

Key Stage 3 Formal

Mathematics Long Term Plan

Planning Year 1

Term	Curriculum Focus	Week	Content Focus
Autumn 1	Number: Place Value	WK1	Represent numbers to 1,000, 100s, 10s and 1s
		WK2	Number line to 1,000 Round to the nearest 10
		WK3	Round to the nearest 100 Count in 1,000s 1,000s, 100s, 10s, and 1s
		WK4	Partitioning Number line to 10,000
	Number: Addition and Subtraction	WK5	Add and Subtract 1s, 10s, 100s, and 1,000s Add two 3-digit numbers-not crossing 10 or 100
		WK6	Add two 4-digit numbers-no exchange Add two 3-digit numbers-crossing 10 or 100
Autumn 2	Measurement: Length and Perimeter	Wk7	Add two 4-digit numbers-one exchange Add two 4-digit numbers-more than one exchange
		WK8	Equivalent lengths-m and cm Equivalent lengths mm and cm
	Number: Multiplication and Division	WK9	Kilometres Add lengths Subtract lengths
		WK10	Multiply by 10 Multiply by 100 Divide by 10 Divide by 100
		WK11	Multiply by 1 and 0 Divide by 1 and itself
	WK12	Multiply and divide by 3 The 3 times-table	
Spring 1	Number: Multiplication and Division	WK1	Multiply and divide by 6 6 times table and division facts
		WK2	Multiply and divide by 9 9 times table and division facts
		WK3	Multiply and divide by 7 7 times table and division facts
	Measurement: Area	WK4	What is area? Counting squares
	Number: Fractions	WK5	Unit and non-unit fractions What is a fraction?
		WK6	Tenths Count in tenths
	Spring 2		Wk7

		WK8	Fractions greater than 1 Count in fractions
	Number: Decimals	WK9	Recognise tenths and hundredths
		WK10	Tenths as decimals
		WK11	Tenths on a place value grid Tenths on a number line
		WK12	Divide 1-digit by 10 Divide 2-digits by 10
Summer 1	Number: Decimals	WK1	Hundredths
		WK2	Hundredths as decimals
	Measurement: Money	WK3	Pounds and pence Ordering money
		WK4	Estimating money Convert pounds and pence
	Measurement: Time	WK5	Telling the time to 5 minutes Telling the time to the minute
		WK6	Using a.m. and p.m. 24-hour clock
Summer 2	Statistics	Wk7	Interpret charts Comparison, sum and difference
	Geometry: Properties of shape	WK8	Turns and angles Right angles in shapes
		WK9	Compare angles Identify angles
		WK10	Compare and order angles Recognise and describe 2-D shapes
	Geometry: Position and Direction	WK11	Describe position
WK12		Draw on a grid	

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Planning Year 2

Term	Curriculum Focus	Week	Content Focus
Autumn 1	Number: Place Value	WK1	Find 1, 10, 100 more or less 1,000 more or less
		WK2	Compare numbers Order numbers
		WK3	Round to the nearest 1,000 Count in 25s
		WK4	Negative numbers Roman numerals to 100
	Addition and Subtraction	WK5	Subtract a 3-digit number from a 3-digit number-no exchange Subtract two 4-digit numbers-no exchange
		WK6	Subtract a 3-digit number from a 3-digit number-exchange Subtract two 4-digit numbers-one exchange Subtract two 4-digit numbers-more than one exchange
Autumn 2	Measurement: Length and Perimeter	Wk7	Efficient Subtraction Estimate answers Checking Strategies
		WK8	Measure perimeter Perimeter on a grid
	Number: Multiplication and Division	WK9	Perimeter of a rectangle Perimeter of rectilinear shapes
		WK10	11 and 12 times-table Multiply 3 numbers
		WK11	Factor pairs Efficient multiplication Written methods
		WK12	Multiply 2-digits by 1-digit 1 and 2 Multiply 3-digits by 1-digit
Spring 1	Number: Multiplication and Division	WK1	Divide 2-digit by 1-digit 1a and 1b
		WK2	Divide 2-digits by 1-digit 2a and 2b
		WK3	Divide 3-digits by 1-digit Correspondence problems
	Measurement: Area	WK4	Making shapes Comparing area
	Number: Fractions	WK5	Add fractions Add 2 or more fractions
WK6		Subtract fractions Subtract 2 fractions	
Wk7		Subtract from whole amounts Fractions of a set of objects 1 and 2	
WK8		Calculate fractions of a quantity Problem solving-calculate quantities	
Spring 2		WK9	Hundredths on a place value grid

	Number: Decimals	WK10	Divide 1 or 2-digits by 100
		WK11	Bonds to 10 and 100 Make a whole
		WK12	Write decimals Compare decimals
Summer 1	Number: Decimals	WK1	Order decimals Round decimals
		WK2	Halves and quarters
	Measurement: Money	WK3	Add money Subtract money
		WK4	Find change Four operations
	Measurement: Time	WK5	Hours, minutes and seconds Years, months, weeks and days
		WK6	Analogue to digital-12hour Analogue to digital-24 hour
Summer 2	Statistics	Wk7	Introducing line graphs Line graphs
	Geometry: Properties of shape	WK8	Triangles Quadrilaterals
		WK9	Horizontal and vertical Lines of symmetry
		WK10	Complete a symmetric figure
	Geometry: Position and Direction	WK11	Move on a grid
		WK12	Describe movement on a grid

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Planning Year 3

Term	Curriculum Focus	Week	Content Focus
Autumn 1	Number: Place Value	WK1	1,000s, 100s, 10s and 1s Numbers to 10,000
		WK2	Rounding to the nearest 10 Rounding to the nearest 100 Round to the nearest 10, 100 and 1,000
		WK3	Numbers to 100,000 Compare and order numbers to 100,000
	Number: Addition and Subtraction	WK4	Add two 4-digit numbers -one exchange Add two 4-digit numbers -more than on exchange Add whole numbers with more than 4 digits (column method)
		WK5	Subtract two 4-digit numbers -one exchange Subtract two 4-digit numbers -more than one exchange Subtract whole numbers with more than 4 digits (column method)
	Statistics	WK6	Interpret charts Comparison, sum and difference
Wk7		Introduce line graphs Read and interpret line graphs	
Autumn 2	Number: Multiplication and Division	WK8	Multiples Factors
		WK9	Common factors Prime numbers
		WK10	Square numbers Cube numbers
	Measurement: Perimeter and Area	WK11	Measure perimeter Perimeter on a grid
		WK12	Perimeter of rectangles Perimeter of rectilinear shapes
Spring 1	Number: Multiplication and Division	WK1	Multiply by 10 Multiply by 100
		WK2	Multiply by 10, 100 and 1000 Divide by 10
		WK3	Divide by 100 Divide by 10, 100 and 1000
	Number: Fractions	WK4	What is a fraction? Equivalent fractions 1 and 2
		WK5	Fractions greater than 1 Improper fractions to mixed numbers
		WK6	Mixed numbers to improper fractions Number sequences
		Spring 2	Wk7

		WK8	Add and subtract fractions Add fractions within 1
		WK9	Add 3 or more fractions Add fractions
	Number: Decimals and Percentages	WK10	Decimals up to 2 d.p. Decimals as fractions 1 and 2
		WK11	Understand thousandths Thousandths as decimals
		WK12	Rounding decimals Order and compare decimals
Summer 1	Number: Decimals	WK1	Adding decimals within 1 Subtracting decimals within 1
		WK2	Complements to 1
		WK3	Adding decimals – crossing the whole Adding decimals with the same number of decimal places
		WK4	Subtracting decimals with the same number of decimal places Adding decimals with a different number of decimal places
	Geometry: Properties of shape	WK5	Identify angles Compare and order angles
		WK6	Measure angles in degrees Measuring with a protractor 1 and 2
		Wk7	Drawing lines and angles accurately Calculating angles on a straight line
Summer 2	Geometry: Position and Direction	WK8	Describe position Draw on a grid
		WK9	Position in the first quadrant Translation
	Measurement: Converting Units	WK10	Kilometres Kilograms and kilometres
		WK11	Millimetres and millilitres Metric units
	Measurement: Volume	WK12	What is volume? Compare volume

Unit Skill and Knowledge Development

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Unit	Planning Year 1	Planning Year 2	Planning Year 3
Number: Addition and Subtraction	<p>Autumn Introduced to adding and subtracting thousands. Add two 3-digit numbers with no exchange. Add two 4-digit numbers with no exchange. Add two 3-digit numbers with an exchange. Add two 4-digit numbers with one exchange. Explore multiple exchanges within an addition.</p>	<p>Autumn Explore efficient strategies for subtraction, including: counting on (number lines) near subtraction number bonds. Using the formal column method to subtract two 4-digit numbers. Explore column subtraction using concrete manipulatives. Use the formal column method to subtract two 4-digit numbers. Explore what happens when a subtraction has more than one exchange. Use their understanding of column subtraction and mental methods to find the most efficient methods of subtraction. Use their knowledge of rounding to estimate answers for calculations and word problems. Explore ways of checking to see if an answer is correct by using inverse operations.</p>	<p>Autumn Add two 4-digit numbers with one exchange. Explore multiple exchanges within an addition. Build upon previous learning of column addition. Use their knowledge of subtracting using the formal column method to subtract two 4-digit numbers. Explore what happens when a subtraction has more than one exchange. Use their knowledge of subtracting using the formal column method to subtract numbers with more than four digits.</p>

Unit	Planning Year 1	Planning Year 2	Planning Year 3
Number: Decimals and Percentages	<p>Spring Recognise tenths and hundredths using a hundred square. Using the hundred square and Base 10, children can recognise the relationship between $1/10$ and 0.1. Read and represent tenths on a place value grid. Read and represent tenths on a number line. Understand when dividing by 10 the number is being split into 10 equal parts and is 10 times smaller. Recognise the similarities and differences between the understanding of dividing by 10 and the more efficient method of moving digits.</p> <p>Summer Recognise that hundredths arise from dividing one whole into one hundred equal parts. Using the hundred square and Base 10, children can recognise the relationship between $1/100$ and 0.01.</p>	<p>Spring Understand when dividing by 100 the number is being split into 100 equal parts and is 100 times smaller. Multiples of 10 up to and within 100. Tens and number bonds to 10 and 20. Make a whole from any number of tenths and hundredths. Use place value counters and a place value grid to make numbers with up to two decimal places. Apply understanding of place value to compare numbers with decimals with up to two decimal places.</p> <p>Summer Apply their understanding of place value to order numbers with decimals with up to two decimal places. Round numbers with 1 decimal place to the nearest whole number. Write $1/2$, $1/4$ and $3/4$ as decimals.</p>	<p>Spring Use place value counters and a place value grid to make numbers with up to two decimal places. Explore the relationship between decimals and fractions. Concentrate on more complex decimals numbers. Build on previous learning of tenths and hundredths and apply this to understanding thousandths. Build on their understanding of decimals and further explore the link between tenths, hundredths and thousandths. Develop their understanding of rounding to the nearest whole number and to the nearest tenth. Order and compare numbers with up to three decimal places.</p> <p>Summer Add decimals within one whole. Subtract decimals using a variety of different methods. Find the complements which sum to make 1. Use their skills at finding complements to 1 to support their thinking when crossing the whole. Add numbers greater than one with the same number of decimal places. Subtract numbers with the same number of decimal places. Add numbers with different numbers of decimal places.</p>

Unit	Planning Year 1	Planning Year 2	Planning Year 3
<p style="text-align: center;">Number: Fractions</p>	<p>Spring Explain the similarities and differences between unit and non-unit fractions. Explore fractions in different representations. Explore what a tenth is. Count up and down in tenths using different representations. Use Cuisenaire or number rods to investigate and record equivalent fractions. Use Cuisenaire rods and paper strips alongside number lines to deepen their understanding of equivalent fractions. Use strip diagrams to investigate and record equivalent fractions. Understand equivalence through diagrams. Use manipulatives and diagrams to show that a fraction can be split into wholes and parts. Explore fractions greater than one on a number line and start to make connections between improper and mixed numbers.</p>	<p>Spring Use practical equipment and pictorial representations to add two or more fractions with the same denominator where the total is less than 1. Use practical equipment and pictorial representations to add two or more fractions. Use practical equipment and pictorial representations to subtract fractions with the same denominator within one whole. Use practical equipment and pictorial representations to subtract fractions with the same denominator. Use practical equipment and pictorial representations to subtract fractions. Find a unit fraction of an amount by dividing an amount into equal groups. The denominator of the fraction tells us how many equal parts the whole will be divided into. Use their knowledge of finding unit fractions of a quantity, to find non-unit fractions of a quantity. Solve more complex problems for fractions of a quantity.</p>	<p>Spring Explore fractions in different representations. Use strip diagrams to investigate and record equivalent fractions. Explore equivalent fractions using models and concrete representations. Use manipulatives and diagrams to show that a fraction can be split into wholes and parts. Convert improper fractions to mixed numbers for the first time. Convert from mixed numbers to improper fractions using concrete and pictorial methods to understand the abstract method. Count up and down in a given fraction. Build on their equivalent fraction knowledge to compare and order fractions less than 1 where the denominators are multiples of the same number. Order fractions less than 1 to help them compare and order fractions greater than 1. Recap their understanding of adding and subtracting fractions with the same denominator. Add fractions with different denominators for the first time where one denominator is a multiple of the other. Add more than 2 fractions where two denominators are a multiple of the other. Represent adding fractions using pictorial methods to explore adding two or more proper fractions where the total is greater than 1.</p>



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Unit	Planning Year 1	Planning Year 2	Planning Year 3
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Number: Multiplication and Division

<p>Autumn Visualise and understand making a number ten times bigger and that 'ten times bigger' is the same as 'multiply by 10'. Build on multiplying by 10 and see links between multiplying by 10 and multiplying by 100. Explore questions with whole number answers only, children divide by 10. Divide 100 with whole number answers. Explore the result of multiplying by 1, using concrete equipment. Learn what happens to a number when you divide it by 1 or by itself. Multiply by 3. Explore dividing by 3 through sharing into three equal groups and grouping in threes. Develop fluency in the three times table.</p> <p>Spring Multiply and divide by 6. Use known table facts to become fluent in the six times table. Use their previous knowledge of multiplying and dividing to become fluent in the 9 times table. Use known times table facts to become fluent in the 9 times table. Use their knowledge of multiplication and division to multiply by 7.</p>	<p>Autumn Building on their knowledge of the 1, 2 and 10 times-tables, children explore the 11 and 12 times-tables through partitioning. Introduced to the 'Associative Law' to multiply 3 numbers. A factor is a whole number that multiplies by another number to make a product. Partition two-digit numbers into tens and ones or into factor pairs in order to multiply one and two-digit numbers. Use a variety of informal written methods to multiply a two-digit and a one-digit number. Use their understanding of repeated addition to represent a two-digit number multiplied by a one-digit number with concrete manipulatives. Build on their understanding of formal multiplication to move to the formal short multiplication method. Build on previous steps to represent a three-digit number multiplied by a one-digit number with concrete manipulatives.</p> <p>Spring Divide 2-digit numbers by a 1-digit number by partitioning into tens and ones and sharing into equal groups. Build on their knowledge of dividing a 2-digit number by a 1-digit number by sharing into equal groups. Solve division problems with a remainder.</p>	<p>Autumn Building on their times tables knowledge, children will find multiples of whole numbers. Children understand the relationship between multiplication and division and use arrays to show the relationship between them. Using their knowledge of factors, children find the common factors of two numbers. Using their knowledge of factors, children see that some numbers only have two factors. Find factors of numbers. Learn that a cube number is the result of multiplying a whole number by itself.</p> <p>Spring Visualise and understand making a number ten times bigger and that 'ten times bigger' is the same as 'multiply by 10'. Multiply by 10 and see links between multiplying by 10 and multiplying by 100. Multiply by 10 and 100 before moving on to multiplying by 1,000. Explore questions with whole number answers only, children divide by 10. Divide by 100 with whole number answers. Look at dividing by 10, 100 and 1,000 using a place value chart.</p>
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	<p>Apply the facts from the 7 times table to solve calculations with larger numbers.</p>	<p>Explore dividing 2-digit numbers by 1-digit numbers involving remainders.</p> <p>Apply their previous knowledge of dividing 2-digit numbers to divide a 3-digit number by a 1-digit number.</p> <p>Solve more complex problems building on their understanding of when n objects relate to m objects.</p>	
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Mathematics

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Unit	Planning Year 1	Planning Year 2	Planning Year 3
Number: Place Value	<p>Autumn Use base 10 to become familiar with any number up to 1000. Understand that a 3-digit number is made up of 100s, 10s and 1s. Estimate, work out and write numbers on a number line. Look at the position of a 2-digit number on a number line. Compare rounding to the nearest 10. Look at four-digit numbers. Represent numbers to 9,999, using concrete resources on a place value grid. Explore how numbers can be partitioned in more than one way. Estimate, label, and draw numbers on a number line to 10,000.</p>	<p>Autumn Find one more/less, children now move onto finding 10 and 100 more or less than a given number. Find 1,000 more or less than a given number. Compare 4-digit numbers using comparison language and symbols to determine/show which is greater, and which is smaller. Order a set of numbers in ascending and descending order. Round to the nearest 10 and 100, to round to the nearest thousand. Count in 25s to spot patterns. Recognise that there are numbers below zero. Build on their knowledge of numerals to 12 on a clock face, explore Roman Numerals to 100.</p>	<p>Autumn Represent numbers to 9,999, using concrete resources on a place value grid. Use concrete manipulatives and pictorial representations to recap representing numbers up to 10,000. Look at the position of a 2-digit number on a number line. Compare rounding to the nearest 10 to rounding to the nearest 100. Build on their knowledge of rounding to 10, 100 and 1,000 from previous learning. Focus on numbers up to 100,000. Compare and order numbers Up to 100,000 by applying their understanding from previous learning and how numbers can be represented in different ways.</p>



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Unit	Planning Year 1	Planning Year 2	Planning Year 3
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Geometry: Properties of Shape; Position and Direction

Summer

Recognise angles as a measure of a turn.
Recognise that a right angle is a quarter turn, 2 right angles make a half-turn, 3 right angles make three-quarters of a turn and 4 right angles make a complete turn.
Identify whether an angle is greater than or less than a right angle in shapes and turns, by measuring, comparing and reasoning in practical contexts.
Develop understanding of obtuse and acute angles by comparing with a right angle.
Compare and order angles in ascending and descending order.
Recognise, describe and draw 2-D shapes accurately.
Introduce to coordinates for the first time and they describe positions in the first quadrant.
Develop understanding of coordinates by plotting given points on a 2-D grid.

Summer

Recap the definition of a polygon.
Name quadrilaterals including a square, rectangle, rhombus, parallelogram and trapezium.
Identify and find horizontal and vertical lines in a range of contexts.
Find and identify lines of symmetry within 2-D shapes.
Use their knowledge of symmetry to complete 2-D shapes and patterns.

Move shapes and points on a coordinate grid following specific directions using language such as: left/right and up/down.
Describe the movement of shapes and points on a coordinate grid using specific language such as: left/right and up/down.

Summer

Develop their understanding of obtuse and acute angles by comparing with a right angle.
Compare and order angles in ascending and descending order.
Recap acute and obtuse angles.
Use a protractor for the first time.
Continue to learn how to use a protractor and focus on measuring obtuse angles.
Draw lines correct to the nearest millimetre.
Build on their knowledge of a right angle and recognise two right angles are equivalent to a straight line, or a straight line is a half of a turn.

Children are introduced to coordinates for the first time and they describe positions in the first quadrant.
Develop their understanding of coordinates by plotting given points on a 2-D grid.
Recap their use of coordinates.
Learn to translate shapes on a grid.

Unit	Planning Year 1	Planning Year 2	Planning Year 3
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Measurement: Length, Perimeter, Area, and Height</p>	<p>Autumn Recognise that 100 cm is equivalent to 1 metre. Recognise that 10 mm is equivalent to 1 cm. Multiply and divide by 1,000 to convert between kilometres and metres. Add lengths given in different units of measurement. Use take-away and finding the difference to subtract lengths.</p> <p>Spring Introduced to area for the first time. Use the strategy of counting the number of squares in a shape to measure and compare the areas of rectilinear shapes.</p>	<p>Autumn Explore what perimeter is and what it isn't. Calculate the perimeter of rectilinear shapes by counting squares on a grid. Calculate the perimeter of rectangles (including squares) that are not on a squared grid. Begin to calculate perimeter of rectilinear shapes without using squared paper.</p> <p>Spring Rectilinear shapes using a given number of squares. Compare the area of rectilinear shapes where the same size square has been used.</p>	<p>Autumn Measure the perimeter of rectilinear shapes from diagrams without grids. Calculate the perimeter of rectilinear shapes by counting squares on a grid. Calculate the perimeter of rectangles that are not on a squared grid. Children will begin to calculate perimeter of rectilinear shapes without using squared paper.</p> <p>Summer Multiply and divide by 1,000 to convert between kilometres and metres. Focus on the use of the prefix 'kilo' in units of length and mass, meaning a thousand. Children focus on the use of milli- in units of length and mass. Convert between different units of length and choose the appropriate unit for measurement.</p>



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Unit	Planning Year 1	Planning Year 2	Planning Year 3
Measurement: Money	<p>Summer Develop their understanding of pounds and pence. Use their knowledge of £1 = 100 p to compare amounts. Round amounts of money written in decimal notation to the nearest pound. Convert between pounds and pence using the knowledge that £1 is 100 pence.</p>	<p>Summer Add two amounts of money using pictorial representations to support them. Use different methods to subtract money. Use a number line and a part-whole model to subtract to find change. Solve simple problems with money, involving all four operations.</p>	



Unit Skill and Knowledge Development

Mathematics

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Unit	Planning Year 1	Planning Year 2	Planning Year 3
Measurement: Time	<p>Summer Tell the time to the nearest 5 minutes on an analogue clock. Tell time to the nearest minute using an analogue clock. Use 'morning', 'afternoon', 'a.m.' and 'p.m.' to describe the time of day. Introduced to telling the time on a 24-hour digital clock for the first time.</p>	<p>Summer Recap the number of minutes in an hour and seconds in a minute. Convert between analogue and digital times using a format up to 12 hours. Move on to convert between analogue and digital times using a 24-hour clock.</p>	



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Unit	Planning Year 1	Planning Year 2	Planning Year 3
Measurement: Weight, Volume, Mass, Capacity and Temperature			Summer Understand that volume is the amount of solid space something takes up. Use their understanding of volume (the amount of solid space taken up by an object) to compare and order different solids that are made of cubes.

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Unit	Planning Year 1	Planning Year 2	Planning Year 3
<p style="text-align: center;">Statistics</p>	<p>Summer Revisit how to use bar charts, pictograms and tables to interpret and present discrete data. Solve comparison, sum and difference problems using discrete data with a range of scales.</p>	<p>Summer Introduced to line graphs in the context of time. Continue to solve comparison, sum and difference problems using continuous data with a range of scales.</p>	<p>Autumn Revisit how to use bar charts, pictograms and tables to interpret and present discrete data. Solve comparison, sum and difference problems using discrete data with a range of scales. Introduce to line graphs in the context of time. Read and interpret line graphs.</p>