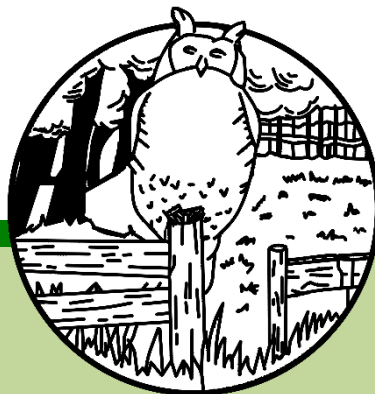


Key Stage 2 Maths Curriculum Overview



Woodland Grange Primary School

Aiming high to achieve excellence and success by working together.

The following document gives a clear pathway through key stage 2 in terms of the maths that is taught in each year group. You will notice that there is progression in what children are taught as well as areas that are only covered at the upper end of KS2. You may also notice that although there may be less focussed objectives in year 6 we prepare all children for their end of key stage assessments (beginning in year 5) and as such all areas are revised. Please remember that this is a guide. We reflect, plan and deliver according to the needs of the child.

	Year 3	Year 4	Year 5	Year 6
Number & Place Value	<ul style="list-style-type: none"> Count from 0 in multiples of 4, 8, 50 and 100; find 10/100 more/less than a given number Recognise the place value of each digit in a 3-digit number (100s, 10s, 1s) Compare and order numbers up to 1,000 Identify, represent and estimate numbers using different representations Read and write numbers up to 1,000 in numerals and words Solve number problems and practical problems involving all of the above 	<ul style="list-style-type: none"> Count in multiples of 6, 7, 9, 25 and 100 Find 1,000 more or less than a given number Count backwards through 0 to include negative numbers Recognise the place value of each digit in a 4-digit number (1,000s, 100s, 10s, 1s) Order and compare numbers beyond 1,000 Identify, represent and estimate numbers using different representations Round any number to the nearest 10, 100 or 1,000 Solve number and practical problems that involve all of the above and with increasingly larger numbers Read Roman numerals to 100 (I to C) and know that over time the numeral system changed to include the concept of 0 and place value 	<ul style="list-style-type: none"> Read, write, order and compare numbers up to 1,000,000 and determine the value of each digit Count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000 Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through 0 Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 Solve number and practical problems that involve all of the above Read Roman numerals up to 1,000 (M) and recognise years written in Roman numerals 	<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 Use negative numbers in context and calculate intervals across 0 Solve number and practical problems that involve all of the above
Addition & Subtraction	<ul style="list-style-type: none"> Add and subtract numbers mentally 	<ul style="list-style-type: none"> Add and subtract whole numbers with up to 4 	<ul style="list-style-type: none"> Add and subtract whole numbers with more than 	<ul style="list-style-type: none"> Use knowledge of the order of operations to

	<p>including: 3-digit number and 1s, 10s and 100s</p> <ul style="list-style-type: none"> • Add and subtract numbers with up to 3 digits using formal written methods (column add and subtract) • Estimate the answer to a calculation and use inverse operations to check the answer • Solve problems including missing number problems using number facts, place value and more complex addition and subtraction 	<p>digits using formal written methods (column add and subtract where appropriate)</p> <ul style="list-style-type: none"> • Estimate and use inverse operations to check answers to a calculation • Solve addition and subtraction 2 step problems in contexts, deciding which operations to use and why 	<p>4 digits using formal written methods (column add and subtract)</p> <ul style="list-style-type: none"> • Add and subtract numbers mentally with increasingly large numbers • Use rounding to check answers to calculations and determine (in the context of a problem) levels of accuracy • Solve addition and subtraction multi step problems in contexts deciding which operation to use and why 	<p>carry out calculations involving the 4 operations</p> <ul style="list-style-type: none"> • Solve addition and subtraction multi step problems in context, deciding which operations to use and why • Solve problems involving addition, subtraction, multiplication and division • Use estimation to check answers and determine (in context) an appropriate degree of accuracy
Multiplication & Division	<ul style="list-style-type: none"> • Recall and use multiplication and division facts for the 3, 4 and 8 times tables • Write and calculate mathematical statements for multiplication and division using the times tables that they know, including for 2-digit numbers x 1-digit number, using mental and progressing to formal written methods • Solve problems including missing number problems involving multiplication and division, including positive integer scaling 	<ul style="list-style-type: none"> • Recall multiplication and division facts for multiplication tables up to 12x12 • Use place value, known and derived facts to multiply and divide mentally including: multiplying by 0 and 1; multiplying together 3 numbers • Recognise and use factor pairs and commutativity in mental calculations • Multiply 2 digit and 3-digit numbers by a 1-digit number using formal written layout • Solve problems involving multiplying and adding, 	<ul style="list-style-type: none"> • Identify multiples and factors including finding all the factor pairs of a number and common factors of 2 numbers • Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • Establish whether a number up to 100 is prime and recall all prime numbers up to 19 • Multiply numbers up to 4 digits by a 1 or 2digit number using formal written methods including long 	<ul style="list-style-type: none"> • Multiply multi-digit numbers up to 4 digits by a 2-digit number using formal written method of long multiplication • Divide numbers up to 4 digits by a 2-digit whole number using formal written methods of long division • Interpret remainders as whole numbers, fractions or by rounding • Divide numbers up to 4 digits by a 2-digit whole number using formal written methods of short division • Perform mental calculations including

	<p>problems and correspondence</p> <p>problems in which 'n' objects are connected to 'm' objects</p>	<p>including using the distributive law to multiply 2-digit numbers by 1-digit number, scaling problems such as 'n' objects are connected to 'm' objects</p>	<p>multiplication for 2-digit numbers</p> <ul style="list-style-type: none"> • Multiply and divide numbers mentally drawing upon known facts • Divide numbers up to 4 digits by a 1-digit number using formal written method of short division • Interpret remainders • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 • Recognise and use square numbers and cube numbers and the notation for squared (²) and cubed (³) • Solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes • Solve problems involving addition, subtraction, multiplication and division including understanding the meaning of the equals sign • Solve problems involving multiplication and division including scaling by simple fractions and 	<p>mixed operations and large numbers</p> <ul style="list-style-type: none"> • Identify common factors, common multiples and prime numbers
--	--	--	---	---

			problems involving simple rates	
Fractions, Decimals & Percentages	<ul style="list-style-type: none"> • Fractions only • Count up and down in tenths, recognise that tenths arise from dividing an object by 10 equal parts and in dividing 1-digit numbers or quantities by 10 • Recognise, find and write fractions of a discrete set of objects (small denominators) • Recognise and use fractions as numbers (small denominators) • Recognise and show, using diagrams, equivalent fractions with small denominators • Add and subtract fractions with the same denominator within 1 whole • Compare and order unit fractions and fractions with the same denominator • Solve problems that involve all of the above 	<p>Fractions & decimals only</p> <ul style="list-style-type: none"> • Recognise and show using diagrams, families of common equivalent fractions • Count up or down in hundredths; recognise that hundredths arise when dividing by 100 and tenths when dividing by 10 • Solve problems involving increasingly harder fractions to calculate quantities where fractions divide the quantities (including where the answer is a whole number) • Add and subtract fractions with the same denominator • Recognise and write decimal equivalents of any number of tenths or hundredths • Recognise and write decimal equivalents of any number to $\frac{1}{2}$, $\frac{1}{4}$, $\frac{3}{4}$ • Find the effect of dividing a 1 or 2 digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths or hundredths 	<ul style="list-style-type: none"> • Compare and order fractions whose denominators are all multiples of the same number • Identify, name and write equivalent fractions of a given fraction (represented visually) including tenths and hundredths • Recognise mixed numbers and improper fractions and convert from one to the other and write mathematical statements >1 as a mixed number • Add and subtract fractions with the same denominator and denominators that are multiples of the same number • Multiply proper fractions and mixed numbers by whole numbers supported by materials and diagrams • Read and write decimal numbers as fractions • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents 	<ul style="list-style-type: none"> • Use common factors to simplify fractions; use common multiples to express fractions in the same denomination • Compare and order fractions including fractions >1 • Add and subtract fractions with different denominators and mixed numbers using the concept of equivalent fractions • Multiply simple pairs of proper fractions writing the answer in its simplest form • Divide proper fractions by whole numbers • Associate a fraction with division and calculate a decimal equivalent • Identify the value of each digit in numbers given 3 decimal places • Multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places • Multiply 1-digit numbers with up to 2 decimal places by whole numbers • Use written division methods in cases where

		<ul style="list-style-type: none"> • Round decimals with 1 decimal place to the nearest whole number • Compare numbers with the same number of decimal places up to 2 decimal places • Solve simple measure and money problems involving fractions and decimals to 2 decimal places 	<ul style="list-style-type: none"> • Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place • Read, write, order and compare numbers up to 3 decimal places • Solve problems involving numbers up to 3 decimal places • Recognise the % symbol and understand that % relates to 'number of parts of 100' and write %ages as a fraction with denominator of 100 and as a decimal fraction 	<p>the answer has up to 2 decimal places</p> <ul style="list-style-type: none"> • Solve problems which require answers to be rounded to specific degrees of accuracy • Recall and use equivalences between simple fractions, decimals and percentages in different contexts
Ratio & Proportion				<ul style="list-style-type: none"> • Solve problems involving the relative sizes of 2 quantities where missing values can be found using multiplication and division • Solve problems involving the calculation of %ages and use of %ages for comparison • Solve problem 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
Algebra				<ul style="list-style-type: none"> • Use simple formulae

				<ul style="list-style-type: none"> • Generate and describe linear problems algebraically • Find pairs of numbers that satisfy an equation with 2 unknowns • Enumerate possibilities of combinations of 2 variables
Measurement	<ul style="list-style-type: none"> • Measure, compare, add and subtract lengths (m/cm/mm) mass (kg/g) • Measure the perimeter of simple 2d shapes • Add and subtract amounts of money to give change, using both £ and p in practical contexts • Tell and write the time from an analogue clock including using Roman numerals (from I to XII) as well as 12 and 24 hour clocks • Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning/afternoon and noon/midnight • Know the number of seconds in a minute, days 	<ul style="list-style-type: none"> • Convert between different units of measure • Measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m • Find the area of a rectilinear shape by counting squares • Estimate, compare and calculate different measures, including money in £ and p • Read, write and convert time between analogue and digital 12 and 24 hour clocks • Solve problems involving converting from hours to minutes, minutes to seconds, 	<ul style="list-style-type: none"> • Convert between different unit of metric measure • Understand and use approximate equivalences between metric units and common imperial units such as inches, pound and pints • Measure and calculate the perimeter of composite rectilinear shapes in cm and m • Calculate and compare the area of rectangles (including squares) using standard units, cm² and m² and estimate the area of irregular shapes • Estimate volume and capacity • Solve problems involving converting between units of time • Use all 4 operations to solve problems involving measure using decimal notation including scaling 	<ul style="list-style-type: none"> • Solve problems involving the calculation and conversion of units of measure, using decimals up to 2 decimal places (where appropriate) • Use, read, write and convert between standard units, converting measurements of length, mass, volume, and time from a smaller unit to a larger unit (and vice versa) using decimal notation up to 3 decimal places • Convert between miles and kilometres • Recognise that shapes with the same area can have different perimeters and shapes with the same perimeter can have different areas • Recognise when it's possible to use formulae for area and volume of shapes

	<p>in a month/year/leap year</p> <ul style="list-style-type: none"> • Compare durations of events 			<ul style="list-style-type: none"> • Calculate the area of parallelograms and triangles • Estimate, calculate and compare the volume of cubes and cuboids using standard units, including cubic cm (cm³) and cubic m (m³) and extending other units
Properties of Shape	<ul style="list-style-type: none"> • Draw 2d shapes and make 3d shapes using modelling materials. Recognise 3d shapes in different orientations and describe them • Recognise angles as a property of shape or a description of turn • Identify right angles, recognise that 2 right angles makes a half turn and 4 makes a complete turn. Identify whether an angle is greater or less than a right angle • Identify horizontal and vertical lines of perpendicular and parallel lines 	<ul style="list-style-type: none"> • Compare and classify geometric shapes including quadrilaterals and triangles based on their properties and sizes • Identify acute and obtuse angles and compare and order angles up to 2 right angles by size • Identify lines of symmetry in 2d shapes presented in different orientations • Complete a simple symmetric figure with respect to a specific line of symmetry 	<ul style="list-style-type: none"> • Identify 3d shapes, including cubes and other cuboids from 2d representations • Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • Draw given angles and measure them in degrees • Identify: <ul style="list-style-type: none"> • Angles at a point and 1 whole turn (total 360°) • Angles at a point on a straight line and half a turn (total 180°) • Other multiples of 90° 	<ul style="list-style-type: none"> • Draw 2d shapes using given dimensions and angles • Recognise, describe and build simple 3d shapes including making nets • Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangle, quadrilateral and regular polygon. • Illustrate and name parts of a circle, including radius, diameter and circumference. Know that the diameter is twice the radius • Recognise angles where they meet at a point, are on a straight line or are vertically opposite and find missing angles
Position & Direction		<ul style="list-style-type: none"> • Describe positions on a 2d grid as coordinates in the first quadrant 	<ul style="list-style-type: none"> • Identify, describe and represent the position of a shape following a reflection or translation, 	<ul style="list-style-type: none"> • Describe positions on the full coordinate grid (all 4 quadrants)

		<ul style="list-style-type: none"> Describe movements between positions as translations of a given unit to the left/right and up/down Plot specified points and draw sides to a given polygon 	using the appropriate language and know that the shape has not changed	<ul style="list-style-type: none"> Draw and translate simple shapes on the coordinate plane and reflect them in axes
Statistics	<ul style="list-style-type: none"> Interpret and present data using bar charts, pictograms and tables Solve 1 step and 2 step questions using information presented in scaled bar charts, pictograms and tables 	<ul style="list-style-type: none"> Interpret and present discrete and continuous data using appropriate graphical methods including bar charts and time graphs Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs 	<ul style="list-style-type: none"> Solve comparison, sum and difference problems using information presented in a line graph Complete, read and interpret information in tables (including timetables) 	<ul style="list-style-type: none"> Interpret and construct pie charts and line graphs and use them to solve problems Calculate and interpret the mean as an average