Curriculum Progression for Maths

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INTENT

Maths is an essential focus for everyday life which confirms the importance of a high-quality mathematics education for our pupils. At Frodsham CE, we hope to provide our children with all the core skills necessary to make rich connections across mathematical concepts to develop their fluency, reasoning and problem solving in order to apply their mathematical understanding across the curriculum and to everyday situations in the wider world.

We know that for our pupils to have the best opportunities possible in later life and future employment, they need to be confident and competent in their understanding of the number system. As such, our intention is to deliver a curriculum that is ambitious for all pupils and successfully adapted, designed and developed to maximise the outcomes for all pupils, including those with SEND.

We aim for all our pupils to have a positive view of maths through experiencing and enjoying a progressive curriculum; to become confident mathematicians through developing fluency; mathematical reasoning, and competence in solving increasingly sophisticated problems; to be interested in the patterns and connections in mathematics and to see the power of maths in everyday life.

Our aims of teaching mathematics are to:

- promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion;
- provide opportunities to revisit and apply skills in different contexts;
- develop competence and confidence with numbers and the number system;
- develop the ability to solve problems through decision making and reasoning in a range of contexts;
- develop a practical understanding of the ways in which information is gathered and presented;
- explore features of shape and space, and develop measuring skills in a range of contexts;
- help children to understand the importance of mathematics in everyday life;
- develop the cross-curricular use of mathematics in other subjects.

IMPLEMENTATION

Maths is delivered following the First4Maths curriculum progression though teachers can supplement the lessons with ideas and resources from a wider range of platforms to ensure children's learning is varied and challenging. These include, but are not limited to, White Rose Maths, NRICH, NCETM, Testbase, BEAM, mathsframe and Master the Curriculum.

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Maths should be taught at least 4 times a week with KS1 lessons running to approximately 45-50 minutes and 60 minutes in KS2. 'Rapid retrieval' sessions are conducted at the start of every lesson to support pupils' retention of prior learning. A wide range of age-appropriate resources are available for all pupils in order for teachers to better use models and images to support learning in each area and enable the progression from concrete to pictorial to abstract.

Curriculum progression is based on the First4Maths intent documents which set the curriculum out in blocks enabling children to get to grips with different areas of maths through extended periods of time. The order in which we will teach our units of work enable us to plan coverage of the entire National Curriculum whilst allowing us to prioritise the DfE Ready to Progress statements. Teachers consider the needs of their cohort before determining how many weeks they will spend on each topic. The NCETM Teaching for Mastery Assessment questions are built into units of work to enable teachers to effectively assess children's understanding at a Mastery and Greater Depth level within a unit of work.

Fluency, reasoning and problem-solving skills are embedded within mathematics lessons and are developed consistently over time. By ensuring that children secure their fluency skills before moving on to more complex mathematics we develop children's confidence to tackle a variety of problems either independently or in collaboration with their peers. All children are given the opportunity to reason at their own level using the 5 stages of reasoning, describe, explain, convince, justify and prove.

Teachers implement the schools agreed calculation policies for progression in written and mental calculations. Testbase assessments are administered termly to help teachers to gather an understanding of their pupil's existing and developing knowledge and skills.
Correct mathematical vocabulary is used by all teachers and this is discussed with and explained to children who are then encouraged to use it independently when talking about maths. Key vocabulary is also displayed on working walls along with modelled methods and visual reminders/prompts linked to the current mathematical focus.

NURSERY (Blue focus objectives are related objectives for younger children who have started Nursery in the term after their 2nd birthday)					
Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Cardinality & Counting Accurate and	**Cardinality & Counting** One-to-one	**Cardinality & Counting** One-to-one	**Cardinality & Counting** Begin to recognise	**Cardinality & Counting** Conservation of	**Cardinality & Counting** Accurate and

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consistent verbal counting to 5 Singing songs with number range 1-3 **Measures** Understand and use specific attributes to compare height (taller and shorter rather than big and small) Understand and respond to language of big and small **Spatial Reasoning** Understand and use simple language of position that doesn't vary by viewpoint (in, on, under, next to) Understand and respond to simple language of position in play (in, on) **Shape** Explore rotating and flipping objects to make a match (posting boxes, inset puzzles, jigsaws) Play with Shape sorters	correspondence and cardinality to 3 Subitising 1 and 2 Noticing one and lots **Measures** Understand and use specific attributes to compare length (long, short) Understand and respond to language of bigger and smaller **Spatial Reasoning** Understand and use language of position that can vary by viewpoint (in front, behind) Understand and respond to simple language of direction (up, down) **Shape** Explore construction with 3D shapes – combining shapes in two dimensions Learn to stack blocks in a tower using flat surfaces. Stack then	correspondence and cardinality to 5 Subitising 3 Singing songs with number range 1-5 **Measures** Understand and use specific attributes for width and thickness (wide, narrow, thick, thin) Understand and respond to language of long, tall and short **Spatial Reasoning** Understand and use everyday language of direction (up, down, through, over, under) Understand and respond to simple language of position (in, on, under) **Shape** Explore pattern and picture making with 2D pattern blocks Try to match colours and shapes on very simple shape images.	numerals and match to sets Noticing pairs of objects and beginning to say 2 for this quantity **Measures** Understand and use specific attributes for weight/mass (heavy light, heavier, lighter) Understand and respond to language of heavy and light **Spatial Reasoning** Understand and use language of movement (forwards, backwards, sideways, turn) Understand and respond to language of movement (forwards backwards) **Shape** Begin to notice properties of 3D shape and find shapes that are the same Learn to stack blocks in a tower more	number to 5 with order irrelevance Developing counting like behaviours **Comparison** Compare sets of objects – which has more, fewer – just by looking Notice when a set has considerably more (no need to count) and respond to word more **Measures** Time – sequence of events (first, next, after, before, morning, afternoon, evening, yesterday, tomorrow) Understand and respond to language of now and next/later Make links to regular events in routine e.g. lunchtime **Spatial Reasoning** Discuss routes and the order and location of things seen extending vocab (in between,	consistent verbal counting to 10 Developing counting like behaviours **Composition** Separate a group of three or four objects in different ways Understand and respond to language of enough/not enough **Comparison** Making equal sets Understand and respond to language of the same **Measures** Understand and use specific attributes for capacity (full, empty, part, full) Understand and respond to words linked to capacity like pour, fill, empty and full **Spatial Reasoning** Understand and use language of distance

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and nesting cups – link to spatial words above Learn to line up blocks to make paths **Sorting & Sequencing** Sort by a single property – colour Colour matching and using colour words blue, red and white Patterned songs and rhymes with simple actions	knock down – link to spatial words above **Sorting & Sequencing** Sort by 2 properties - colour and size Colour matching and using colour words yellow, green and black Patterned songs and rhymes with simple actions	with 2D pattern blocks or simple inset puzzles with pictures in the holes **Sorting & Sequencing** Sort using different combinations of properties (size attributes linked to measure, colour and shape) Colour matching and using colour words orange, purple and pink Patterned stories with simple actions	efficiently by choosing biggest to go at the bottom and selecting lots of blocks that are the same **Sorting & Sequencing** Simple AB sequences varying colour or size (continue and copy patterns) Colour matching and using colour words brown, and grey	above, below, around, beside, across, along) Understand and respond to language of turn/rotate **Shape** Explore more complex construction with 3D shapes – combining shapes to make arches and enclosures Play with simple inset puzzles where you need to turn the pieces to fit and make links to spatial vocab above **Sorting & Sequencing** Simple AB sequences of sounds, actions and objects (make own patterns) Size matching and using words big and small	(far away, near, how far?) Understand and respond to language of turn over/flip **Shape** Begin to notice properties of 2D shapes and find shapes that are the same including on the faces of 3D shapes Try to match colours and shapes on simple Numicon images and make links to spatial vocab above

RECEPTION

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cardinality & Counting Accurate counting of sets of objects 1-5 Subitising 1-3 Numeral Recognition	**Cardinality & Counting** Accurate counting of sets of objects 1-10, recognising and ordering numerals 1-	**Cardinality & Counting** Counting backwards 10-1 & ordering numbers 10-1	**Composition** Recall number bonds for numbers 1-5 Partitioning and recombining sets of	**Cardinality & Counting** Counting beyond 10 noticing pattern in ones	**Pattern (alongside Composition & Comparison)** Symmetry/reflections – link to doubles

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to 5 **Composition** Conceptual subitising - noticing numbers within numbers **Comparison** Compare sets 1-5 using vocab of more / fewer / most /fewest **Shape/Space** 2D shapes and their properties **Pattern** Simple AB patterns (complete, copy, make own and spot/correct errors in patterns)	10 Subitising 1-5 **Composition** Applied conceptual subitising Inverse operations - splitting and recombining sets of objects 1-5 including on part whole model **Comparison** Compare numbers using vocab of more/less Find 1 more using sets of objects on tens frames and on a number track **Pattern** Identifying unit of repeat – AB & ABC patterns	**Composition** Systematic approach to partitioning sets of objects 1-5 including on part whole model **Comparison** Find 1 less using sets of objects on tens frame and on a number track **Measures** Height **Shape/Space** Spatial vocabulary (in front, behind, in between, on, in, under, first second, third) **Pattern** More complex patterns – ABB, ABBC Generalising pattern and transferring to another format e.g. link pattern of shapes to movements	objects 6-9 Including on part whole model and tens frame **Measures** Length **Shape/Space** Representing spatial relationships as maps Spatial vocabulary (forwards, backwards, up, down, across) **Pattern (alongside Comparison)** Numerical Patterns – staircase patterns linked to finding 1 more/1 less using a mental numberline (Comparison)	**Composition** Systematic approach to splitting and recombining 10 including on tens frame and part whole model Recall some number bonds for 10 **Measures** Mass **Shape/Space** 3D shapes properties of shapes **Patterns** Numerical patterns odds & evens	Share fairly (comparison), Use part whole model to partition numbers where both parts are the same (Composition) and Look at halving as inverse of doubles (Pattern) **Cardinality & Counting** Counting beyond 20 noticing pattern in tens **Measures** Capacity Time – sequence of events **Shape/Space** Relationships between shapes

YEAR 1

Block	Topic	National Curriculum	Sequence of learning
1	Number and Place Value to	• Count to and across 100, forwards and backwards, beginning with 0 or 1, or from	• Recap counting from 1-10 and using this to accurately count sets of objects, pictures, sounds and actions

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	10	any given number • Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens • Given a number, identify one more and one less • Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least • Read and write numbers from 1 to 20 in numerals and words	• Counting forwards & backwards from different start numbers • One more/one less • Missing Number Sequences • Comparing amounts & using associated vocab • Comparing numbers & using associated vocab and symbols < > and = • Ordering numbers including use of ordinal numbers – first, second, third • Representing numbers using number lines
2	Addition and Subtraction to 10	• Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs • Represent and use number bonds and related subtraction facts within 20 • Add and subtract one-digit and two-digit numbers to 20, including zero • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = __ - 9	• Recap Number Bonds to 4 & 5 • Introduce mathematical statements involving addition (+) and equals (=) signs • Begin to learn addition facts to 10 through partitioning and recombining (aggregation) • Use a Systematic approach • Notice Patterns in Calculations • Understand addition is commutative and also equations can be reordered e.g. 7 = 3 + 4 • Adding 2 amounts by counting on (Augmentation) • Adding on a number line • Solving addition word problems • Introduce mathematical statements involving subtraction (-) and equals (=) signs • Subtraction by reduction (take away) • Subtraction on a number line • Begin to learn subtraction facts by partitioning a number • Subtraction on a part whole model • Subtraction word problems

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			• Related facts – fact families • Inverse operations • Missing number problems • Finding the difference • Substantial problems
3	Number and Place Value to 20	• Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens • Given a number, identify one more and one less • Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least • Read and write numbers from 1 to 20 in numerals and words	• Introduce the concept of 1 ten and its equivalence to ten ones • Count sets of 11-19 objects grouping the first ten – exposing the one ten and __ ones structure • Understand and apply place value to identify teen numbers without counting • Apply PV to show given teen numbers using different representations • Zero as a place holder • Repeating Patterns • Counting forwards and backwards and dual counting • One more one less • Missing number sequences • Position 1-20 on different number lines (marked and unmarked) • Comparing amounts and using associated vocab • Comparing numbers & using associated vocab and symbols < > and = • Ordering Numbers • Read & Write numbers to 20 in words • Problem solving & consolidation
4	Addition and Subtraction to 20	• Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs • Represent and use number bonds and related subtraction facts within 20 • Add and subtract one-digit and two-digit numbers to 20, including zero • Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and	• Recap addition facts within 10 - developing fluency using a variety of strategies including the effect of adding zero, one or two and using near doubles. • Recap addition by counting on and extend to 20 including the effect of adding zero • Solve one step problems that involve addition • Recall number bonds to 10 and use them to make bonds to 20 • Composition and addition with three parts • Adding by bridging to 10 • Recap subtraction by reduction (taking away) and by partitioning (not

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		missing number problems such as 7 = __ - 9	structure) and extend to 20 • Solve one step problems that involve subtraction • Subtracting by bridging to 10 • Understand inverse operations and fact families • Missing Number Problems • Consolidation and problem solving
5	Geometry: Shape	• Recognise and name common 2-D and 3-D shapes, including: ○ 2-D shapes [for example, rectangles (including squares), circles and triangles] ○ 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]	• Discover shape knowledge from EYFS • Use everyday language to describe 2D shapes • Recognise and name common 2D shapes (rectangles (including squares), circles, triangles at a minimum) • Use correct mathematical terms to describe the properties of 2D shapes and distinguish between them • Arrange 2D shapes to match a compound shape • Use everyday language to describe 3D shapes • Recognise and name common 3D shapes (cuboids (including cubes), cylinders, spheres and pyramids) • Use correct mathematical terms to describe the other properties of 3D shapes and distinguish between them • Arrange 3D shapes to match a compound shape
6	Fractions	• 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	• Recognise, find and name a half as one of two equal parts of an object or shape • Recognise, find and name a half as one of two equal parts of a quantity • Recognise, find and name a quarter as one of four equal parts of an object or shape • Recognise, find and name a quarter as one of four equal parts of a quantity
7	Geometry: Position and Direction	• Describe position, direction and movement, including whole, half, quarter and three-quarter turns	• Describe position (above, below, in front of, behind, in between, next to, inside, outside etc) • Describe direction and movement without turns (forwards, backwards, sideways, left, right, up, down) • Describe direction and movement with turns (forwards, backwards, turn left, turn right, up, down)

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			• Describe turns (whole, half quarter and three-quarter turns)
8	Measures: Time	• 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 • Measure and begin to record time (hours, minutes, seconds) • Compare, describe and solve practical problems for: time [for example, quicker, slower, earlier, later]	• Sequence events and discuss using target language • Recognise and use language relating to days of the week • Recognise and use language relating to weeks, months and years • Measure and begin to record time durations – second, minute, hour • Solve practical problems for time using key vocab - quicker, slower, earlier, later • Telling the time to the nearest half an hour
9	Number and Place Value beyond 20	• Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number • Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens • Given a number, identify one more and one less • Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least • Read and write numbers from 1 to 20 in numerals and words	• Count in ones forwards and backwards to 100 and beyond • Skip counting in multiples of 10 • 0-10 number line can be used to estimate the position of multiples of 10 on a 0-100 number line • Count objects efficiently by making groups of 10 • Understand that the position of a digit tells you the value • Show 2-digit numbers using different representations • Position 2-digit numbers on a number line • One more and one less • Ten more and ten less • Compare and order amounts and numbers • Odd & even numbers • Count in 2s forwards and backwards from any multiple • Count sets of objects by grouping in 2s • Count in 5s forwards and backwards from any multiple

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			• Count sets of objects by grouping in 5s • Problem Solving and Consolidation
10	Multiplication and Division	• 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	• Doubling • Halving • Making equal groups • Solve multiplication problems by creating equal groups and counting in ones • Solve multiplication problems by counting in 2s, 5s and 10s • Repeated addition • Arrays • Solve division by sharing problems by creating equal groups • Solve division by grouping problems by creating equal groups • Substantial problems
11	Money	• Recognise and know the value of different denominations of coins and notes	• Sorting and ordering coins • Understand that the value of each coin relates to that number of pennies or pounds • Understand that the value of each note relates to that number of pounds • Making amounts • Consolidating addition and subtraction through money problems including change • Consolidate multiplication and division through money problems
12	Measures: Length, Mass, Capacity	• Compare, describe and solve practical problems for: • lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] • mass/weight [for example, heavy/light, heavier than, lighter than] • capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]	• Solve practical problems using direct comparison of lengths, heights and width • Solve practical problems using nonstandard units to measure lengths, heights and widths • Measure and begin to record lengths and heights using standard units (cm & m) and use to solve practical problems • Solve practical problems using direct comparison of capacity and volume • Solve practical problems using nonstandard units to measure capacity and volume

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		• Measure and begin to record the following: • lengths and heights • mass/weight • capacity and volume	• Measure and begin to record capacity and volume using standard units (litres) and use to solve practical problems • Solve practical problems using direct comparison of weight/mass • Solve practical problems using nonstandard units to measure weight/mass • Measure and begin to record weight/mass using standard units (kg) and use to solve practical problems
YEAR 2			
Block	**Topic**	**National Curriculum**	**Sequence of learning**
1	Number and Place Value	• Count in in tens from any number, forward and backward • Recognise the place value of each digit in a two-digit number (tens, ones) • Identify, represent and estimate numbers using different representations, including the number line • Compare and order numbers from 0 up to 100; use and = signs • Read and write numbers to at least 100 in numerals and in words • Use place value and number facts to solve problems	• Count, read and write numbers to 100 • Recognise Place Value in a 2-digit number • Examine patterns using Place Value & counting in steps of 10 • Compare and order numbers • Identify and positions numbers on marked and blank number lines • Partition numbers into different combinations of tens and ones • Counting in steps of 2, 5 and 3
2	Addition and Subtraction	• Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 • 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	• Add and subtract within 10 • Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot • Understand that equations need to be balanced and an equation can have an expression on both sides • Compare expressions with > < and = symbols • Recognise the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems • Recall and use addition and subtractions facts within and to 20 • Derive and use addition and subtraction facts to 100

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		• Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot • Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems • Solve problems with addition and subtraction: Using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods	• Consolidate adding two 1-digit numbers crossing the tens boundary • Consolidate subtracting a 1-digit number from a teen number crossing the tens boundary • Adding three 1-digit numbers (odd & even) • Add a 2-digit number and ones • Add a 2-digit number and tens • Add two 2-digit numbers (no bridging, with bridging, adjusting & compensating) • Subtract a 1-digit number from a 2-digit number • Subtract tens from a 2-digit number • Subtract two 2-digit numbers (no bridging, bridging, adjusting & compensating) • Use finding the difference to solve comparative problems • Solve word problems
3	Money	• Recognise and use symbols for pounds (£) and pence (p); combine 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	• Recognise coins and notes (recap year 1) • Combine amounts to make a particular value • Find total value of groups of coins and notes and record using symbols £ and p (separately, depending on the unit being used) • Find different combinations of coins that equal the same amount of money • Solve simple problems in a practical context involving addition of money • Solve simple problems in a practical context involving change • Solve simple problems in a practical context involving subtraction of money (other than change) • Consolidation, reasoning and problem solving
4	Multiplication and Division	• Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward • Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even	• Understand and use the language of equal groups • Link equal groups to repeated addition • Link equal groups to multiplication sentences with x symbol • Recall and use multiplication facts from the 2x table • Recall and use multiplication facts from the 10x table • Recall and use multiplication facts from the 5x table

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		numbers • Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs • 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 methods, and multiplication and division facts, including problems in contexts	• Recall and link facts from the 2x, 5x and 10x tables and reason about patterns between times table facts • Introduce arrays and the new term 'multipled by' • Link repeated addition and 'multiplied by' number sentences • Use an array to show that multiplication can be done in any order (commutative law) • Divide by grouping and record using the ÷ symbol • Divide by sharing and record using the ÷ symbol • Compare division by grouping and division by sharing • Related multiplication and division facts • Solve problems involving multiplication and division, using mental methods, and multiplication and division facts
5	Fractions	• Recognise, find, name and write fractions 1/3, 1/4, 2/4, 3/4 of a length, shape, set of objects or quantity • Write simple fractions for example, 1/2 of 6 = 3 • Recognise the equivalence of 2/4 and 1/2	• Recap Halves and Quarters • Introduce Fractions Notation 1/2 and ¼ • Find and Name Fraction One Third and Use Fractions Notation 1/3 • Find and Name 1/2, 1/4 or 1/3 of a Set of Objects and Record as Sentences e.g. ½ of 8 = 4 • Introduce Non-Unit Fractions 2/3, 2/4 and 3/4 of an Object, Shape or Length • Find 2/3, 2/4 and 3/4 of a Set of Objects • Fractions as Steps in the Counting Sequence and on Number Lines • Problem Solving
6	Geometry: Properties of Shape	• Identify and describe the properties of 2-D shapes, including the number of sides and lines symmetry in a vertical line • Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces	• Introduction and recap of shape work from year 1 • Name and describe properties of 2D shapes including sorting by those properties • Lines of symmetry • Name and describe properties of 3D shapes including sorting by those properties and identifying 2Dshapes as faces on 3D shapes

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		• 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	• Consolidation with further sorting and problem solving
7	Measures: Time	• 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	• Introduction & recap of analogue clocks from Y1 • Understand the term clockwise • o'clock & half past with just the hour hand • Quarter past & quarter to with just the hour hand • o'clock half past, quarter past and quarter to with just the minute hand (Measuring in fractions of an hour) • Telling the time on an analogue clock with both hands to the nearest 15 minutes (TAF expected) • Telling the time on an analogue clock with both hands to the nearest 5 minutes (NC objective) • Know the number of minutes in an hour • Know the number of hours in a day • Compare and sequence units of time • Link telling the time with time durations • Compare and sequence intervals of time
8	Statistics	• 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 • Ask and answer questions about totalling and comparing categorical data	• Introduction – key vocab • Interpret and construct simple tally charts and ask and answer questions about the data • Interpret and construct simple tables and ask and answer questions about the data • Interpret and construct simple pictograms and ask and answer questions about the data • Interpret and construct simple block diagrams and ask and answer questions about the data • Consolidation – ask and answer questions about a variety of different representations
9	Geometry:	• Order and arrange combinations of	• Describe position (in, on, under, in front of, behind, in between, next

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	Position and Direction	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 (clockwise and anti-clockwise)	to, on the left of, on the right of, above, below) • Describe direction and movement without turns (forwards, backwards, left, right, up, down) • Describe rotation as turns (whole, half quarter and three quarter turns clockwise and anticlockwise) • Describe rotation in terms of right angles • Describe direction and movement including using a range of vocabulary to describe turns • Order and arrange combinations of mathematical objects in patterns and sequences
10	Measures: Length, Height, Mass, Capacity and Temperature	• 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 using >, < and =	• Introduction – choosing sensible units and equipment • Number lines recap • Choose and use appropriate standard units to estimate and measure length /height in any direction (m/cm) to the nearest appropriate unit, using rulers • Compare and order lengths • Choose and use appropriate standard units to estimate and measure capacity (litres/ml) to the nearest appropriate unit, using measuring vessels • Compare and order volume/capacity • Choose and use appropriate standard units to estimate and measure mass (kg/g) using scales • Compare and order mass • Choose and use appropriate standard units to estimate and measure temperature (°C) to the nearest appropriate unit, using thermometers • Compare and order temperature • Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts

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YEAR 3			
Block	**Topic**	**National Curriculum**	**Sequence of learning**
1	Number and Place Value	• Count from 0 in multiples of 50 and 100; find 10 or 100 more or less than a given number • Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) • Compare and order numbers up to 1000 • Identify, represent and estimate numbers using different representations • Read and write numbers up to 1000 in numerals and in words • Solve number problems and practical problems involving these ideas	• Introduction to resources • Count in 100s – Ensure the link to counting in 10s • Value of digits with a range of representations • Systematic problem solving – making a range of 3-digit numbers with 3-digit cards • Partitioning in nonstandard ways • 1, 10, 100 more or less • Counting in 50s • Comparing objects using a range of representations • Comparing 2 numbers • Positioning numbers on a number line • Ordering a range of numbers • Application to substantial problems

2	Addition and Subtraction	• Add and subtract numbers mentally, including:
		  ○ 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
		• Estimate the answer to a calculation and use inverse operations to check answers
		• Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction
			• Consolidate number facts from KS1
			• Related number facts using scaling– no bridging
			• Fact families – no bridging
			• Missing box and inverses – no bridging
			• Adding and Subtracting Using Place Value
			• Adding Using Partitioning
			• Add a 3-digit number and ones mentally using bridging
			• Subtract a 3-digit number and ones mentally using bridging
			• Add a 3-digit number and tens mentally using bridging and extending to compensating
			• Subtract a 3-digit number and tens mentally using bridging and extending to compensating
			• Adding and subtracting a 3- digit number and hundreds mentally
			• Estimation
			• Finding the difference
			• Problem solving with mental calculations

Love each other, as God loves us.

Curriculum Progression for Maths

			• Written addition • Written subtraction • Problem solving and consolidation • Extending mental strategies
3	Multiplication and Division	• Count from 0 in multiples of 4, 8 • Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables • 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 • 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	• Recap 2x, 5x, 10x tables • 4x tables • 8x tables • 3x tables • Making connections between the 2, 4 and 8 times tables • Array, commutative, inverse and fact families • Multiplying and dividing by 10 • Related facts – scaling known facts • Doubling and having • Partitioning to multiply • Additional mental strategies (compensating and x by 10 and halving) • Scaling • How many ways • Written multiplication 2-digit by 1-digit • Written division 2-digit by 1-digit • Consolidation and problem solving
4	Money	• Add and subtract amounts of money to give change, using both £ and p in practical contexts	• Recognising coins • Making amounts • Find the total of two amounts • Finding the difference between 2 amounts • Giving change • Multiplication and division problems involving money • 2 step problems
5	Fractions and Decimals	• 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	• Unit fractions • Non-unit fractions • Making a whole • Making a half

Curriculum Progression for Maths

		discrete set of objects: unit fractions and non-unit fractions with small denominators • Recognise and show, using diagrams, equivalent fractions with small denominators • Add and subtract fractions with the same denominator within one whole • Compare and order unit fractions, and fractions with the same denominators • Solve problems that involve all of the above	• Placing fractions on a number line (ordering fractions while exploring equivalents) • Equivalent fractions • Comparing and Ordering fractions • Fraction of an amount • Placing tenths on a number line – link to decimal representation • Substantial problem solving • Addition of Fractions • Subtraction of Fractions
6	Geometry	• Draw 2-D shapes and make 3- D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them • 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	• Recap of 2D shapes – names and properties • Lines • Right angles • Drawing 2D shapes • Regular and irregular polygons • Recap 3D shapes • Modelling 3D shapes • 3D shapes in different orientations • Problem Solving
7	Statistics	• Interpret and present data using bar charts, pictograms and tables • 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	• Create tally charts and frequency tables • Pictograms • Pictograms including when one symbol represents more than one unit • Bar charts • Interpret data from graphs and understand varying scales of multiples of 2, 5 and 10 when reading scales • Solve one-step and two-step questions using information presented in scaled bar charts and pictograms and tables
8	Measures:	• Tell and write the time from an analogue	• Recap o' clock, half past, quarter past and quarter to

Curriculum Progression for Maths

	Time	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]	• Recap telling the time to the nearest 5 mins • Time to the minute past the hour • Time to the nearest minute to the hour • Show link to Roman Numerals on a clock • AM/PM • 24 hour time • Estimate the time taken for activities in seconds • Comparing duration of events • Duration when given start and end • End when given start and duration • Start when given end and duration • Range of duration problems – identify whether the problem is type A, B or C and solve using an efficient method • Number of seconds in a minute, days in a year and a leap year • Application to substantial problems
9	Measures: Length, Perimeter, Mass and Capacity	• Measure, compare, add and subtract: lengths (m/cm/mm) • Measure the perimeter of simple 2-D shapes • Measure, compare, add and subtract: mass (kg/g); volume/capacity (l/ml)	**Length** • Explore tools for measuring length • Explore vocab for measuring length • Model units of length • Read scales • Measure in metres • Measure in mm/cm • Work out equivalent lengths • Order and compare lengths using conversion **Perimeter** • Calculate Perimeter of simple 2d shapes • Measure perimeter of shapes and areas e.g classroom **Capacity** • Explore tools for measuring capacity • Explore vocab for measuring capacity • Model units of capacity • Find a container that holds more and less than a litre

Curriculum Progression for Maths

			• Read scales • Measure in l/ml • Work out equivalent volumes **Mass** • Explore tools for measuring mass • Explore vocab for measuring mass • Model units of mass • Read scales • Measure in g/kg • Work out equivalent weights • Order and compare measurements using conversion
YEAR 4			
Block	**Topic**	**National Curriculum**	**Sequence of learning**
1	Number and Place Value	• Count in multiples of 25 and 1,000 • Find 1,000 more or less than a given number • Count backwards through zero to include negative numbers • Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) • 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 large positive numbers • Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and	• Introduction to resources • Counting in 1,000s • Composing 4-digit numbers and discussing column value of each digit of these numbers (including the role of 0 in a number) • Standard and non-standard partitioning • Recognising that there are 10 hundreds in a thousand, 100 tens in 1,000, 1,000 ones in 1,000 and using this to represent a 4-digit number • Finding 1,000 more or less than a given number • Comparing numbers beyond 1,000 • Ordering Numbers beyond 1,000 • Counting in 1,000s, 500s, 100s, 50s and 25s • Positioning numbers on a blank and scaled number lines with a variety of starting and ending points and a range of increments • Substantial problem solving • Rounding numbers to the nearest 10, 100 and 1,000 • Problem Solving • Reading and representing numbers on a number line to include negative numbers • Reading and writing Roman numerals up to 100

Curriculum Progression for Maths

		place value	
2	Addition and Subtraction	• Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate • Estimate and use inverse operations to check answers to a calculation • Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why	• Scaling known facts by 10 and 100 to create related facts • Adding and Subtracting Using Place Value • Adding Using Partitioning • Adding multiples of 1, 10, 100 and 1,000 to a number with no bridging • Adding 1 digit to a 3 or 4-digit number using bridging • Adding a multiple of 10 to a 3 or 4-digit number using bridging • Adding a multiple of 100 to a 4-digit number using bridging • Subtracting multiples of 1, 10, 100 and 1,000 from a number with no bridging • Subtracting 1 digit from a 3 or 4-digit number using bridging • Subtracting a multiple of 10 from a 3 or 4-digit number using bridging • Subtracting a multiple of 100 from a 4-digit number using bridging • Using the concept of 'finding the difference' within subtraction • Understanding the inverse relationship between addition and subtraction and generating fact families • Using inverse operations within addition and subtraction to check calculations • Reordering calculations to look for known facts and aid efficiency • Compensating • Estimation • Standard written method of addition • Standard written method of subtraction • Adjusting (consider which children can grasp and retain this method) • Reflecting on the most efficient strategy • Solve addition and subtraction two step problems in contexts, deciding which operations and methods to use and why
3	Multiplication and Division	• 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;	• Recap 2, 5 and 10 times tables including patterns and generalisations • Recap 4, 8 and 3 times tables including patterns and generalisations • Teach 6, 12, 9, 11 and 7 times tables • Links and the development of multiplication • Commutative, inverse and fact families.

Curriculum Progression for Maths

		multiplying together three numbers • Recognise and use factor pairs and commutativity in mental calculations • Multiply two-digit and three-digit numbers by a one-digit number using formal written layout • 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 object	• Solve missing box calculations using known facts and inverse operations • Multiplying by 10 and 100 • Dividing by 1, 10 and 100 • Using scaling numbers by 10 and 100 to solve calculations using known facts • Doubling and halving • Compensating • Distributive Law • Multiplying 3 numbers using the most efficient strategy • Additional mental strategies • Find factors of numbers using a systematic approach • Factorising • Solving problems including using scaling and correspondence • Written strategy for multiplication • Division if stated in school calculation policy • Solve a range of problems using multiplication and division using an efficient strategy • Solve multi-step problems involving all 4 operations • Choose an efficient method for calculating and explain which methods have been used.
4	Fractions	• Recognise and show, using diagrams, families of common equivalent fractions • 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 • Add and subtract fractions with the same denominator	• Recapping children's prior knowledge of fractions • Investigating using pictorial or practical resources how to make a whole • Placing fractions on a 0-1 number line • Placing mixed numbers and improper fractions on a number line • Converting mixed numbers and improper fractions • Equivalent fractions using multiplication • Finding fractions of an amount (unit and non-unit fractions) • Adding fractions with the same denominator (total may exceed one whole) • Subtracting fractions with the same denominator (start number may be more than one whole)

Curriculum Progression for Maths

5	Decimals and Money	• Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten • Recognise and write decimal equivalents of any number of tenths or hundredths • Recognise and write decimal equivalents to ¼, ½ and ¾ • 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 • 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 • Estimate, compare and calculate different measures, including money in pounds and pence • Solve simple measure and money problems involving fractions and decimals to two decimal places	• Recap year 3 decimals unit and look at counting in tenths • Using money, base 10 or a bead string investigate a hundredth as a fraction and a decimal (1 out of 100 beads is 1 100 or 0.01 because we have 1 in the hundredth column) • Count up and down in hundredths • Compare and order decimals • Positioning hundredths on a number line and using this to order and compare decimals to 2 dp • Rounding Decimals • Dividing a 1 or 2-digit number by 10 or 100 and reading the answer as ones, tenths and hundredths • Identifying where 0.5, 0.25 and 0.75 would be on a number line and discussing that these are positioned at 1/2, 1/4 and ¾ • Solve problems involving money
6	Geometry	• 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 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	• Recap 2D shape – names and properties of shapes (regular and irregular shapes) • Recognising angles (obtuse, acute and right angles) • Comparing angles • Identifying angles in shapes • Investigating triangles, classifying and sorting • Investigating quadrilaterals, classifying and sorting • Investigating symmetrical patterns (one line of symmetry, 2 lines of symmetry, line of symmetry parallel to gridlines, line of symmetry at an angle to the gridlines)

Curriculum Progression for Maths

		• 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	• Exploring symmetry in shapes • Complete a simple symmetric figure with respect to a specific line of symmetry • Using coordinates to position points and to read the position of points using the language of x and y axis • Can use knowledge of properties of shapes to plot a missing coordinate of a given polygon • Can use the language of coordinates and positional language to describe how a shape has been translated • Can translate a shape when given coordinates and positional language • Substantial problem solving
7	Statistics	• 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	• Draw and interpret pictograms • Draw and interpret bar charts • Answer questions from a range of different graphs – using discrete data • Solve comparison, sum and difference problems using information presented in charts • Introduce continuous data and discuss how this is different to discreet • Represent continuous data as a line graph (link to science/topic) • Read and interpret a range of line graphs and answer questions on the data • Answer questions from a range of different graphs – using discrete data • Collect continuous data and choose how to present this and with what scale • Problem solving
8	Measure: Time	• Convert between different units of measure [for example, kilometre to metre; hour to minute] • 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	• Reading and writing time on analogue clocks • Reading and writing time on digital clocks and converting time between analogue and digital 12- hour clocks • Reading and writing time on 24-hour clocks and converting from 12-hour to 24-hour digital clocks and analogue clocks • Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days • Making links and consolidation

Curriculum Progression for Maths

9	Measure: Length, Perimeter & Area, Mass & Capacity	• Convert between different units of measure [for example, kilometre to metre; hour to minute] • Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • Find the area of rectilinear shapes by counting squares • Estimate, compare and calculate different measures, including money in pounds and pence	• Recap tools and language of measure • Recap units of measure and which units are used to measure different things • Convert between different units of measure [for example, kilometre to metre, mm to cm • Convert between different units of measure [g to kg] • Convert between different units of measure [l to ml] • Estimate, compare and calculate different measures • Problem solving around the concepts covered • Calculate the perimeter of a regular shape • Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres • Find the area of rectilinear shapes by counting squares
YEAR 5			
Block	**Topic**	**National Curriculum**	**Sequence of learning**
1	Number and Place Value	• Read, write, order and compare numbers to at least 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 zero • Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000 • Solve number problems and practical problems that involve all of the above • Read Roman numerals to 1,000 (m) and recognise years written in roman numerals	• Reading, writing and making numbers to a million (place value charts, place value counters, digit cards) • Recognise the place value of each digit in a 7-digit number • Look at the impact of adding powers of 10 to a number up to 1,000,000 (with and without crossing boundaries) • Understanding the size and value of a million • Partition a number up to 1 million in a standard and non-standard way • Compare and order numbers to 1,000,000 • Position numbers up to 1 million on a number line with a range of start and ending points – blank and called number lines • Order and compare numbers (either by positioning on a number line first or by using place value) • Rounding numbers up to 1 million to the nearest 10, 100, 1,000, 10,000 and 100,000 • Read and position negative numbers on a number line • Calculate the difference between a positive and a negative number by bridging back through 0

Curriculum Progression for Maths

			• Counting forwards and backwards with positive and negative numbers • Reading and writing Roman Numerals up to 1,000 • Problem solving
2	Addition and Subtraction	• 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 • 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 operations and methods to use and why	• Recap all mental strategies from Year 4 • Add and subtract numbers mentally with increasingly large numbers - scaling facts • Add and subtract numbers mentally with increasingly large numbers - using place value to calculate • Add and subtract numbers mentally with increasingly large numbers - using partitioning to calculate • Add and subtract numbers mentally with increasingly large numbers – bridging • Add and subtract numbers mentally with increasingly large numbers – reordering • Add and subtract numbers mentally with increasingly large numbers - fact families and inverse operations • Use rounding to check answers to calculations and determine, in the context of the problem, levels of accuracy • Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • Selecting efficient methods • Solving word problems
3	Multiplication and Division	• 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 • Multiply numbers up to 4 digits by a one- or two-digit number using a formal written	• Introduction/Times Tables • Related facts • Multiplying a number by 10, 100 and 1,000 • Dividing a number by 10, 100 and 1,000 • Doubling and halving relationship in multiplication and division • Associative Law • Distributive Law • Multiples • Common Multiples • Factors

Curriculum Progression for Maths

		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 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 their knowledge of factors and multiples, squares and cubes • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple ratio	• Build arrays for square numbers and discuss that these have an odd number of factors • Cubed numbers • Build arrays for prime numbers and establish what makes these numbers prime • Substantial problem involving investigating factors, prime and square numbers • Formal written strategy for multiplication • Formal written strategy for division • Interpret remainders within division problems • Solving problems involving multiplication and division (using mental and written strategies, scaling and simple ratio)
4	Fractions	• 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	• Recap the language of fractions and representations of fractions • Use a fractions wall to establish some simple equivalences • Explore the relationships between fractions that are equivalent • Use multiplication to find a family of equivalent fractions when given a starting fraction • Order and compare fractions where the denominators are all multiples

Curriculum Progression for Maths

		• Recognise mixed numbers and improper fractions and convert from one form 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	of each other – applying equivalent fractions understanding • Explore mixed numbers and improper fractions by continuing a fraction count across 2 fraction walls or a number line that extends beyond 1 • Position mixed numbers and improper fractions on a number line • Convert converting improper fractions to mixed numbers • Calculating non unit fraction of quantities • Add fractions with the same denominator and denominators are multiples of the same number • Subtract fractions with the same denominator and denominators are multiples of the same number • Multiply proper fractions and mixed numbers by a whole number using models and images to support
5	Decimals and Percentages	• Read and write decimal numbers as fractions • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • 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 • Solve problems involving number up to three decimal places • 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 1/2, 1/4, 1/5, 2/5 and 4/5 and those fractions	• Understand tenths and hundredths and the relationship between them • Partitioning and recombining decimal numbers • Compare decimals • Position decimal numbers on a number line • Rounding decimals • Mental addition of decimals • Mental subtraction of decimals • Written addition of decimals • Written subtraction of decimals • Multiply and divide by 10, 100 and 1,000 • Multiply and divide numbers mentally drawing upon known facts • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • Solve problems involving numbers up to 3 decimal places • Read and write decimal numbers as fractions • Recognise and write percentages • Recognise equivalent percentages, fractions and decimals • Solve problems that require knowing percentage and decimal equivalents

Curriculum Progression for Maths

		with a denominator of a multiple of 10 or 25	

6	Geometry	• Identify 3-D shapes, including cubes and other cuboids, from 2-D representations
		• Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
		• Draw given angles, and measure them in degrees (°)
		• Identify:
		  ○ angles at a point and one whole turn (total 360°)
		  ○ angles at a point on a straight line and ½ a turn (total 180°)
		  ○ other multiples of 90°
		• Use the properties of rectangles to deduce related facts and find missing lengths and angles
		• Distinguish between regular and irregular polygons based on reasoning about equal sides and angles
		• 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
			• Introduction and recap of previous learning
			• Know angles are measured in degrees
			• Estimate and compare acute, obtuse and reflex angles
			• Draw given angles, and measure them in degrees (°)
			• Identify: -angles at a point and one whole turn (total 360°) -angles at a point on a straight line and ½ a turn (total 180°) -other multiples of 90°
			• Use the properties of rectangles to deduce related facts and find missing lengths and angles
			• Distinguish between regular and irregular polygons based on reasoning about equal sides and angles
			• 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
			• Identify 3-D shapes, including cubes and other cuboids, from 2-D representations

7	Measure: Length, Mass Capacity	• Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • Understand and use approximate equivalences between metric units and	• Recap what is known about metric measures – how many g in a kg, ml in a l, cm in a m, etc • Convert between different units of metric measure, including decimals and fractions • Understand and use approximate equivalences between metric units and common imperial units and convert between them • Estimate volume [for example, using 1 cm^3 blocks to build cuboids

Curriculum Progression for Maths

		common imperial units such as inches, pounds and pints • Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling	(including cubes)] and capacity [for example, using water] • Use addition and subtraction to solve problems involving measure • Use multiplication and division to solve problems involving measure • Consolidation through topic and real-life situations
8	Measure: Perimeter & Area	• 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 (cm^2) and square metres (m^2) and estimate the area of irregular shapes	• Recap perimeter and look at the perimeter of regular shapes • Find missing lengths of a shape if given the total perimeter • Find the perimeter of a composite rectilinear shape by breaking it down into smaller shapes • Recap area and counting the squares in a shape to find its area • Understand why we use the notation cm squared when recording the area of a shape • Use the formula LxW to calculate the area of a shape using cm^2 • Use a scaled drawing to calculate the area of other regular polygons • Estimate the area of irregular shapes
9	Measure: Time	• Solve problems involving converting between units of time	• Introduction and recap on prior learning • Solve problems involving converting between units of time • Apply telling the time and calculating durations of events to reading timetables
10	Statistics	• Solve comparison, sum and difference problems using information presented in a line graph • Complete, read and interpret information in tables, including timetables	• Introduction • Solve comparison, sum and difference problems using information presented in a line graph • Substantial problem linked to a line graph
YEAR 6			
Block	**Topic**	**National Curriculum**	**Sequence of learning**
1	Number and Place Value	• Read, write, order and compare numbers up to 10,000,000 and determine the value	• Numbers to ten million • Understanding and counting in

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Curriculum Progression for Maths

		of each digit • 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	• Powers of 10 • Partitioning in standard and non-standard ways • Compare and order numbers • Positioning numbers on a number line • Round numbers • Negative Numbers • Calculate intervals between negative and positive numbers
2	Addition and Subtraction	• 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 • Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	• Recap/consolidate mental strategies for addition and subtraction, including with decimals • Use estimation to support calculation • Recap/consolidate written strategies for addition and subtraction, including with decimals • Multi Step Problems, including with decimals
3	Multiplication and Division	• Perform mental calculations, including with mixed operations and large numbers • Identify common factors, common multiples and prime numbers • Use their knowledge of the order of operations to carry out calculations involving the four operations • 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	• Introduction • Recapping multiplication • Common multiples and common factors • Prime numbers • Square and cube numbers • Mental methods of multiplication and division • Estimating multiplication questions • Written methods of multiplication • Written methods of division • BODMAS • Solve multi-step problems using all four operations

Curriculum Progression for Maths

		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 • Solve problems involving addition, subtraction, multiplication and division • Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	
4	Fractions	• 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 decimal fraction equivalents	• Equivalent fractions • Simplifying fractions • Finding common denominators • Compare fractions, including fractions > 1 • Order fractions, including fractions > 1 • Add fractions • Subtract fractions • Multiplying pairs of proper fractions • Dividing proper fractions by whole numbers • Interpreting fractions as a remainder
5	Decimals and Percentages	• Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to three decimal places	• Recap/Introduction • Place Value to 3 d.p. • Multiply and divide by 10/100/1,000 • Multiply decimals using a written method

Curriculum Progression for Maths

		• Multiply one-digit numbers with up to two decimal places by whole numbers • Use written division methods in cases where the answer has up to two decimal places • Solve problems which require answers to be rounded to specified degrees of accuracy • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	• Divide numbers with up to 2 d.p. • Associate a fraction with division and calculate decimal fraction equivalents • Recall and use equivalences between simple fractions, decimals and percentages • Exploring percentages • Solve problems involving percentages including application to measure
6	Ratio and Proportion	• 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 of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison • 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	• Describe the proportional relationship between 2 factors using ratio and proportion • Solve simple ratio problems • Use a bar model to tackle ratio problems where we know the whole and the ratio • Use ratio and proportion to solve problems with 3 unknowns • Simplifying ratio to solve problems • Using and applying ratio and proportion to solve a range of problems • Solving problems involving scaling • Scale factors • Scale factors and shape • Use multiplication to solve correspondence problems
7	Algebra	• 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	• Introduction to algebra • Use simple formulae • Express missing number problems algebraically • Finding unknowns in algebraic equations • Enumerate possibilities of combinations of two variables • Problem solving using money and measure problems with 2 unknowns • Solve problems with 2 unknowns and express this algebraically • Finding 2 unknowns in problems with different structures

Curriculum Progression for Maths

		two variables	• Generate and describe linear number sequences • nth term and formula for sequences
8	Measure	• Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places 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 to up to three decimal places • Convert between miles and kilometres • 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 (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3]	• Converting metric measures using decimal notation up to 3dp • Convert between other metric units and common imperial units • Reading scales in different units with divisions in 2, 4, 5 or 10 equal parts • Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate • Convert between miles and kilometres • Convert between different units of time • Recap on area and perimeter from Y5 if needed • Recognise that shapes with the same areas can have different perimeters and vice versa • Calculate the area of triangles • Calculate the area of parallelograms • Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3].
9	Geometry: Shape, Position and Direction	• Draw 2-D shapes using given dimensions and angles • Recognise, describe and build simple 3-D shapes, including making nets • Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles,	• Draw and compose 2-D shapes using given dimensions and angles • Compare and classify geometric shapes based on their properties – triangles • Compare and classify geometric shapes based on their properties – quadrilaterals • Compare and classify geometric shapes based on their properties – polygons

Curriculum Progression for Maths

		quadrilaterals, and regular polygons • Illustrate and name parts of circles, including radius, diameter and circumference and 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 • 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	• Find missing angles on a straight line or in a circle • Recognise missing angles in triangles and quadrilaterals • Find unknown angles in regular polygons • Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius • Describe positions of shapes on a full coordinates grid • Draw and translate a shape and describe the new position on the coordinates grid • Reflect a shape and describe the new position on the coordinates grid • Recognise, describe and build simple 3-D shapes, including making nets
10	Statistics	• Interpret and construct pie charts and line graphs and use these to solve problems • Calculate and interpret the mean as an average	• Construct and interpret line graphs and use these to solve problems • Construct and interpret pie charts and use these to solve problems • Applying percentage to pie charts • Calculate and interpret mean as an average • Substantial problem solving
11	Number, Geometry and Substantial Problem Solving	Following on from National Assessments in May, teachers will assess children's understanding against all Ready to Progress statements and plan to cover any areas that need further consolidation. They will then consider covering any areas of the KS2 curriculum that were not covered fully prior to SATs. Children will tackle open-ended problem solving and further develop their understanding at Greater Depth as appropriate using activities from the First4Maths Digging Deeper books and NRICH. Teachers will consider the additional skills that children need to secure prior to KS3, e.g. effective use of timetables, financial awareness and using equipment such as a calculator and protractor. Additional projects will be explored to allow the children to explore the purpose of mathematics through open-ended investigations. Theme Park Maths, Can the Commonwealth Games/Olympics/World Championships/FIFA World Cup/Rugby World Cup happen without Mathematics?	