



Long Term Overview

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 in most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, 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 have conceptual understanding and are able to recall and apply their knowledge rapidly and accurately to problems
- **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 non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

The programmes of study are organised in a distinct sequence and structured into separate domains. Pupils should make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their

Subject: Mathematics

National Curriculum KS1

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 (e.g. 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.

National Curriculum LKS2

The principal focus of mathematics teaching in lower Key Stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of Year 4, pupils should have memorised their multiplication tables up to and including the 12 multiplication table and show precision and fluency in their work.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

National Curriculum UKS2

The principal focus of mathematics teaching in upper Key Stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of Year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly

mathematical knowledge to science and other subjects.

EYFS/ KS1	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer term 2
Reception	Counting and Numbers Counting and Numbers Shape and space Pattern Counting and Numbers Addition (story of five) Counting Measures (length)	Measures (height) Counting and comparing numbers Shape Money Time Assess and Review	Counting Counting Shape and space Data handling Adding (one and two more) Pattern Addition (story of ten) Counting on	Measures (weight) Shape and space Counting and comparing numbers Money 'Real life' problems Time Assess and Review	Counting Counting Addition 2D Shape Data handling Addition Subtraction	Pattern Addition Subtraction Counting Measures (capacity) Counting and comparing numbers 3D Shape Direction Money Time Assess and Review
Year 1 Inspire Maths Program	Numbers to 10 Counting to 10 Compare Order and pattern Number Bonds Making number bonds Addition within 10 Ways to add Making up addition stories Solving word problems	Subtraction within 10 Ways to subtract Making up subtraction stories Solving word problems Making a family of number sentences Shapes and Patterns Getting to know shapes Making pictures from shapes Seeing shapes in things around us Getting to know patterns	Ordinal numbers Knowing ordinal numbers Naming left and right positions Numbers to 20 Counting to 20 Place value Compare Order and pattern Addition and Subtraction within 20 Ways to add Ways to subtract Solving word problems	Length Comparing two things Comparing more things Using a start line Measuring things Finding lengths in units Mass Comparing things Finding the masses of things Picture graphs Simple picture graphs Numbers to 40 Counting to 40 Place value Comparing, order and pattern Simple addition Simple subtraction	Mental calculations Mental addition and subtraction Multiplication Adding the same number Making multiplication stories Solving word problems Division Sharing equally Finding the numbers of groups Time Telling the time to the hour Telling the time to the half hour	Numbers to 100 Counting Place value Comparing, order and pattern Simple addition Simple subtraction Money (1) Getting to know our money Exchanging money Work out the amount of money Money (2) Adding and subtracting in pence Adding and subtracting in pounds Solving word problems

				Adding three numbers Solving word problems		
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LKS2	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer term 2
Year 2	Order numbers to 100, place value Number facts to 20; Counting on and back in 10s Money and time Length, position and direction Complements to 10s; Money: addition and subtraction. Enquiry Week/ Mathematical Challenges Count in 2s and 10s; Fractions	Doubling, halving, addition and subtraction 2D shape and data Addition and subtraction Addition and subtraction Addition Assess and Review	Number and Place Value Addition and Subtraction Addition and Subtraction Measures Multiplication and Division as Inverse Number and Fractions	Addition and Subtraction Measures and Data Multiplication and Division as Inverse Addition and Subtraction Enquiry and Problem Solving Mental addition, subtraction and money Assess and Review	Numbers and Fractions Addition Subtraction Addition Subtraction Shape and measures Multiplication and division	Number and place value Addition Subtraction Shape and Measures Multiplication and division Addition Subtraction Fractions, Multiplication and division Assess and Review

LKS2	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer term 2
Year 3	Number, place value and money Mental addition and subtraction Mental addition and subtraction SHAPE Mental multiplication and division Enquiry Week Number, place value and money	Mental addition and subtraction Mental addition and subtraction MEASURES/DATA Time, bar charts, pictogram Mental multiplication and division Fractions Assess and Review	Number, place value and money Mental addition and subtraction Written addition and mental subtraction MEASURES/DATA Length, weight, bar charts FRACTIONS Number, place value and money	Mental addition and mental subtraction Written addition and mental subtraction MEASURES/SHAPE Time, position and direction Mental multiplication and division Mental multiplication and division Assess and review	Place Value and number Addition Subtraction Multiplication and Division Measures and data Addition Subtraction	Place Value Multiplication and division Shape, measures and data Fractions Addition Subtraction Addition Subtraction/ Multiplication and division Assess and Review
Year 4	Number, place value and money Mental addition and subtraction Written addition and subtraction Frog subtraction SHAPE Mental multiplication and division Number, place value and money Mental addition and subtraction	Written addition and subtraction MEASURES/DATA Time, bar charts, pictograms Mental multiplication and division Mental multiplication and division Fractions Assess and review	Number, place value and money Written addition and subtraction Written addition and subtraction MEASURES/DATA Length, weight, bar charts FRACTIONS Number, place value and money Written addition and mental subtraction	Written addition and mental subtraction MEASURES/SHAPE Time, position and direction Mental multiplication and division Written multiplication and division Assess and review	Number and place value Mental and written subtraction Addition and subtraction Shape and Measures Fractions and decimals	Fractions and decimals Multiplication or division and measures Shape Measures and Data Fractions and division Multiplication/division and addition/subtraction Assess and review

UKS2	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer term 2
Year 5	Number (place value in whole numbers) and Written Addition Number (place value in decimals) and Written Addition of money Written and Mental subtraction Shape Mental multiplication and division and Fractions Number, place value and Written multiplication Mental multiplication and division and	Written Division Number, place value and Written subtraction Measures/Data Fractions Mental and written addition and subtraction and Written multiplication Assess and review	Place value and negative numbers Written Addition Mental addition and subtraction including money Place value and Addition of decimals Co-ordinates and line graphs Mental multiplication and division; written multiplication Fractions, decimals and word problems Written division; multiplying fractions	Number (place value, Addition of decimals Perimeter, area and volume Number, place value and written subtraction Mental & written addition & subtraction; Written x and \div Assess and review	Number and place value Number and place value Multiplication, division and percentages Angles and polygons Fractions and subtraction	Multiplication and division Written multiplication Measures, data and time Place value and Subtraction Written multiplication and multiplication of fractions Calculation Assess and review
Year 6	Place value/Addition Decimals/Addition Addition and subtraction Shape and angles Multiplication and division/Fractions Number/Multiplication Fractions/Division	Decimals/Subtraction Measures Shape/Fractions Multiplication and division/Addition or subtraction NRICH WEEK Assess and review	Number and place value Addition and subtraction Decimals, Addition and subtraction Shape, measures and data Multiplication and division/Decimals Fractions, Division and data	Algebra Fractions/Division Measures Shape/Fractions, ratio and percentages Multiplication and division Assess and review	REVISION WEEK: Number, place value, Addition and subtraction REVISION WEEK: Multiplication and division REVISION WEEK: Fractions, decimals, percentages, ratios and scaling REVISION WEEK: Shape, measures, statistics and algebra SATS week Problem solving and using a calculator	‘Special’ week: Measuring ourselves and what’s around us ‘Special’ week: Large numbers, games and puzzles ‘Special’ week: History of maths ‘Special’ week: Maths in art and nature

					Problem solving and investigations	
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