



Freegrounds Infant School: Maths

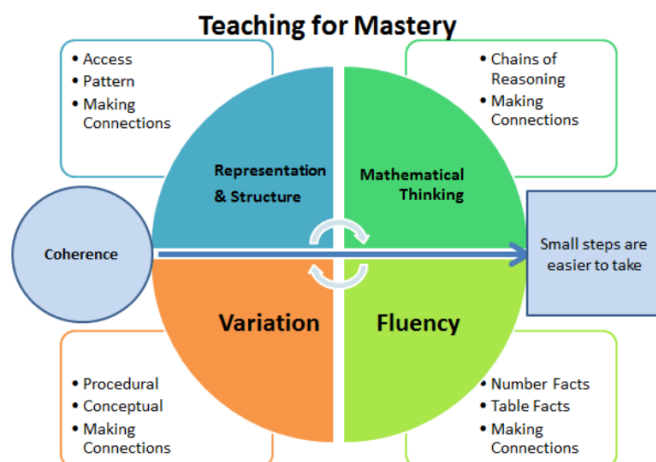
'Building the future together'

Intent

At Freegrounds Infants School, our mathematics curriculum is designed to develop children who are confident and positive mathematicians from an early age. We aim to help our children understand how maths is part of their everyday lives, supporting them to explore, make sense of the world and begin to see its value beyond the classroom. Mathematics is taught as a connected subject, where children build understanding through hands-on experiences, practical resources and a range of representations. We want our pupils to be able to explore mathematical ideas in different ways and begin to make links between them. Our curriculum is carefully planned and sequenced to ensure all children develop a secure foundation in mathematical skills and knowledge. This enables them to reason, problem solve and communicate their thinking with increasing confidence and independence, preparing them for the next stage of their learning. Our aim is that pupils: develop fluency in the fundamentals of mathematics through practical exploration, securing a strong conceptual understanding and the ability to recall key facts; begin to reason mathematically by talking about their ideas, spotting patterns and making simple generalisations using appropriate mathematical language; solve problems by applying their understanding to a range of practical and meaningful situations, learning to break problems down into manageable steps and showing resilience in finding solutions.

Implementation

In our infant school, we teach mathematics through a carefully structured and cyclical approach, following the Hampshire scheme of work and drawing on a range of high-quality resources to support and enhance learning where appropriate. Daily maths lessons are designed to be engaging and practical, typically lasting around 45–60 minutes, with a strong emphasis on exploration, talk and hands-on learning. Teaching follows the learning sequences set out in the Hampshire cycles, allowing children to develop both depth and breadth of understanding across the different areas of mathematics. In addition to the main lesson, we provide a short daily session focused on developing fluency in mental calculation, helping children build confidence and recall key facts. Central to our approach are the **5 Big Ideas of mastery in mathematics**, adapted to meet the needs of younger learners:



Coherence

Learning is broken down into small, carefully sequenced steps so that all children can access new concepts. Each step builds on prior knowledge, supporting children to develop secure understanding and begin to apply their learning in a range of familiar contexts.

Representation and Structure

Children learn through a rich variety of concrete resources, pictorial representations and early abstract thinking. The use of manipulatives is a key feature of teaching in the infant school, enabling children to explore mathematical ideas physically before moving on to drawings and symbols. This approach supports all learners, including those with additional needs, in making meaningful connections.



Mathematical Thinking

Children are encouraged to talk about their thinking using appropriate mathematical language. Teachers model key vocabulary and simple sentence structures to help children explain, describe and begin to justify their ideas clearly.

Variation

Learning activities are carefully designed to help children notice patterns, make connections and deepen their understanding. Within each session, children have opportunities to practise skills, explain their thinking and apply their knowledge to simple problem-solving tasks.

Fluency

We prioritise the development of secure number knowledge and recall. Children in the infant school develop confidence with number facts to 20 and begin to learn key multiplication facts, particularly for the 2, 5 and 10 times tables. Fluency is developed through regular practice in a range of engaging and meaningful contexts.

We recognise the importance of children's early experiences of mathematics and place a strong emphasis on building a secure foundation in number, understanding that this is essential for future success in the subject. In our Early Years provision, practitioners draw upon the White Rose Maths resources, using a cyclical approach similar to that followed in Key Stage 1. This ensures consistency and progression as children move through the school. Learning is delivered through creative, practical and engaging experiences that spark curiosity and enthusiasm for mathematics. Activities are frequent, varied and carefully planned to support children in developing and applying their understanding of numbers to 20. A strong emphasis is placed on the use of concrete manipulatives, alongside pictorial representations such as tens frames and part-part-whole models, to support deep and secure understanding. Children are encouraged to talk about their thinking using appropriate mathematical vocabulary, helping to build confidence, positive attitudes and a genuine interest in the subject. In the Early Years, practitioners carry out ongoing formative assessment to understand each child's development. Judgements are made against the Early Learning Goals, supported by guidance from *Development Matters*, to ensure that next steps are carefully targeted and responsive to children's needs.

Across the infant school, teachers regularly assess pupils' attainment and progress, using this information to inform planning and next steps. Assessment is both formative and summative, ensuring that any gaps in understanding are identified early and addressed promptly. Regular discussions about pupil progress support a shared understanding of children's achievements and priorities for learning. We have high aspirations for every child. Through a mastery approach, children are supported to access learning appropriate to their year group, with careful adaptations where needed. Those ready for further challenge are encouraged to deepen their understanding through rich and meaningful problem-solving opportunities. Children who require additional support are quickly identified and provided with tailored teaching and intervention to help secure key concepts.

As a school, we are committed to continually reviewing and refining our mathematics curriculum to ensure it meets the needs of all children, fostering confident, enthusiastic learners who are well prepared for the next stage of their education.

Impact

The implementation of our mathematics curriculum ensures that, by the time children leave our infant school, they have developed the essential knowledge, skills and confidence needed to transition successfully to the next stage of their education. They understand that mathematics is part of everyday life and have begun to see its purpose and value in the world around them.

Our pupils leave us as confident and enthusiastic learners who are proud of their achievements and willing to take risks in their learning. When faced with mathematical challenges, they are encouraged to show resilience and perseverance, using practical strategies and clear steps to explore and find solutions.

Through rich, practical and varied learning experiences, children develop fluency in the key fundamentals of mathematics appropriate to their stage. They are able to recall and apply their knowledge with growing accuracy and confidence, and are increasingly able to talk about their ideas using appropriate mathematical language.

By the end of Key Stage 1, children are beginning to explain their thinking, make connections between mathematical concepts and approach problems with a developing sense of independence, ensuring they are well prepared for the next stage of their mathematical journey.



Freegrounds Infant School: Maths Curriculum Map

Early Years Foundation Stage		
Autumn Term	Spring Term	Summer Term
Match, sort and compare Talk about measure and patterns It's me 1, 2, 3 Circles and triangles 1, 2, 3, 4, 5 Shapes with 4 sides	Alive in 5 Mass and capacity Growing 6, 7, 8 Length, height and time Building 9 and 10 Sexplore 3D shapes	To 20 and beyond How many now? Manipulate, compose and decompose Sharing and grouping Visualise, build and map Make connections

Key Stage 1						
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Year 1	Number and Place Value Addition and Subtraction Measurement Addition and Subtraction	Multiplication and Division Geometry, Fractions Number and Place Value Addition and Subtraction	Addition and Subtraction Measurement Multiplication and Division Fractions	Geometry Number and Place Value Addition and Subtraction Measurement	Multiplication and Division Fractions Geometry	Number and Place Value Addition and Subtraction Measurement
Year 2	Number and Place Value Addition and Subtraction Measurement	Multiplication and Division Geometry, Fractions Number and Place Value	Addition and Subtraction Multiplication and Division Fractions	Number and Place Value Addition and Subtraction Measurement	Multiplication and Division Fractions Geometry	Number and Place Value Addition and Subtraction Statistics

	Addition and Subtraction	Addition and Subtraction Statistics	Geometry			Measurement
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Pre-Key Stage Standards - Maths			
Key Stage Standard 1 (PK1)	Pre-Key Stage Standard 2 (PK2)	Pre-Key Stage Standard 3 (PK3)	Pre-Key Stage Standard 4 (PK4)
The pupil can: • demonstrate an understanding of the concept of transaction – for example, by exchanging a coin for an item, or one item for another, during a role-play activity • distinguish between ‘one’ and ‘lots’, when shown an example of a single object and a group of objects • demonstrate an understanding of the concept of 1:1 correspondence – for example, giving one cup to each pupil	The pupil can: • identify the big or small object from a selection of 2 • sort objects according to a stated characteristic – for example, group all the small balls together, sort the shapes into triangles and circles • say the number names to 5 in the correct order – for example, in a song or by joining in with the teacher • demonstrate an understanding of the concept of numbers up to 5 by putting together the right number of objects when asked • copy and continue simple patterns using real-life materials – for example: apple, orange, apple, orange (and so on)	The pupil can: • identify how many objects there are in a group of up to 10 objects, recognising smaller groups on sight and counting the objects in larger groups up to 10 • demonstrate an understanding that the last number counted represents the total number of the count • use real-life materials, such as apples or crayons, to add and subtract 1 from a group of objects and indicate how many are now present • copy and continue more advanced patterns using real-life materials – for example: apple, apple, orange, apple, apple, orange (and so on)	The pupil can: • read and write numbers in numerals from 0 to 9 • demonstrate an understanding of the mathematical symbols of add, subtract and equal to • solve number problems involving the addition and subtraction of single-digit numbers up to 10 • demonstrate an understanding of the composition of numbers to 5 and a developing ability to recall number bonds to and within 5 – for example, $2 + 2 = 4$ and $3 + 1 = 4$ • demonstrate an understanding of the commutative law – for example, $3 + 2 = 5$, therefore $2 + 3 = 5$ • demonstrate an understanding of inverse relationships involving addition and subtraction – for example, if $3 + 2 = 5$, then $5 - 2 = 3$ • demonstrate an understanding that the total number of objects changes when objects are added or taken away • demonstrate an understanding that the number of objects remains the same when they are rearranged, providing nothing has been added or taken away • count to 20, demonstrating that the next number in the count is one more and the previous number is one less • recognise some common 2D shapes



Freegrounds Infant School: KS1 Assessment points

YEAR 1	YEAR 2
Number – Place Value	
• Count to and across 100. • Count forwards and backwards, beginning with 0, 1 or any given number • Count, read and write numbers to 100 in numerals • Count in multiples of two • Count in multiples of five • Count in multiples of ten • Given a number, identify one more and one less • Identify and represent numbers using objects and pictorial representations including the number line • Use the language of equal to, more than, less than (fewer), most and least • Read and write numbers from 1 to 20 in numerals and words	• Count in tens from any number, forward and backward • Count in steps of 2 from 0 forward and backward • Count in steps of 3 from 0 forward and backward • Count in steps of 5 from 0 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
Number – Addition and Subtraction	
• Read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs • Represent and use number bonds and related subtraction facts within 20 • Add one-digit and two-digit numbers to 20 including zero • 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 • Solve missing number problems	• Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures • Solve problems with addition and subtraction applying mental methods • Solve problems with addition and subtraction applying written methods • Recall and use addition and subtraction facts to 20 fluently • Derive and use related facts up to 100 • Add numbers using concrete objects, pictorial representations and mentally: a two-digit and ones • Add numbers using concrete objects, pictorial representations and mentally: a two-digit and tens • Add numbers using concrete objects, pictorial representations and mentally: two two-digit numbers • Subtract numbers using concrete objects, pictorial representations and mentally: a two-digit and ones • Subtract numbers using concrete objects, pictorial representations and mentally: a two-digit and tens

	• Subtract numbers using concrete objects, pictorial representations and mentally: two two-digit numbers • Add numbers using concrete objects, pictorial representations, and mentally, including: adding three one-digit numbers • 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
Number – Multiplication and Division	
• Solve one-step problems involving multiplication by calculating the answer using concrete objectives, pictorial representations and arrays with the support of the teacher • Solve one-step problems involving division by calculating the answer using concrete objectives, pictorial representations and arrays with the support of the teacher	• Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables • Recognise odd and even numbers in the 2, 5 and 10 multiplication tables • Calculate mathematical statements for multiplication within the multiplication tables and write them using multiplication (x) and equals (=) signs • Calculate mathematical statements for division within the multiplication tables and write them using 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 using materials, arrays, repeated addition, mental methods and multiplication facts, including problems in contexts. • Solve problems involving division using materials, arrays, repeated addition, mental methods and division facts, including problems in contexts.
Number – 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, 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 • Write simple fractions for example $\frac{1}{2}$ of 6 = 3 • Recognise equivalence of $\frac{2}{4}$ and $\frac{1}{2}$
Measurement	
• Compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half] • Compare, describe and solve practical problems for: mass/weight [for example, heavy/light, heavier than, lighter than] • Compare, describe and solve practical problems for: capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]	• 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 =

• Compare, describe and solve practical problems for: time [for example, quicker, slower, earlier, later] • Measure and begin to record the following: lengths and heights • Measure and begin to record the following: mass/weight • Measure and begin to record the following: capacity and volume • Measure and begin to record the following: time (hours, minutes, seconds) • Recognise and know the value of different denominations of coins and notes • 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 • Draw the hands on a clock face to show the hour and half past the hour	• 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 • Compare and sequence intervals of time • Tell and write the time to five minutes, including quarter past/to the hour • Draw the hands on a clock face to show the time to five minutes, including quarter past/to the hour • Know the number of minutes in an hour and the number of hours in a day
Geometry – Properties of shapes	
• Recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles] • Recognise and name common 2-D and 3-D shapes, including: 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]	• Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line • Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces • Identify 2-D shapes on the surface of 3-D shapes [for example, a circle on a cylinder and a triangle on a pyramid] • Compare and sort common 2-D and 3-D shapes and everyday objects
Geometry – Position and Direction	
• Describe position, direction and movement, including whole, half, quarter and three-quarter turns	• 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 • Distinguish between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns • Distinguish between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns
Statistics	
	• Construct simple pictograms, tally charts, block diagrams and simple tables • Interpret 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
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National Curriculum in England: Maths

Purpose of Study
Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history’s most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.
Aims
The national curriculum for mathematics aims to ensure that all pupils: • become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. • reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language • can solve problems by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions. Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects. The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils’ understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Attainment Targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Key Stage 1 Subject Content

Key Stage 1 – Year 1 and 2

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools]. At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. 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. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

