculating intervals across zero • Solve multi-step problems in contexts, deciding which operations and methods to use and why e.g. find the change from £20 for three items that cost £1.24, £7.92 and £2.55; • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy 		
Key questions	Can I partition, add and subtract numbers up to 10 million? Can I demonstrate my understanding of place value for numbers up to 6 digits? Can I revise column addition to add pairs of five-digit numbers with five-digit answers? Can I multiply and divide by 10,100 and 1000? Can I compare, order and round decimal numbers?		

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Autumn 1	Year 6		
Strand	Addition and Subtraction with multi-step problems		
Domain	<ol style="list-style-type: none"> 1. Number – addition and subtraction 2. Measurement 3. Order of operations 		
Key Concepts	Mental calculation strategies Written calculation strategies Calculating mentally with 3-4 digit numbers Using the order of operations	Key Vocabulary	addition, subtraction, rounding, mental calculation, written calculation, columnar addition, columnar subtraction, multiplication, division, factors, multiples, common factors, common multiples, prime numbers, consecutive numbers
Objectives	<ul style="list-style-type: none"> • Mentally calculate using a mix of the four operations. • Solve problems with more than one step and operation and explain why I used them. • Solve addition and subtraction word and practical problems. • Use estimation to check answers to calculations and determine an appropriate degree of accuracy. 		
Key questions	LQ – Can I add and subtract numbers in context? LQ – Can I solve missing number addition and subtraction problems? LQ – Can I explore patterns around consecutive numbers?		

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Autumn 1	Year 6		
Strand	Methods for long multiplication and division		
Domain	<ol style="list-style-type: none"> 1. Number - multiplication and division 2. Measurement 		
Key Concepts	Using long multiplication Using long division Calculating mentally with large numbers Multiply and divide up to 2 decimal places Choosing operations to solve problems	Key Vocabulary	multiplication, division, multiples, factors, factor pairs, squares, cubes, common factors, long multiplication, long division, remainders
Objectives	<ul style="list-style-type: none"> • Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. • Perform mental calculations, including with mixed operations and large numbers • Use his/her knowledge of the order of operations to carry out calculations involving the four operations • Divide numbers up to 4 digits by a two-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 two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context. 		
Key questions	Can I use long multiplication? Can I investigate products of 2-3 digit numbers? Can I use long division?		

Maths Yearly Topic Overview – Year 6



Subject: Maths

Term: Autumn 2	Year 6		
Strand	Comparing and multiplying fractions – Number sense		
Domain	<ol style="list-style-type: none"> 1. Number – number and place value 2. Number – multiplication and division 3. Number - fractions 		
Key Concepts	Ordering and comparing fractions Multiplying fractions Dividing fractions	Key Vocabulary	Compare, order, fractions, numerator, denominator, vinculum, unit fractions, non-unit fractions, place holders, multiplication, division, factors, multiples, common factors, common multiples, highest common factor, lowest common multiple
Objectives	<ul style="list-style-type: none"> • Compare and order fractions, including fractions > 1 • Compare and order fractions, including fractions > 1 • Multiply simple pairs of proper fractions, writing the answer in its simplest form e.g. $1/4 \times 1/2 = 1/8$. • Divide proper fractions by whole numbers e.g. $1/3 \div 2 = 1/6$. 		
Key questions	<p>Can I compare, order and simplify fractions?</p> <p>Can I multiply fractions?</p> <p>Can I divide fractions?</p>		

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Autumn 2	Year 6		
Strand	Percentage Equivalents		
Domain	1. Fractions/Decimals/Percentages		
Key Concepts	Fraction, decimal and percentage equivalents Solving problems with percentages	Key Vocabulary	compare, order, fractions, numerator, denominator, vinculum, unit fractions, non-unit fractions, place holders, multiplication, division, factors, multiples, common factors, common multiples, highest common factor, lowest common multiple, decimals, tenths, hundredths, thousandths, percentages, percent
Objectives	<ul style="list-style-type: none"> Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts e.g. one piece of cake that has been cut into 5 equal slices can be expressed as $\frac{1}{5}$ or 0.2 or 20% of the whole cake. Solve problems involving the calculation of percentages e.g. of measures, such as 15% of 360 and the use of percentages for comparison. 		
Key questions	<p>Can I find percentages of amounts?</p> <p>Can I find fractions of amounts?</p> <p>Can I find decimals of amounts?</p> <p>Can I find fractional, decimal and percentages of amounts?</p>		

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Autumn 2	Year 6		
Strand	Ratio and Proportion		
Domain	1. Solving problems with ratio and proportion		
Key Concepts	Solving problems with ratio and proportion Solving multi-step problems	Key Vocabulary	ratio, proportion, wholes, parts of a whole, division, multiplication, amount
Objectives	<ul style="list-style-type: none"> • 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 unequal sharing and grouping using knowledge of fractions and multiples. 		
Key questions	<p>Can I find percentage reductions of amounts? Can I understand ratio? Can I simplify ratios? Can I use ratios to solve problems? Can I understand proportion? Can I solve problems involving ratios and proportion?</p>		

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Spring 1	Year 6		
Strand	Area, Perimeter and Volume		
Domain	<ol style="list-style-type: none"> Geometry – properties of shape Measurement 		
Key Concepts	Areas and properties of 2-D shapes Finding perimeters Finding volumes Using formulae Finding missing values	Key Vocabulary	area, perimeter, volume, triangles, 2-D, 3-D, shape, multiples, factors, squares, cubes, estimate, angles, degrees, acute, obtuse, reflex, regular, irregular polygons, multiplication, division, formula, cubes, cuboids, metres, square metres, cubic metres
Objectives	<ul style="list-style-type: none"> Recognise that shapes with the same area can have different perimeters and vice versa Calculate the area of parallelograms and triangles Recognise when it is possible to use formulae for the area and volume of shapes. Calculate, estimate and compare the volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units e.g. mm³ and km³. 		
Key questions	Can I find the area and perimeter of rectilinear polygons? Can I recognise that shapes with the same areas can have different perimeters and vice versa? Can I use formulae to calculate the area of triangles and parallelograms? Can I calculate the area of parallelograms and triangles? Can I calculate the volume of cubes and cuboids? Can I compare the volumes of cubes and cuboids?		

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Spring 1	Year 6		
Strand	Angles of shape – Geometric reasoning		
Domain	<ol style="list-style-type: none"> 1. Geometry – properties of shape 2. Geometry - angles 3. Measurement 		
Key Concepts	Finding angles Describing 2-D shapes Finding missing values Circles	Key Vocabulary	angles, degrees, acute, obtuse, reflex, right angles, parallel, perpendicular, intersection, regular, irregular, triangles, quadrilaterals, polygons, vertical, horizontal, circle, radius, diameter, circumference
Objectives	<ul style="list-style-type: none"> • Draw 2-D shapes using given dimensions and angles. • Compare and classify geometric shapes based on their properties and sizes. • 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. • Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius. 		
Key questions	Can I compare and classify 2-D shapes and describe their properties? Can I construct 2D shapes accurately? Can I review the properties and construction of 2D shapes? Can I find unknown angles in triangles and quadrilaterals? Can I compare and classify 2-D shapes and describe their properties? Can I find missing angles? Can I name and investigate the parts of a circle; including radius, diameter and circumference? Can I accurately construct and name the parts of a circle?		

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Spring 1	Year 6		
Strand	Nets, Reflection and Translation		
Domain	<ol style="list-style-type: none"> 1. Geometry – properties of shape 2. Measurement 		
Key Concepts	Making and measuring 3-D shapes Drawing shapes and finding angles Reflections and equations	Key Vocabulary	nets, cubes, cuboids, coordinates, quadrants, reflection, symmetry, translation, 3-D, 2-D, angles, acute, obtuse, reflex, horizontal, vertical, equations, formula
Objectives	<ul style="list-style-type: none"> • Recognise, describe and build simple 3-D shapes, including making nets. • Describe positions on the full coordinate grid (all four quadrants). 		
Key questions	<p>Can I recognise and build simple 3D shapes, including making nets?</p> <p>Can I recognise and build simple 3D shapes, including making nets?</p> <p>Can I describe positions on the full coordinate grid?</p> <p>Can I plot, reflect and translate shapes on a coordinate grid?</p>		

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Spring 2	Year 6		
Strand	Calculating between units of measure		
Domain	<ol style="list-style-type: none"> 1. Number – Multiplication and division 2. Measurement 		
Key Concepts	Understanding different units Multiplying and dividing by multiples of 10	Key Vocabulary	Kilometres, metres, centimetres, millimetres, kilograms, grams, miles, multiplication, division, conversion
Objectives	<ul style="list-style-type: none"> • 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 up to three decimal places. • Convert between miles and kilometres. 		
Key questions	<p>Can I convert between units of measure?</p> <p>Can I solve word problems involving conversion of units of measure?</p> <p>Can I solve word problems involving conversion of units of measure?</p> <p>Can I convert between units of measure?</p>		

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Spring 2	Year 6		
Strand	Pie Charts, Line Graphs and Means		
Domain	Statistics		
Key Concepts	Understanding pie charts Understanding line graphs Finding the mean	Key Vocabulary	pie chart, line graph, mean, average, addition, division
Objectives	<ul style="list-style-type: none"> • Interpret and construct pie charts and line graphs and use these to solve problems • Calculate and interpret the mean as an average. 		
Key questions	<p>Can I interpret pie charts? Can I interpret line graphs? Can I calculate the mean of a set of data?</p>		

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Spring 2	Year 6		
Strand	Algebra		
Domain	1. Algebra		
Key Concepts	Using formulae Unknowns and variables Formulae and sequences	Key Vocabulary	algebra, algebraic terms, missing value, variable, formula, sequence
Objectives	<ul style="list-style-type: none"> • Find pairs of numbers that satisfy an equation with two unknowns. • Enumerate possibilities of combinations of two variables • Generate and describe linear number sequences. • Express missing number problems algebraically. 		
Key questions	<p>Can I find missing values? Can I use formulae to create sequences? Can I solve algebraic equations?</p>		

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Summer 1	Year 6		
Strand	Number and Place Value		
Domain	<ol style="list-style-type: none"> 1. Number – Number and place value 2. Number – Fractions including decimals and percentages 3. Measurement 		
Key Concepts	Negative numbers in real life Decimals in context	Key Vocabulary	pounds, pence, unique selling point, net profit, profit margin, addition, subtraction, multiplication, division
Objectives	<ul style="list-style-type: none"> • Round any whole number to a required degree of accuracy • Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit • Perform mental calculations with mixed operations to carry out calculations involving the four operations. • Solve problems involving addition and subtraction • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. • Compare and order fractions, including fractions > 1. • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. 		
Key questions	<p>Can I Solve Addition and Subtraction Problems? Can I Use Estimation to Solve Problems? Can I Solve Problems Using Factors, Multiples and Prime Numbers? Can I Solve A Range of Problems using Different Operations? Can I Read, Write, Order and Compare Numbers up to 10 000 000? Can I Round Numbers Applying a Knowledge of Place Value? Can I Solve Place Value Number Problems? Can I Solve Problems Involving Adding and Subtracting Fractions? Can I Compare and Order Fractions?</p>		

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Summer 1	Year 6		
Strand	Fractions, Decimals and Percentages		
Domain	1. Fractions/Decimals/Percentages		
Key Concepts	Fraction, decimal and percentage equivalents Solving problems involving fractions Solving problems involving decimals Solving problems with percentages	Key Vocabulary	
Objectives	<ul style="list-style-type: none"> • Use common factors to simplify fractions; use common multiples to express fractions in the same denomination. • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions. • Compare and order fractions, including fractions > 1. 		
Key questions	Can I Solve Problems Applying Decimal Place Value? Can I Simplify Fractions and Common Denominators? Can I solve Problems with Rounding? Can I Recall and Use Equivalences?		

Maths Yearly Topic Overview – Year 6



Subject: **Maths**

Term: Summer 2	Year 6		
Strand	Number in real life		
Domain	<ol style="list-style-type: none"> 1. Numbers in real life 2. Statistics 3. Measurement 		
Key Concepts	Exploring money Making profit	Key Vocabulary	
Objectives	<ul style="list-style-type: none"> • 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 ordering and comparing numbers to 10,000,000, rounding to a required degree of accuracy, using negative numbers and calculating intervals across zero • Demonstrate an understanding of place value including decimals e.g. $28.13 = 28 + ? + 0.03$. • Solve multi-step problems in contexts, deciding which operations and methods to use and why e.g. find the change from £20 for three items that cost £1.24, £7.92 and £2.55; a roll of material is 6m long: how much is left when 5 pieces of 1.15m are cut from the roll?; a bottle of drink is 1.5 litres, how many cups of 175ml can be filled from the bottle, and how much drink is left? • Solve problems involving addition and subtraction • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. • Calculate and interpret the mean as an average. 		
Key questions	Can use money in context to run an enterprise stall?		