St. Margaret's C.E. Junior School
Year 6 Maths Curriculum Overview

AUTUMN	SPRING	SUMMER
Number: place value ***(PS) Introduce PS strategies** • 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) ➢ 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) ➢ Round any integers • Use negative numbers in context, and calculate intervals across zero (NPV 3) ➢ Negative numbers • **Solve number and practical problems** that involve all of the above (NPV 3) ***(PS) Testbase temperature problems**	**Ratio & proportion** • **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) ➢ 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) ➢ Scale drawing ➢ Use scale factors ➢ Similar shapes • **Solve problems** involving unequal sharing and grouping using knowledge of fractions and multiples (MD 3) ➢ Ratio problems ➢ Proportion problems ➢ Recipes	**Geometry: properties of shape** • 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) ➢ 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 ➢ Circles • Recognise, describe and build simple 3-D shapes, including making nets (G 1) ➢ Draw shapes accurately ➢ Nets of 3-D shapes • **Solve problems involving all of the above**

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Number: four operations • Add & subtract whole nos with more than 4 digits (R) ➢ Add and subtract integers • Multi-step addition & subtraction problems (R) • Identify common factors, common multiples and prime numbers (R) ➢ Common factors ➢ Common multiples • Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) (Year 5) ***(PS) Testbase Carroll & Venn diagrams**	**Algebra** • Use simple formulae • Generate and describe linear number sequences ➢ 1-step function machines • Express missing number problems algebraically ➢ 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 ➢ Find pairs of values ➢ **Solve problems** with two unknowns	**Geometry: property, position & direction** • 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 ➢ The first quadrant ➢ Read and plot points in four quadrants ➢ **Solve problems** with coordinates ➢ Translations ➢ Reflections
Number: four operations ➢ Rules of divisibility ➢ Primes to 100 ➢ Square and cube numbers ➢ Multiply up to a 4-digit number by a 2-digit number • 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 ➢ **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	**Number: decimals** • 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) ➢ Place value within 1 ➢ Place value – integers and decimals • **Solve problems** which require answers to be rounded to specified degrees of accuracy ➢ Round decimals ➢ Add and subtract decimals • Multiply one-digit number with up to two decimal places by whole numbers (NPV 4) ➢ Multiply by 10, 100 and 1,000 ➢ Multiply decimals by integers	**Themed projects, consolidation and problem solving** ➢ White Rose Bakery ➢ White Rose Tours ➢ White Rose Futures

the formal written method of short division where appropriate, interpreting remainders according to context ➢ Short division ➢ Division using factors (AS/MD 2) • 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 ➢ 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 ➢ Order of operations • Perform mental calculations, including with mixed operations and large numbers ➢ Mental calculations and estimation • **Use estimation** to check answers to calculations and determine, **in the context of a problem**, an appropriate degree of accuracy ➢ 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)	• 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 has up to two decimal places ➢ Divide by 10, 100 and 1,000 ➢ Divide decimals by integers ➢ Multiply and divide decimals in context	

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Number: fractions A ➢ 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 denomination (F 1) • Compare and order fractions, including fractions > 1 (F 2) (F 3) ➢ 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) ➢ Add and subtract simple fractions ➢ Add and subtract any two fractions ➢ Add mixed numbers ➢ Subtract mixed numbers ➢ Multi-step problems **Number: fractions B** • Multiply simple pairs of proper fractions, writing the answer in its simplest form ➢ Multiply fractions by integers ➢ Multiply fractions by fractions • Divide proper fractions by whole numbers ➢ Divide a fraction by an integer ➢ Divide any fraction by an integer ➢ Mixed questions with fractions	**Number – fractions (including decimals and percentages)** • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts (MD 3) ➢ Decimal and fraction equivalents • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts ➢ 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 ➢ 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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Measurement: converting units • 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) ➢ 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 ***(PS) Drawing a table/ drawing a diagram (graph)**	**Measurement: perimeter, area & volume** • Recognise that shapes with the same areas can have different perimeters and vice versa (G 1) ➢ Shapes – same area ➢ Area and perimeter • Calculate the area of parallelograms and triangles (G 1) ➢ 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 ➢ Volume – counting cubes ➢ Volume of a cuboid	
	Statistics • 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) ➢ 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 ➢ 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.