



St. Margaret's C.E. Junior School

Year 6 Maths Curriculum Overview



AUTUMN	SPRING	SUMMER
<p>Number: place value</p> <p>*(PS) Introduce PS strategies</p> <ul style="list-style-type: none">• Numbers to 10,000, 100,000 & 1,000,000 (NPV 2) (R)• Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (NPV 1) (NPV 2) (NPV 3)<ul style="list-style-type: none">➤ Numbers to 1,000,000➤ Numbers to 10,000,000➤ Read and write numbers to 10,000,000➤ Powers of 10➤ Number line to 10,000,000 (NPV 4)➤ Compare and order any integers• Round any numbers to 10, 100 & 1, 000 (NPV 3) (R)• Round any whole number to a required degree of accuracy (NPV 3)<ul style="list-style-type: none">➤ Round any integers• Use negative numbers in context, and calculate intervals across zero (NPV 3)<ul style="list-style-type: none">➤ Negative numbers• Solve number and practical problems that involve all of the above (NPV 3) <p>*(PS) Testbase temperature problems</p>	<p>Ratio & proportion</p> <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 (AS/MD 1) (AS/MD 3)<ul style="list-style-type: none">➤ Add or multiply?➤ Use ratio language➤ Introduction to the ratio symbol➤ Ratio and fractions• Solve problems involving similar shapes where the scale factor is known or can be found (MD 3)<ul style="list-style-type: none">➤ Scale drawing➤ Use scale factors➤ Similar shapes• Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples (MD 3)<ul style="list-style-type: none">➤ Ratio problems➤ Proportion problems➤ Recipes	<p>Geometry: properties of shape</p> <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• Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles (G 1)<ul style="list-style-type: none">➤ Measure and classify angles➤ Calculate angles➤ Vertically opposite angles➤ Angles in a triangle➤ Angles in a triangle – special cases➤ Angles in a triangle – missing angles➤ Angles in a quadrilateral➤ Angles in polygons• Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius<ul style="list-style-type: none">➤ Circles• Recognise, describe and build simple 3-D shapes, including making nets (G 1)<ul style="list-style-type: none">➤ Draw shapes accurately➤ Nets of 3-D shapes• Solve problems involving all of the above

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<p><u>Number: four operations</u></p> <ul style="list-style-type: none"> • Add & subtract whole nos with more than 4 digits (R) <ul style="list-style-type: none"> ➤ Add and subtract integers • Multi-step addition & subtraction problems (R) • Identify common factors, common multiples and prime numbers (R) <ul style="list-style-type: none"> ➤ Common factors ➤ Common multiples • Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) (Year 5) <p>*(PS) Testbase Carroll & Venn diagrams</p>	<p><u>Algebra</u></p> <ul style="list-style-type: none"> • Use simple formulae • Generate and describe linear number sequences <ul style="list-style-type: none"> ➤ 1-step function machines • Express missing number problems algebraically <ul style="list-style-type: none"> ➤ 2-step function machines ➤ Form expressions ➤ Substitution ➤ Formulae ➤ Form equations ➤ Solve 1-step equations ➤ Solve 2-step equations • Find pairs of numbers that satisfy an equation with two unknowns (AS/MD 4) • Enumerate possibilities of combinations of two variables <ul style="list-style-type: none"> ➤ Find pairs of values ➤ Solve problems with two unknowns 	<p><u>Geometry: property, position & direction</u></p> <ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> ➤ The first quadrant ➤ Read and plot points in four quadrants ➤ Solve problems with coordinates ➤ Translations ➤ Reflections
<p><u>Number: four operations</u></p> <ul style="list-style-type: none"> ➤ Rules of divisibility ➤ Primes to 100 ➤ Square and cube numbers ➤ Multiply up to a 4-digit number by a 2-digit number <ul style="list-style-type: none"> • Multiply 4 digits by 1 digit, 2 digits (R) • Multiply 2 digits by 2 digits (R) • Multiply 3 digits by 2 digits (R) • Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication <ul style="list-style-type: none"> ➤ Solve problems with multiplication (AS/MD 2) • Divide 4 digits by 1 digit (R) • Divide with remainders (R) • 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 context <ul style="list-style-type: none"> ➤ Short division ➤ Division using factors (AS/MD 2) 	<p><u>Number: decimals</u></p> <ul style="list-style-type: none"> • Decimals up to 2 decimal places (NPV 2) (R) • Understand thousandths (NPV 2) (R) • 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 (NPV 2) <ul style="list-style-type: none"> ➤ Place value within 1 ➤ Place value – integers and decimals • Solve problems which require answers to be rounded to specified degrees of accuracy <ul style="list-style-type: none"> ➤ Round decimals ➤ Add and subtract decimals • Multiply one-digit number with up to two decimal places by whole numbers (NPV 4) <ul style="list-style-type: none"> ➤ Multiply by 10, 100 and 1,000 ➤ Multiply decimals by integers • Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction • Use written division methods in cases where the answer 	<p><u>Themed projects, consolidation and problem solving</u></p> <ul style="list-style-type: none"> ➤ White Rose Bakery ➤ White Rose Tours ➤ White Rose Futures

<ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> ➤ Introduction to long division ➤ Long division with remainders ➤ Solve problems with division (AS/MD 2) ➤ Solve multi-step problems (AS/MD 2) • Use their knowledge of the order of operations to carry out calculations involving the four operations <ul style="list-style-type: none"> ➤ Order of operations • Perform mental calculations, including with mixed operations and large numbers <ul style="list-style-type: none"> ➤ Mental calculations and estimation • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy <ul style="list-style-type: none"> ➤ Reason from known facts (AS/MD 2) • Solve multi-step problems in context, involving addition, subtraction, multiplication and division, deciding which operations and methods to use and why (AS/MD 2) 	<p>has up to two decimal places</p> <ul style="list-style-type: none"> ➤ Divide by 10, 100 and 1,000 ➤ Divide decimals by integers ➤ Multiply and divide decimals in context 	
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<p><u>Number: fractions A</u></p> <ul style="list-style-type: none"> ➤ Equivalent fractions and simplifying ➤ Equivalent fractions on a number line • Use common factors to simplify fractions (F 1) • Use common multiples to express fractions in the same denominator (F 1) • Compare and order fractions, including fractions > 1 (F 2) (F 3) <ul style="list-style-type: none"> ➤ Compare and order (denominator) ➤ Compare and order (numerator) • Generate and describe linear number lines with fractions (F 1) • Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions (F 1) <ul style="list-style-type: none"> ➤ Add and subtract simple fractions ➤ Add and subtract any two fractions ➤ Add mixed numbers ➤ Subtract mixed numbers ➤ Multi-step problems <p><u>Number: fractions B</u></p> <ul style="list-style-type: none"> • Multiply simple pairs of proper fractions, writing the answer in its simplest form <ul style="list-style-type: none"> ➤ Multiply fractions by integers ➤ Multiply fractions by fractions • Divide proper fractions by whole numbers <ul style="list-style-type: none"> ➤ Divide a fraction by an integer ➤ Divide any fraction by an integer ➤ Mixed questions with fractions 	<p><u>Number – fractions (including decimals and percentages)</u></p> <ul style="list-style-type: none"> • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts (MD 3) <ul style="list-style-type: none"> ➤ Decimal and fraction equivalents • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts <ul style="list-style-type: none"> ➤ Fractions as division ➤ Understand percentages ➤ Fractions to percentages ➤ Equivalent fractions, decimals and 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 <ul style="list-style-type: none"> ➤ Percentage of an amount – one step ➤ Percentage of an amount – multi-step ➤ Order fractions, decimals and percentages ➤ Percentages – missing values • Use written division methods in cases where the answer has up to two decimal places • Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction 	

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<p>Measurement: converting units</p> <ul style="list-style-type: none"> • 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 three decimal places (NPV 4) <ul style="list-style-type: none"> ➤ Metric measures ➤ Convert metric measures ➤ Calculate with metric measures ➤ Miles and kilometres ➤ Imperial measures • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate • Convert between miles and kilometres <p>*(PS) Drawing a table/ drawing a diagram (graph)</p>	<p>Measurement: perimeter, area & volume</p> <ul style="list-style-type: none"> • Recognise that shapes with the same areas can have different perimeters and vice versa (G 1) <ul style="list-style-type: none"> ➤ Shapes – same area ➤ Area and perimeter • Calculate the area of parallelograms and triangles (G 1) <ul style="list-style-type: none"> ➤ Area of a triangle – counting squares ➤ Area of a right-angled triangle ➤ Area of any triangle ➤ Area of a parallelogram • Recognise when it is possible to use formulae for area and volume of shapes • Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units <ul style="list-style-type: none"> ➤ Volume – counting cubes ➤ Volume of a cuboid 	
	<p>Statistics</p> <ul style="list-style-type: none"> • Interpret and construct pie charts and line graphs Calculate and interpret the mean as an average • Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs (Year 4) <ul style="list-style-type: none"> ➤ Line graphs ➤ Dual bar charts • Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius <ul style="list-style-type: none"> ➤ Read and interpret pie charts ➤ Pie charts with percentages ➤ Draw pie charts ➤ The mean 	

White Rose Maths Hub & Power Maths schemes of learning are used to support medium term planning and as exemplification for maths objectives.

R- RECAP of previous objectives

➤ WRH Small Steps

Small steps can be combined into one lesson.

*** (PS) PROBLEM SOLVING opportunities**

DfE- Ready to progress criteria

NF- Number Facts

NPV- Number & Place Value

AS- Addition & Subtraction

MD- Multiplication & Division

F- Fractions

G- Geometry

REMEMBER to complete **pre & post learning assessments**.

Only move on when the majority of pupils are secure in the objective.