

CURRICULUM DESIGN for MATHS

Maths INTENT

When teaching mathematics at Mosaic Jewish Primary School, we intend to provide a curriculum, which caters for the needs of all individuals and sets them up with the necessary skills and knowledge for them to become successful in their future adventures. We aim to support them in understanding the links between Maths and other areas of learning and the wider world. We incorporate sustained levels of challenge through varied and high quality activities with a focus on fluency, reasoning and problem solving.

Whilst we teach Maths in progressive distinct domains (units of work), we recognise that Maths is an interconnected subject. Therefore, we encourage children to make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. Children can also apply their mathematical knowledge across the curriculum, and particularly in Science, Geography or other subjects where relevant.

Maths IMPLEMENTATION

Maths is timetabled daily in all classes. Our Maths planning is based on a bespoke curriculum based on the National Curriculum, which incorporates some aspects of planning from White Rose, NCETM and NRich. The use of these schemes complement each other to meet the needs of our learners, as well as ensuring coverage and progression across the curriculum.

EYFS

In Early Years, Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces, and measure. Maths is taught daily, mostly practical. The week is split into two topics - number/number patterns, with a mini maths review taking place at the end of the week for 15-20 minutes. All evidence is recorded on Seesaw. From Summer 1 books will be used to record the maths across all of reception

Implementation of maths skills is done in the following ways:

High quality resources are used in conjunction with such as White Rose to support, stretch and challenge all children within the classroom. In addition, the school's calculation policy is used to ensure a coherent approach to teaching the operations across our school.

Our curriculum builds on the concrete, pictorial, abstract approach. By using all three, the children can explore and demonstrate their mathematical learning. Together, these elements help to cement knowledge so children truly understand what they have learnt.

When introduced to a new concept for the first time, children are encouraged to physically represent mathematical concepts. Objects and pictures are used to demonstrate and visualise abstract ideas, alongside numbers and symbols.

Concrete – children have the opportunity to use concrete objects and manipulatives to help them understand and explain what they are doing.

Pictorial – children then build on this concrete approach by using these pictorial representations, which can then be used to reason and solve problems.

Abstract – with the foundations firmly laid by using the concrete and pictorial methods the children can move onto an abstract approach using numbers and key concepts with confidence.

A mathematical concept or skill has been mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations.

- Children demonstrate quick recall of facts and procedures. This includes the recollection of the times tables.
- The flexibility and fluidity to move between different contexts and representations of mathematics. - The ability to recognise relationships and make connections in mathematics.
- Children show our value of resilience when tackling new mathematical problems.
- Children show a high level of pride in the presentation and understanding of the work.

Assessment through our teaching means that we continuously monitor pupils' progress against expected attainment for their age, making formative assessment notes where appropriate and using these to inform our teaching. Summative assessments are completed at the end of each half term; their results form discussions in termly Pupil Progress Meetings and update our summative school tracker. The main purpose of all assessment is to always ensure that we are providing excellent provision for every child.

Maths IMPACT

By the end of Key Stage 2, we aim for children to be fluent in the fundamentals of mathematics with a conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

They should have the skills to solve problems by applying their mathematics to a variety of situations with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios.

Children will be able to reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	Getting to know you Just like me	It's me 1, 2, 3 Light & dark	Alive in 5! Growing 6, 7, 8	Building 9 & 10 Consolidation	To 20 and beyond First, then, now	Find my pattern On the move
Year 1	Place Value Within 10 Addition and subtraction Within 10	Addition and subtraction Within 10 Shape	Place Value (within 20) Addition and subtraction Within 20	Place Value Within 50 Length and Height Mass and Volume	Multiplication & Division Fractions Geometry: Position & Direction	Place Value within 100 Measurement: money Measurement: time
Year 2	Place Value Addition and Subtraction	Addition and Subtraction Shape	Money Multiplication & Division	Length & Height Mass Capacity and Temperature	Fractions Time	Statistics Position & Direction
Year 3	Place Value Addition and Subtraction	Multiplication & Division	Multiplication & Division Length & Perimeter	Fractions Mass & Capacity	Fractions Money Time	Time Shape Statistics
Year 4	Place Value Addition and Subtraction	Area Multiplication and Division	Multiplication & Division Length & Perimeter	Fractions Decimals	Decimals Money Time	Statistics Properties of Shape Position & Direction
Year 5	Place Value Addition and Subtraction Statistics	Multiplication & Division Fractions	Multiplication & Division Fractions	Decimals & Percentages Perimeter & Area	Shape Position & Direction Decimals	Negative Numbers Converting Units Volume
Year 6	Place Value Addition and Subtraction Multiplication and Division	Fractions Fractions Decimals Percentages	Position & Direction Algebra Conversion Area Perimeter Volume	Ratio Statistics Geometry: shape	Geometry: shape Consolidation	Investigations STEM project Financial Literacy
End Points	Key Stage 1: - to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value.		Lower Key Stage 2: - to become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value.		Upper Key Stage 2: - to extend the understanding of the number system and place value to include larger integers.	

<ul style="list-style-type: none"> - to work with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools]. - to develop the ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. - to use a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. - to read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1. <p>By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.</p>	<ul style="list-style-type: none"> - to develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. - to develop the ability to solve a range of problems, including with simple fractions and decimal place value. - to draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. - to use measuring instruments with accuracy and make connections between measure and number. <p>By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.</p>	<ul style="list-style-type: none"> - to develop connections made between multiplication and division with fractions, decimals, percentages and ratio. - to develop the ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems. - to learn efficient written and mental methods of calculation. - to learn the language of algebra as a means for solving a variety of problems. - to use measures to consolidate and extend knowledge developed in number. - to classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them. - to read, spell and pronounce mathematical vocabulary correctly. <p>By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.</p>
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Progression Map

	EYFS – Reception	KS1 – Year 1	KS1 – Year 2	KS2 – Year 3	KS2 – Year 4	KS2 – Year 5	KS2 – Year 6
PLACE VALUE							
Place Value: count	<ul style="list-style-type: none"> • count to 20. • count up to five objects in different arrangements by touching each object as they count, saying the names in a stable order. • say the total number in the group, 	<ul style="list-style-type: none"> • count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • Count numbers to 100 in numerals; count in multiples of twos, fives and tens 	<ul style="list-style-type: none"> • count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward 	<ul style="list-style-type: none"> • count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number 	<ul style="list-style-type: none"> • count in multiples of 6, 7, 9, 25 and 1000 • count backwards through zero to include negative numbers 	<ul style="list-style-type: none"> • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • count forwards and backwards with positive and negative whole numbers, including through zero 	
Place Value: represent	<ul style="list-style-type: none"> • understanding that the final number they have said is the total in the group. • subitise numbers up to five and can also count out up to five objects from a larger set. • apply the counting principles when counting. 	<ul style="list-style-type: none"> • identify and represent numbers using objects and pictorial representations • read and write numbers to 100 in numerals • read and write numbers from 1 to 20 in numerals and words 	<ul style="list-style-type: none"> • read and write numbers to at least 100 in numerals and in words • identify, represent and estimate numbers using different representations, including the number line 	<ul style="list-style-type: none"> • identify, represent and estimate numbers using different representations • read and write numbers up to 1000 in numerals and in words 	<ul style="list-style-type: none"> • identify, represent and estimate numbers using different representations • read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value 	<ul style="list-style-type: none"> • read, write, (order and compare) numbers to at least 1 000 000 and determine the value of each digit • read Roman numerals to 1000 (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
Place Value: Use and compare	<ul style="list-style-type: none"> • count out up to five objects from a larger group. • represent numbers 1-20 in different ways • compare groups to 10. • compare quantities of identical objects. 	<ul style="list-style-type: none"> • given a number, identify one more and one less 	<ul style="list-style-type: none"> • recognise the place value of each digit in a two-digit number (tens, ones) • compare and order numbers from 0 up to 100; use and = signs 	<ul style="list-style-type: none"> • recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • compare and order numbers up to 1000 	<ul style="list-style-type: none"> • find 1000 more or less than a given number • recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) • order and compare numbers beyond 1000 	<ul style="list-style-type: none"> • (read, write) order and compare numbers to at least 1 000 000 and determine the value of each digit 	<ul style="list-style-type: none"> • (read, write), order and compare numbers up to 10 000 000 and determine the value of each digit

Place Value: Problems and rounding	<ul style="list-style-type: none"> • compare quantities of non-identical objects. 		<ul style="list-style-type: none"> • use place value and number facts to solve problems 	<ul style="list-style-type: none"> • solve number problems and practical problems involving these ideas 	<ul style="list-style-type: none"> • round any number to the nearest 10, 100 or 1000 • solve number and practical problems that involve all of the above and with increasingly large positive numbers 	<ul style="list-style-type: none"> • interpret negative numbers in context • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • solve number problems and practical problems that involve all of the above 	<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 all of the above
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FOUR OPERATIONS

Addition & Subtraction: calculations	<ul style="list-style-type: none"> • sorts into groups. • finds one more and one less within 5. • combines two groups (up to 10) to find the whole. • finds number bonds to 10 using objects or diagrams. • add by counting on. • take away by counting back. • finds number bonds to 5. 	<ul style="list-style-type: none"> • add and subtract one-digit and twodigit numbers to 20, including zero 	<ul style="list-style-type: none"> • add and subtract numbers using concrete objects, pictorial representations, and mentally, including: <ul style="list-style-type: none"> ➤ a two-digit number and ones ➤ a two-digit number and tens ➤ two two-digit numbers ➤ adding three onedigit numbers 	<ul style="list-style-type: none"> • add and subtract numbers mentally, including: <ul style="list-style-type: none"> ➤ a three-digit number and ones ➤ a three-digit number and tens ➤ a three-digit number and hundreds • add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction 	<ul style="list-style-type: none"> • add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate 	<ul style="list-style-type: none"> • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers 	<ul style="list-style-type: none"> • perform mental calculations, including with mixed operations and large numbers • use their knowledge of the order of operations to carry out calculations involving the four operations
Addition & Subtraction: problems		<ul style="list-style-type: none"> • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$ 	<ul style="list-style-type: none"> • solve problems with addition and subtraction: <ul style="list-style-type: none"> ➤ using concrete objects and pictorial representations, including those involving numbers, quantities and measures ➤ applying their increasing knowledge of mental and written methods 	<ul style="list-style-type: none"> • solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction 	<ul style="list-style-type: none"> • solve addition and subtraction twostep problems in contexts, deciding which operations and methods to use and why 	<ul style="list-style-type: none"> • solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	<ul style="list-style-type: none"> • solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why

Multiplication & Division: Recall/Use	<ul style="list-style-type: none"> • finds doubles • halves and shares • identifies odds and evens. • solve problems including doubling and halving. 		<ul style="list-style-type: none"> • recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers • show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot 	<ul style="list-style-type: none"> • recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables 	<ul style="list-style-type: none"> • recall multiplication and division facts for multiplication tables up to 12×12 • use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers • recognise and use factor pairs and commutativity in mental calculations 	<ul style="list-style-type: none"> • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 • recognise and use square numbers and cube numbers, and the notation for squared ² and cubed ³ 	<ul style="list-style-type: none"> • identify common factors, common multiples and prime numbers • use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
Multiplication & Division: calculations			<ul style="list-style-type: none"> • calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs 	<ul style="list-style-type: none"> • write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods 	<ul style="list-style-type: none"> multiply two-digit and three-digit numbers by a one-digit number using formal written layout 	<ul style="list-style-type: none"> • 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 • multiply and divide numbers mentally drawing upon known facts • 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 • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 	<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 • 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 <ul style="list-style-type: none"> perform mental calculations, including with mixed operations and large numbers
Multiplication & Division: problems		<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects 	<ul style="list-style-type: none"> solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates 	<ul style="list-style-type: none"> solve problems involving addition, subtraction, multiplication and division
Multiplication & Division: combined						<ul style="list-style-type: none"> solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	<ul style="list-style-type: none"> use their knowledge of the order of operations to carry out calculations involving the four operations
FRACTIONS, DECIMALS & PERCENTAGES							
Fractions: recognize and write		<ul style="list-style-type: none"> recognise, find and name a half as one of two equal parts of an object, shape or quantity recognise, find and name a quarter as one of four equal parts of an object, shape or quantity 	<ul style="list-style-type: none"> recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity 	<ul style="list-style-type: none"> 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 10 recognise, find and write fractions of a discrete set of objects: unit fractions and nonunit fractions with small denominators 	<ul style="list-style-type: none"> count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. 	<ul style="list-style-type: none"> 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 form to the other and write mathematical statements > 1 as a mixed number 	

				<ul style="list-style-type: none"> recognise and use fractions as numbers: unit fractions and nonunit fractions with small denominators 		<p>[for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1$]</p> $\frac{1}{5}$	
Fractions: compare			<ul style="list-style-type: none"> recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ 	<ul style="list-style-type: none"> recognise and show, using diagrams, equivalent fractions with small denominators compare and order unit fractions, and fractions with the same denominators 	<ul style="list-style-type: none"> recognise and show, using diagrams, families of common equivalent fractions 	<ul style="list-style-type: none"> compare and order fractions whose denominators are all multiples of the same number 	<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
Fractions: calculations			<ul style="list-style-type: none"> write simple fractions for example, $\frac{1}{2}$ of $6 = 3$ 	<ul style="list-style-type: none"> add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$] 	<ul style="list-style-type: none"> add and subtract fractions with the same denominator 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] divide proper fractions by whole numbers [for example $\frac{1}{3} \div 2 = \frac{1}{6}$]
Fractions: solve problems				<ul style="list-style-type: none"> solve problems that involve all of the above 	<ul style="list-style-type: none"> 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 		
Decimals: recognize,					<ul style="list-style-type: none"> recognise and write decimal equivalents of any number of tenths or hundredths 	<ul style="list-style-type: none"> read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] recognise and use 	<ul style="list-style-type: none"> identify the value of each digit in numbers given to three decimal places

<p>write, compare</p>					<ul style="list-style-type: none"> • recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ • round decimals with one decimal place to the nearest whole number • compare numbers with the same number of decimal places up to two decimal places 	<p>thousandths and relate them to tenths, hundredths and decimal equivalents</p> <ul style="list-style-type: none"> • round decimals with two decimal places to the nearest whole number and to one decimal place • read, write, order and compare numbers with up to three decimal places 	
<p>Fractions, decimals, percentages</p>					<ul style="list-style-type: none"> • solve simple measure and money problems involving fractions and decimals to two decimal places 	<ul style="list-style-type: none"> • 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 • solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 or 25 	<ul style="list-style-type: none"> • associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] • recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
<p>RATIO, PROPORTION & ALGEBRA</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 • solve problems involving the calculation/use of percentages for comparison

							<ul style="list-style-type: none"> • solve problems 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"> • solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = \square - 9$ 	<ul style="list-style-type: none"> • recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems 	<ul style="list-style-type: none"> • solve problems, including missing number problems 			<ul style="list-style-type: none"> • use simple formulae • generate and describe linear number sequences • express missing number problems algebraically • find pairs of numbers that satisfy an equation with two unknowns • enumerate possibilities of combinations of two variables

MEASUREMENT

Using measures	<ul style="list-style-type: none"> • Order important times in their day. • use positional language to describe when events happen. • use vocab such as yesterday, today, tomorrow to describe relative events. • measure time e.g. using timers, number of sleeps to an event. • measure length, height, distance 	<ul style="list-style-type: none"> • compare, describe and solve practical problems for: <ul style="list-style-type: none"> ➢ lengths and heights ➢ mass/weight ➢ capacity and volume ➢ time • measure and begin to record the following: <ul style="list-style-type: none"> ➢ lengths and heights ➢ mass/weight ➢ capacity and volume ➢ time (hours, minutes, seconds) 	<ul style="list-style-type: none"> • choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°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 	<ul style="list-style-type: none"> • measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) 	<ul style="list-style-type: none"> • convert between different units of measure [for example, kilometre to metre; hour to minute] • estimate, compare and calculate different measures 	<ul style="list-style-type: none"> • convert between different units of metric measure • understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints • use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling 	<ul style="list-style-type: none"> • solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 d.p. 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 3 d.p. • convert between miles and kilometres
Money		<ul style="list-style-type: none"> • recognise and know the value of different 	<ul style="list-style-type: none"> • recognise and use symbols for pounds (£) 	<ul style="list-style-type: none"> • add and subtract amounts of money to 	<ul style="list-style-type: none"> • estimate, compare and calculate different 	<ul style="list-style-type: none"> • use all four operations to solve problems 	

		<p>denominations of coins and notes</p>	<p>and pence (p); combine amounts to make a particular value</p> <ul style="list-style-type: none"> • 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>give change, using both £ and p in practical contexts</p>	<p>measures, including money in pounds and pence</p>	<p>involving measure [for example, money]</p>	
<p>Time</p>		<ul style="list-style-type: none"> • sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] • recognise and use language relating to dates, including days of the week, weeks, months and years • tell the time to the hour and half past the hour and draw the hands on a clock face to show these times 	<ul style="list-style-type: none"> • 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 • know the number of minutes in an hour and the number of hours in a day 	<ul style="list-style-type: none"> • tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour 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, a.m./p.m., morning, afternoon, noon and midnight • know the number of seconds in a minute and the number of days in each month, year and leap year • compare durations of events [for example to calculate the time taken by particular events or tasks] 	<ul style="list-style-type: none"> • 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; years to months; weeks to days 	<ul style="list-style-type: none"> • solve problems involving converting between units of time 	<ul style="list-style-type: none"> • use, read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa <p>Note – In the WRM schemes, time conversions are covered in Y5; the Y6 block concentrates on metric units.</p>

Perimeter, Area, Volume				<ul style="list-style-type: none"> • measure the perimeter of simple 2-D shapes 	<ul style="list-style-type: none"> • measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • find the area of rectilinear shapes by counting squares 	<ul style="list-style-type: none"> • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • 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 blocks to build cuboids] and capacity [for example, using water] 	<ul style="list-style-type: none"> • recognise that shapes with the same areas can have different perimeters and vice versa • recognise when it is possible to use formulae for area and volume of shapes • calculate the area of parallelograms and triangles • 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
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GEOMETRY

2-D Shapes	<ul style="list-style-type: none"> • hear and begin to use positional language to describe how items are positioned in relation to other items. • represent real places they have visited with drawings, maps, models. • explore similarities and differences between 3D shapes. • sort shapes according to what they notice. 	<ul style="list-style-type: none"> • recognise and name common 2-D shapes [for example, rectangles (including squares), circles and triangles] 	<ul style="list-style-type: none"> • identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line • 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 shapes and everyday objects 	<ul style="list-style-type: none"> • draw 2-D shapes 	<ul style="list-style-type: none"> • compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes • identify lines of symmetry in 2-D shapes presented in different orientations 	<ul style="list-style-type: none"> • distinguish between regular and irregular polygons based on reasoning about equal sides and angles. • use the properties of rectangles to deduce related facts and find missing lengths and angles 	<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 • illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
3-D Shapes	<ul style="list-style-type: none"> • their own 3D shapes in different ways. • See 2D shapes on the flat surface of 3D shapes. • name some common shapes. 	<ul style="list-style-type: none"> • recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] 	<ul style="list-style-type: none"> • recognise and name common 3-D shapes [for example, cuboids (including cubes), pyramids and spheres] 	<ul style="list-style-type: none"> • make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them 		<ul style="list-style-type: none"> • identify 3-D shapes, including cubes and other cuboids, from 2-D representations 	<ul style="list-style-type: none"> • recognise, describe and build simple 3-D shapes, including making nets

	<ul style="list-style-type: none"> compare 2D shapes, saying what is the same, what is different. explore how shapes can be combined to make patterns or new shapes. 		<ul style="list-style-type: none"> compare and sort common 3-D shapes and everyday objects 				
Angles & Lines				<ul style="list-style-type: none"> recognise angles as a property of shape or a description of a turn identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle identify horizontal and vertical lines and pairs of perpendicular and parallel lines 	<ul style="list-style-type: none"> identify acute and obtuse angles and compare and order angles up to two right angles by size identify lines of symmetry in 2-D shapes presented in different orientations complete a simple symmetric figure with respect to a specific line of symmetry 	<ul style="list-style-type: none"> 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 one whole turn (total 360°) angles at a point on a straight line and 1 2 a turn (total 180°) other multiples of 90° 	<ul style="list-style-type: none"> 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
Position & Direction		<ul style="list-style-type: none"> describe position, direction and movement, including whole, half, quarter and three-quarter turns 	<ul style="list-style-type: none"> order and arrange combinations of mathematical objects in patterns and sequences use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns 		<ul style="list-style-type: none"> describe positions on a 2-D grid as coordinates in the first quadrant describe movements between positions as translations of a given unit to the left/right and up/down plot specified points and draw sides to complete a given polygon 	<ul style="list-style-type: none"> 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 	<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

			(clockwise and anticlockwise)				
STATISTICS							
Present & interpret data			<ul style="list-style-type: none"> interpret and construct simple pictograms, tally charts, block diagrams and simple tables 	<ul style="list-style-type: none"> interpret and present data using 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 	<ul style="list-style-type: none"> 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 these to solve problems
Solve statistical problems			<ul style="list-style-type: none"> ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity ask and answer questions about totalling and comparing categorical data 	<ul style="list-style-type: none"> solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> calculate and interpret the mean as an average

