



Amberley CE Primary School



St. James' CE Primary School,
Coldwaltham



At Arun Villages Federation, we care for EVERYONE. We embrace challenges and all opportunities to learn, recognising the value of education and persevering even when it feels difficult.

We are uncompromising in our aspirations, proud of our – and each other's - achievements and look forward to embracing the experiences the wider world offers.

Respect, Kindness, Honesty, Positivity and Teamwork

SUBJECT: Maths

Intent:

Across the Arun Villages Federation, we recognise that Maths is a skill we use on a daily basis and is an essential part of everyday life, as well as being an important creative discipline that helps us to understand patterns in the world around us. We want all pupils to develop a sense of curiosity about Maths but also develop a clear understanding. We aim to foster positive “can do” attitudes and we promote the fact that ‘We can all do maths!’ We believe all children can achieve in mathematics, and teach for secure and deep understanding of mathematical concepts through manageable steps, using a range of strategies and enhancing our provision through the use of a followed Maths Scheme, both at School and at Home. We use mistakes and misconceptions as an essential part of learning and provide challenge through rich and sophisticated problems.

Mathematics forms an important part of our broad and balanced curriculum where we endeavour to ensure that children develop an enjoyment and enthusiasm for Maths that will stay with them throughout their lives and empower them in future life. We believe that unlocking mathematical fluency is an essential life skill for all learners and is a pre-requisite to being able to reason and solve problems mathematically. Our aim is to develop a positive culture of deep understanding, confidence and competence in Maths that produces strong, secure learning. Our Maths curriculum is progressive and builds year on year, taking account of key vocabulary and key questions which help to develop a schemata of knowledge in the different domains of Maths.

We aim for all pupils to: become fluent in the fundamentals of mathematics so that they develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately; be able to solve problems by applying their mathematics to a variety of problems with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios; reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language; have an appreciation of number and number operations, which enables mental calculations and written procedures to be performed efficiently, fluently and accurately to be successful in mathematics.

Implementation:

Across the Arun Villages Federation, teachers plan maths lessons following the White Rose Maths Scheme of work. Maths is taught daily as a discrete lesson. The use and secure understanding of maths knowledge and skills are also threaded through other areas of the curriculum in order to provide relevant opportunities to use and apply. Children learn using a range of resources, which support a concrete, pictorial and abstract approach guiding them through their understanding of mathematical processes. Children learn in differentiated small group and mixed ability whole class lessons. Their progress in maths is carefully tracked through a range of assessment strategies to ensure teachers identify where children require support or challenge to assist their progress. Timely intervention is provided by the class teacher or support staff to address any misconceptions or gaps in understanding to enable children to confidently progress towards their next lesson. More confident mathematicians are challenged to show their mastery of maths concepts through investigations and problem solving tasks. We use and select from a range of schemes of work including White Rose, Nrich Maths and My Maths and use the Bar Modelling technique to encourage understanding of concrete and pictorial problems solving methods which further support the abstract understanding. Resources, such as Numicon, are carefully selected to enable early understanding within maths and as a tool for intervention work.

Children secure key number facts through our programme of mental maths challenges (including times tables awards/certificates and Times Tables Rock Stars competitions) progressing through levels so that number bonds and times tables facts are fluently recalled and applied. Children are motivated by the opportunity for recognition both in school and at home for successes along their maths learning journey.

By engaging children in whole school challenges we maintain a high profile for the teaching and learning of maths. Through cross-curricular practical activities we make maths relevant to children's lived experiences.

Impact:

Across the Arun Villages Federation children confidently use a range of strategies and resources when tackling maths activities. They make connections and apply mathematical knowledge both within maths lessons and across the curriculum. Children are confident when talking about their maths learning and engage enthusiastically in maths activities—our children enjoy maths.

Maths Progression Map – Whole School

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
Substantive Knowledge	Step 1 Match objects	Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward	Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number	Count in multiples of 6, 7, 9, 25 and 1,000	Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit	Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit	
	Step 2 Match pictures and objects	Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens	Recognise the place value of each digit in a two-digit number (tens, ones)	Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)	Find 1,000 more or less than a given number count backwards through 0 to include negative numbers	Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000	Round any whole number to a required degree of accuracy	
	Step 3 Identify a set	Given a number, identify one more and one less	Identify, represent and estimate numbers using different representations, including the number line	Compare and order numbers up to 1000	Compare and order numbers up to 1000	Recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s)	Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero	Use negative numbers in context, and calculate intervals across zero
	Step 4 Sort objects to a type	Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more	Compare and order numbers from 0 up to 100; use and = signs	Identify, represent and estimate numbers using different representations	Identify, represent and estimate numbers using different representations	Order and compare numbers beyond 1,000 identify, represent and estimate numbers using different representations	Solve number and practical problems that involve all of the above through zero	Solve number and practical problems that involve all of the above
	Step 5 Explore sorting techniques	Read and write numbers to at least 100 in numerals and in words	Read and write numbers to at least 100 in numerals and in words	Read and write numbers up to 1000 in numerals and in words	Read and write numbers up to 1000 in numerals and in words	Round any number to the nearest 10, 100 or 1,000	Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000	Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
	Step 6 Create sorting rules	Use place value and number facts to solve problems.	Use place value and number facts to solve problems.	Solve number problems involving these ideas:	Solve number problems involving these ideas:	Solve number and practical problems that involve all of the above and with increasingly large positive numbers	Solve number problems and practical problems that involve all of the above	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
	Step 7 Compare amounts	Solve problems with addition and subtraction: Using concrete objects and pictorial	Solve problems with addition and subtraction: Using concrete objects and pictorial	Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens;	Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens;	Read Roman numerals to 100 (I to C) and know that over time, the	Read Roman numerals to 1000 (M) and	

Step 1 Compare size	than, less than (fewer), most, least	representations, including those involving numbers, quantities and measures	a three-digit number and hundreds	numeral system changed to include the concept of 0 and place value	recognise years written in Roman numerals	number remainders, fractions, or by rounding, as appropriate for the context
Step 2 Compare mass	Read and write numbers from 1 to 20 in numerals and words.	Applying their increasing knowledge of mental and written methods	Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	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
Step 3 Compare capacity	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	Estimate the answer to a calculation and use inverse operations to check answers	Estimate and use inverse operations to check answers to a calculation	Add and subtract numbers mentally with increasingly large numbers	Perform mental calculations, including with mixed operations and large numbers
Step 4 Explore simple patterns	Represent and use number bonds and related subtraction facts within 20	Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers.	Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	Identify common factors, common multiples and prime numbers
Step 5 Copy and continue simple patterns	Add and subtract one-digit and two-digit numbers to 20, including zero	Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot	Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables	Recall multiplication and division facts for multiplication tables up to 12×12	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	Use their knowledge of the order of operations to carry out calculations involving the four operations
Step 6 Create simple patterns	Solve one-step problems that involve addition and subtraction,		Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for:	Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1;	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers	Solve addition and subtraction multi-step problems in contexts, deciding which operations and

	<p>Step 1 Find 1, 2 and 3</p> <p>Step 2 Subitise 1, 2 and 3</p> <p>Step 3 Represent 1, 2 and 3</p> <p>Step 4 1 more</p> <p>Step 5 1 less</p> <p>Step 6 Composition of 1, 2 and 3</p>	<p>using concrete objects and pictorial representations, and missing number problems such as $7 = - 9$.</p> <p>Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</p> <p>Recognise, find and name a half as one of two equal parts of an object, shape or quantity</p> <p>Recognise, find and name a quarter as one of four equal parts of an</p>	<p>Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.</p> <p>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</p> <p>Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals ($=$) signs</p> <p>Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot solve problems involving multiplication and division, using materials, arrays, repeated addition, mental</p>	<p>two-digit numbers times one-digit numbers, using mental and progressing to formal written methods</p> <p>Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects</p> <p>Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 1</p> <p>Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</p> <p>Recognise and use fractions as numbers: unit fractions and non-</p>	<p>multiplying together 3 numbers</p> <p>Recognise and use factor pairs and commutativity in mental calculations</p> <p>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout</p> <p>Solve problems involving multiplying and adding, including using the distributive law to multiply two-digit numbers by 1 digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects</p> <p>Recognise and show, using diagrams, families of common equivalent fractions</p> <p>Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10</p>	<p>Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers</p> <p>Establish whether a number up to 100 is prime and recall prime numbers up to 19</p> <p>Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers</p> <p>Multiply and divide numbers mentally drawing upon known facts</p> <p>Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context</p> <p>Multiply and divide whole numbers and those involving</p>	<p>methods to use and why</p> <p>Solve problems involving addition, subtraction, multiplication and division</p> <p>Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy</p> <p>Use common factors to simplify fractions</p> <p>Use common multiples to express fractions in the same denomination</p> <p>Compare and order fractions, including fractions > 1</p> <p>Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions</p> <p>Multiply simple pairs of proper fractions,</p>
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	<p>Step 1 Identify and name circles and triangles</p> <p>Step 2 Compare circles and triangles</p> <p>Step 3 Shapes in the environment</p> <p>Step 4 Describe position</p>	<p>object, shape or quantity.</p> <p>Compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]</p> <p>mass/weight [for example, heavy/light, heavier than, lighter than]</p> <p>capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]</p> <p>time [for example, quicker, slower, earlier, later]</p> <p>Measure and begin to record the following:</p>	<p>methods, and multiplication and division facts, including problems in contexts</p> <p>Recognise, find, name and write fractions $\frac{3}{1}$, $\frac{4}{1}$, $\frac{4}{2}$ and $\frac{4}{3}$ of a length, shape, set of objects or quantity write simple fractions for example, $\frac{2}{1}$ of $\frac{6}{6} = \frac{3}{3}$ and recognise the equivalence of $\frac{4}{2}$ and $\frac{2}{1}$</p> <p>Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$</p> <p>Recognise and use symbols for pounds (£) and pence (p); combine</p>	<p>unit fractions with small denominators</p> <p>Recognise and show, using diagrams, equivalent fractions with small denominators</p> <p>Add and subtract fractions with the same denominator within one whole [for example, $\frac{7}{5} + \frac{1}{5} = \frac{8}{5}$]</p> <p>Compare and order unit fractions, and fractions with the same denominators</p> <p>Solve problems that involve all of the above</p> <p>Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</p> <p>Measure the perimeter of simple 2-D shapes</p> <p>Add and subtract amounts of money to give change, using both £ and p in practical contexts</p>	<p>Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number</p> <p>Add and subtract fractions with the same denominator recognise and write decimal equivalents of any number of tenths or hundreds recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$</p> <p>Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths</p> <p>Round decimals with 1 decimal place to the nearest whole number</p> <p>Compare numbers with the same number of decimal places up to 2 decimal places</p>	<p>decimals by 10, 100 and 1000</p> <p>Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)</p> <p>Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes</p> <p>Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</p> <p>Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</p> <p>Compare and order fractions whose denominators are all</p>	<p>writing the answer in its simplest form</p> <p>Divide proper fractions by whole numbers</p> <p>Associate a fraction with division and calculate decimal fraction equivalents</p> <p>Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places</p> <p>Multiply one-digit numbers with up to two decimal places by whole numbers</p> <p>Use written division methods in cases where the answer has up to two decimal places</p> <p>Solve problems which require answers to be rounded to specified degrees of accuracy</p> <p>Recall and use equivalences between</p>
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<p>Step 1 Find 4 and 5</p> <p>Step 2 Subitise 4 and 5</p> <p>Step 3 Represent 4 and 5</p> <p>Step 4 1 more</p> <p>Step 5 1 less</p> <p>Step 6 Composition of 4 and 5</p> <p>Step 7 Composition of 1–5</p>	<p>lengths and heights, mass/weight, capacity and volume, time (hours, minutes, seconds)</p> <p>Recognise and know the value of different denominations of coins and notes</p> <p>Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]</p> <p>Recognise and use language relating to dates, including days of the week, weeks, months and years</p>	<p>amounts to make a particular value find different combinations of coins that equal the same amounts of money solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</p> <p>Compare and sequence intervals of time tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times</p> <p>Know the number of minutes in an hour and the number of hours in a day</p> <p>Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</p> <p>Identify and describe the properties of 3-D shapes, including the</p>	<p>Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</p> <p>Estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours</p> <p>Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight</p> <p>Know the number of seconds in a minute and the number of days in each month, year and leap year</p> <p>Compare durations of events [for example to calculate the time taken by particular events or tasks]</p> <p>Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</p>	<p>Solve simple measure and money problems involving fractions and decimals to 2 decimal places</p> <p>Convert between different units of measure [for example, kilometre to metre; hour to minute]</p> <p>Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</p> <p>Find the area of rectilinear shapes by counting squares</p> <p>Estimate, compare and calculate different measures, including money in pounds and pence</p> <p>Read, write and convert time between analogue and digital 12- and 24-hour clocks</p> <p>Solve problems involving converting from hours to minutes, minutes to</p>	<p>multiples of the same number</p> <p>Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number</p> <p>Add and subtract fractions with the same denominator and denominators that are multiples of the same number</p> <p>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</p> <p>Read and write decimal numbers as fractions</p> <p>Recognise and use thousandths and relate</p>	<p>simple fractions, decimals and percentages, including in different contexts</p> <p>Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts</p> <p>Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison</p> <p>Solve problems involving similar shapes where the scale factor is known or can be found</p> <p>Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. Use simple formulae</p>
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	<p>Step 1 Identify and name shapes with 4 sides</p> <p>Step 2 Combine shapes with 4 sides</p> <p>Step 3 Shapes in the environment</p> <p>Step 4 My day and night</p>	<p>Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times</p> <p>Recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles]</p> <p>3-D shapes [for example, cuboids (including cubes), pyramids and spheres].</p> <p>Describe position, direction and movement, including whole, half, quarter</p>	<p>number of edges, vertices and faces identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] compare and sort common 2-D and 3-D shapes and everyday objects</p> <p>Interpret and construct simple pictograms, tally charts, block diagrams and simple tables ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</p> <p>Ask and answer questions about totalling and comparing categorical data.</p>	<p>Measure the perimeter of simple 2-D shapes</p>	<p>seconds, years to months, weeks to days</p> <p>Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</p> <p>Identify acute and obtuse angles and compare and order angles up to 2 right angles by size</p> <p>Identify lines of symmetry in 2-D shapes presented in different orientations</p> <p>Complete a simple symmetric figure with respect to a specific line of symmetry</p> <p>Describe positions on a 2-D grid as coordinates in the first quadrant</p> <p>Describe movements between positions as translations of a given unit to the left/right and up/down</p>	<p>them to tenths, hundredths and decimal equivalents</p> <p>Round decimals with two decimal places to the nearest whole number and to one decimal place</p> <p>Read, write, order and compare numbers with up to three decimal places</p> <p>Solve problems involving number up to three decimal places</p> <p>Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal</p> <p>Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{3}{4}$ and those fractions with a denominator of a multiple of 10 or 25</p>	<p>Generate and describe linear number sequences</p> <p>Express missing number problems algebraically</p> <p>Find pairs of numbers that satisfy an equation with two unknowns</p> <p>Enumerate possibilities of combinations of two variables</p> <p>Pupils should be introduced to the use of symbols and letters to represent variables and unknowns in mathematical situations that they already understand, such as: missing numbers, lengths, coordinates and angles, formulae in mathematics and science, equivalent expressions (for example, $a + b = b + a$), generalisations of number patterns, number puzzles (for example, what two</p>
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	<p>Step 1 Introduce zero</p> <p>Step 2 Find 0 to 5</p> <p>Step 3 Subitise 0 to 5</p> <p>Step 4 Represent 0 to 5</p> <p>Step 5 1 more</p> <p>Step 6 1 less</p> <p>Step 7 Composition</p> <p>Step 8 Conceptual subitising to 5</p>	<p>and three quarter turns.</p>			<p>Plot specified points and draw sides to complete a given polygon</p> <p>Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs</p> <p>Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs</p>	<p>Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</p> <p>Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints</p> <p>Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</p> <p>Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes Estimate volume [for example, using 1 cm³ blocks to build cuboids</p>	<p>numbers can add up to)</p> <p>Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</p> <p>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</p> <p>Convert between miles and kilometres</p> <p>Recognise that shapes with the same areas can have different perimeters and vice versa Recognise when it is possible to use</p>
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	<p>Step 1 Compare mass</p> <p>Step 2 Find a balance</p> <p>Step 3 Explore capacity</p> <p>Step 4 Compare capacity</p>					<p>(including cubes)] and capacity [for example, using water]</p> <p>Solve problems involving converting between units of time</p> <p>Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling</p> <p>Identify 3-D shapes, including cubes and other cuboids, from 2-D representations</p> <p>Know angles are measured in degrees</p> <p>Estimate and compare acute, obtuse and reflex angles</p> <p>Draw given angles, and measure them in degrees (o)</p> <p>Identify: angles at a point and one whole turn (total 360°)</p>	<p>formulae for area and volume of shapes</p> <p>Calculate the area of parallelograms and triangles</p> <p>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 [for example, mm³ and km³]</p> <p>Draw 2-D shapes using given dimensions and angles</p> <p>Recognise, describe and build simple 3-D shapes, including making nets</p> <p>Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons Illustrate and name parts of circles,</p>
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	<p>Step 1 Find 6, 7 and 8</p> <p>Step 2 Represent 6, 7 and 8</p> <p>Step 3 1 more</p> <p>Step 4 1 less</p> <p>Step 5 Composition of 6, 7 and 8</p> <p>Step 6 Make pairs – odd and even</p> <p>Step 7 Double to 8 (find a double)</p> <p>Step 8 Double to 8 (make a double)</p>					<p>angles at a point on a straight line and $1/2$ a turn (total 180°) other multiples of 90°</p> <p>Use the properties of rectangles to deduce related facts and find missing lengths and angles</p> <p>Distinguish between regular and irregular polygons based on reasoning about equal sides and angles</p> <p>Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed</p> <p>Solve comparison, sum and difference problems using information presented in a line graph</p> <p>Complete, read and interpret information in tables, including timetables</p>	<p>including radius, diameter and circumference and know that the diameter is twice the radius</p> <p>Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</p> <p>Describe positions on the full coordinate grid (all four quadrants)</p> <p>Draw and translate simple shapes on the coordinate plane, and reflect them in the axes</p> <p>Interpret and construct pie charts and line graphs and use these to solve problems</p> <p>Calculate and interpret the mean as an average.</p> <p>Interpret and construct pie charts and line graphs and use these to solve problems</p>
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							Calculate and interpret the mean as an average
Key Vocabulary	Number and Place Value Number zero number one, two, three ... to twenty and beyond teens numbers, eleven, twelve ... twenty none how many ...? count, count (up) to, count on (from, to), count back (from, to) count in ones, twos, fives, tens is the same as more, less odd, even few pattern pair Place value	Number Zero, one, two, three to twenty, and beyond None Count (on/up/to/from/down) Before, after More, less, many, Number bonds, number line Add, more, plus, make, sum, total, altogether Inverse Double Half, halve Odd, even Count in twos, threes, fives Count in tens (forwards from/backwards from) How many times? Lots of, groups of Always, never, often,	Number to one hundred Hundreds Partition, recombine Hundred more/less Quarter past/to m/km, g/kg, ml/l Temperature (degrees) Rotation Clockwise, Anticlockwise Straight line Ninety degree turn, right angle Size Bigger, larger, smaller Symmetrical, line of symmetry Fold Match Mirror line, reflection Pattern, repeating pattern Three quarters, one third, a third Equivalence, equivalent Count, tally, sort Vote Graph, block graph, pictogram Represent Group, set, list, table Label, title	Numbers to 1000 Ascending Descending 10 or 100 more 10 or 100 less Hundreds Column addition Column subtraction Exchange Estimate Exchange Mathematical statements Derived facts Product Multiples Factors Scale up Tenths Compare and order Tenths Millimetre mm Perimeter Analogue Roman numerals 12-hour clock 24-hour clock Am/pm Noon Midnight Leap year Digital Right angle triangle Heptagon	Negative numbers/integers Round Roman numerals 1000 more 1000 less Thousands Round 4-digit number Methods Factor pairs Distributive law Remainders Decimal Equivalent Equivalence Convert Proper fractions Improper fractions Decimals point Mixed numbers Kilometre km Rectilinear shape Area Irregular shapes Convert Isosceles Equilateral Scalene Trapezium Rhombus Parallelogram Kite Geometric shapes	Ten thousands One hundred thousands Powers of Integer Efficient written Method Prime numbers Square numbers Cube numbers Short division Dividend Divisor Quotient Operations Formal written Method Percent % Percentage Complements Decimal notation Scaling Metric units Imperial units Inches Compound shape Volume Cubic centimetres Pounds Pints Angles of a straight line Angles around a point	Numbers to ten million Millions Ten millions Order of operations Long division Order of operations Common factors Common multiples Simplify Degree of accuracy Relative size Missing values Integer multiplication Percentages Scale factor Unequal sharing and grouping Formulae Linear number sequences Algebraically Equation Unk nouns Combinations Variables Substitute Symbol Known variables Conversion Miles Formulae

<p>ones tens digit the same number as, as many as more, larger, bigger, greater fewer, smaller, less fewest, smallest, least most, biggest, largest, greatest one more, ten more one less, ten less compare order size frst, second, third... twentieth last, last but one before, after next between Estimating guess how many ...?</p>	<p>sometimes, usually Once, twice First, second, third, etc. Estimate, close to, Position Over, under, underneath, above, below, top, bottom, side On, in, outside, inside Around, in front, behind Group, sort Cube, cuboids, pyramid, sphere, cone, cylinder, circle, triangle, square Shape Flat, curved, straight, Whole Half a length, quantity, set of objects, shape Equal parts, four equal parts One half, Cost Count, work out, answer, check same</p>	<p>Most popular, most common, least popular, least common Predict Describe the pattern, describe the rule Find, find all, find different Investigate</p>	<p>Polygon Properties Prism Horizontal Vertical Perpendicular lines Parallel lines Orientations Angles Acute Obtuse Turn Right angles Half turn Three quarters of a turn Greater than a right angle Less than a right angle Horizontal lines Vertical lines Perpendicular lines Parallel lines Reflex angles Degrees Table Bar chart Carroll diagram Venn diagram Axis Diagram Frequency table</p>	<p>Quadrilaterals Regular polygon Irregular polygon Co-ordinates First quadrant Grid Translation Plot Polygon X axis /Y Axis Perimeter and area Time graph Discrete data Continuous data Line graph Comparison problem Calculate Interpret</p>	<p>Vertically opposite Missing angles Reflection Timetable Two -way tables</p>	<p>Parallelograms Triangles Feet Cubic metre Cubic millimetre Cubic kilometre Gallons Stones Ounces Radius Diameter Circumference Dimensions Four quadrants Co-ordinate plane Pie chart Mean Construct</p>
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	<p>estimate nearly close to about the same as just over, just under too many, too few enough, not enough Addition and Subtraction add, more, and make, sum, total altogether double one more, two more ... ten more how many more to make ...? how many more is ... than ...? how much more is ...? take away how many are left/left over? how many have gone?</p>	<p>number(s)/diffe rent number(s)/missi ng number(s) Number facts, number line, number track, number square, number cards few, fewer, least, fewest, smallest, greater, lesser Equal to, the same as Odd, even Pair Units, ones, tens Ten more/less Digit Numeral Figure(s) Compare Size Value Between, halfway between Above, below Equals, is the same as (including equals sign) Difference between</p>					
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	<p>one less, two less, ten less ... how many fewer is ... than ...? how much less is ...? difference between Multiplication and Division sharing doubling halving number patterns Fractions parts of a whole half quarter Measurement Measurement measure size compare guess, estimate enough, not enough too much, too little too many, too few</p>	<p>How many more to make...? How many more is...than...? How much more is...? Subtract, take away, minus How many fewer is...than...? How much less is...? Once, twice, three times, five times Multiple of times, multiply, multiply by Repeated addition Array, row, column Commutative Double, halve Share, share equally Group in pairs, threes, etc. Equal groups of Divide, divided by, left, left over about the same as, just over, just under</p>					
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	<p>nearly, close to, about the same as just over, just under Length metre length, height, width, depth long, short, tall high, low wide, narrow thick, thin longer, shorter, taller, higher ... and so on longest, shortest, tallest, highest ... and so on far, near, close Time time days of the week, Monday, Tuesday ... day, week birthday, holiday</p>	<p>Too many, too few, not enough, enough Length, width, height, depth Long, longer, longest, short, shorter shortest, tall, taller, tallest, high, higher, highest Low, wide, narrow, deep, Front, back Before, after Beside, next to, opposite Apart Between, middle, edge, centre Corner Direction Left, right, up, down, forwards, backwards, sideways Across Close, far, near Along, round Hollow, solid Corner (point, pointed) Face, side, edge</p>					
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	<p>morning, afternoon, evening, night bedtime, dinner time, playtime today, yesterday, tomorrow before, after next, last now, soon, early, late quick, quicker, quickest, quickly slow, slower, slowest, slowly old, older, oldest new, newer, newest takes longer, takes less time hour, o'clock clock, watch, hands Weight weigh, weighs, balances heavy, light</p>	<p>Make, build, draw two halves A quarter, two quarters Abacus, counters, cubes, blocks, rods, die, dice, dominoes, pegs, peg board Same way, different way, best way, another way In order, in a different order Not all, shallow, thick, thin Far, near, close Metre, ruler, metre stick How much?, How many? Money, coin, penny, pence, pound, price, cost, buy, sell, spend, spent, pay, change, dear(er), costs more, costs less, cheaper, costs the same as through</p>					
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	<p>heavier than, lighter than heaviest, lightest scales Capacity and Volume full empty half full holds container Money money coin penny, pence, pound price, cost buy, sell spend, spent pay Geometry : Properties of Shape Shape shape, pattern flat curved, straight round hollow, solid sort make, build, draw size</p>	<p>To, from, towards, away from Movement Slide, roll, turn, whole turn, half turn Stretch, bend</p>					
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<p>bigger, larger, smaller symmetrical pattern, repeating pattern match 2-D Shape corner, side rectangle (including square) circle triangle 3-D Shape face, edge, vertex, vertices cube pyramid sphere cone Statistics count, sort group, set list Position and Direction position over, under above, below top, bottom, side on, in outside, inside</p>						
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<p>around in front, behind front, back beside, next to opposite apart between middle, edge corner direction left, right up, down forwards, backwards, sideways across next to, close, near, far along through to, from, towards, away from movement slide roll turn stretch, bend whole turn, half turn General pattern puzzle</p>						
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	what could we try next? how did you work it out? recognise describe draw compare sort						
Assessment	*Please refer to White Rose Maths end of unit/end of termly assessments @ https://whiteroseeducation.com/						