



Mathematics Curriculum Overview

Every learning objective is visited at least once, with some learning objectives being visited multiple times. Where a learning objective appears for the first time, it will be underlined. Where a learning objective is being repeated, it will be *italicised*. For some sequences there appear to be quite a few repeated learning objectives, but those that are being revisited may not need to be the focus of the sequence; they provide essential building blocks connecting new learning to previous experiences.

| Year Group | Number | Measure | Geometry | Statistics |
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| 1 | Autumn Term <ul style="list-style-type: none"> <u>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</u> <u>count numbers to 100 in numerals; count in multiples of twos, fives and tens</u> <u>identify and represent numbers using objects and pictorial representations</u> <u>read and write numbers to 100 in numerals</u> <u>read and write numbers from 1 to 20 in numerals and words</u> <u>given a number, identify one more and one less</u> <u>read, write and interpret mathematical statements</u> | Autumn Term Spring Term <ul style="list-style-type: none"> <u>compare, describe and solve practical problems for:</u> <ul style="list-style-type: none"> <u>lengths and heights (for example, long/short, longer/shorter, tall/short, double/half)</u> <u>mass/weight (for example, heavy/light, heavier than, lighter than)</u> <u>capacity and volume (for example, full/empty, more than, less than, half, half full, quarter)</u> | Autumn Term <ul style="list-style-type: none"> <u>recognise and name common 2-D shapes (for example, rectangles [including squares], circles and triangles)</u> <u>recognise and name common 3-D shapes (for example, cuboids [including cubes], pyramids and spheres)</u> Spring Term Summer Term <ul style="list-style-type: none"> <u>describe position and direction and movement,</u> | Autumn Term Spring Term Summer Term |



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| | <p><u>involving addition (+), subtraction (-) and equals (=) signs</u></p> <ul style="list-style-type: none"> • <u>represent and use number bonds and related subtraction facts within 20</u> • <u>add and subtract one-digit and two-digit numbers to 20, including zero</u> • <u>solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = _ ? - 9$</u> <p>Spring Term</p> <ul style="list-style-type: none"> • <i>count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number</i> • <i>count numbers to 100 in numerals; count in multiples of twos, fives and tens</i> • <i>given a number, identify one more and one less</i> • <i>read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs</i> | <ul style="list-style-type: none"> ○ <u>time (for example, quicker, slower, earlier, later)</u> • <u>measure and begin to record the following:</u> <ul style="list-style-type: none"> ○ <u>lengths and heights</u> ○ <u>mass/weight</u> ○ <u>capacity and volume</u> ○ <u>times (hours, minutes, seconds)</u> <p>Summer Term</p> <ul style="list-style-type: none"> • <i>compare, describe and solve practical problems for:</i> <ul style="list-style-type: none"> ○ <i>lengths and heights (for example, long/short, longer/shorter, tall/short, double/half)</i> ○ <i>mass/weight (for example, heavy/light, heavier than, lighter than)</i> ○ <i>capacity and volume (for example, full/empty, more than, less than, half, half full, quarter)</i> ○ <i>time (for example, quicker, slower, earlier, later)</i> | <p><u>including whole, half, quarter and three-quarter turns</u></p> | |
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- *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 $7 = __ - 9$*

Summer Term

- *count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number*
- *count numbers to 100 in numerals; count in multiples of twos, fives and tens*
- *given a number, identify one more and one less*
- *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*
- *recognise, find and name a half as one of two equal*

- *measure and begin to record the following:*
 - *lengths and heights*
 - *mass/weight*
 - *capacity and volume*
 - *times (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 and draw the hands on a clock face to show these times*

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| | <p><u>parts of an object, shape or quantity</u></p> <ul style="list-style-type: none"> • <u>recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.</u> | | | |
| 2 | <p>Autumn Term</p> <ul style="list-style-type: none"> • <u>count in steps of 2, 3, and 5 from 0, and in any tens from any number, forward and backward</u> • <u>read and write numbers to at least 100 in numerals and in words</u> • <u>identify, represent and estimate numbers using different representations, including the number line</u> • <u>recognise the place value of each digit in a two-digit numbers (tens, ones)</u> • <u>compare and order numbers from 0 up to 100; use <, > and = signs</u> • <u>use place value and number facts to solve problems</u> • <u>recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100</u> | <p>Autumn Term</p> <ul style="list-style-type: none"> • <u>recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value</u> • <u>find different combinations of coins that equal the same amounts of money</u> • <u>solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change</u> <p>Spring Term</p> <ul style="list-style-type: none"> • <u>choose and use appropriate standard units to estimate and measure to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels:</u> <ul style="list-style-type: none"> ○ <u>length/height in any direction (m/cm)</u> ○ <u>mass (kg/g)</u> | <p>Autumn Term</p> <p>Spring Term</p> <ul style="list-style-type: none"> • <u>identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line</u> • <u>identify 2-D shapes on the surface of 3-D shapes (for example, a circle on a cylinder and a triangle on a pyramid)</u> • <u>compare and sort common 2-D shapes and everyday objects</u> • <u>order and arrange combinations of mathematical objects in patterns and sequences</u> • <u>use mathematical vocabulary to describe position, direction and</u> | <p>Autumn Term</p> <p>Spring Term</p> <ul style="list-style-type: none"> • <u>interpret and construct simple pictograms, tally charts, block diagrams and simple tables</u> • <u>ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity</u> • <u>ask and answer questions about totalling and comparing categorical data</u> <p>Summer Term</p> |

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| | <ul style="list-style-type: none"> • <u>show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</u> • <u>recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems</u> • <u>add and subtract numbers using concrete objects, pictorial representations, and mentally, including:</u> <ul style="list-style-type: none"> ○ <u>a two-digit number and ones</u> ○ <u>a two-digit number and tens</u> ○ <u>two two-digit numbers</u> ○ <u>adding three one-digit numbers</u> • <u>solve problems with addition and subtraction:</u> <ul style="list-style-type: none"> ○ <u>using concrete objects and pictorial representations, including those involving</u> | <ul style="list-style-type: none"> ○ <u>temperature (°C)</u> ○ <u>capacity (litres/ml) to the nearest appropriate unit</u> • <u>compare and order lengths, mass, volume/capacity and record the results using <, > and =</u> <p>Summer Term</p> <ul style="list-style-type: none"> • <i>choose and use appropriate standard units to estimate and measure to the nearest appropriate unit using rulers, scales, thermometers and measuring vessels:</i> <ul style="list-style-type: none"> ○ <i>length/height in any direction (m/cm)</i> ○ <i>mass (kg/g)</i> ○ <i>temperature (°C)</i> ○ <i>capacity (litres/ml) to the nearest appropriate unit</i> • <u>compare and order lengths, mass, volume/capacity and record the results using <, > and =</u> | <p><u>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)</u></p> <p>Summer Term</p> <ul style="list-style-type: none"> • <i>order and arrange combinations of mathematical objects in patterns and sequences</i> • <i>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)</i> | |
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| | <p><u>numbers, quantities and measures</u></p> <ul style="list-style-type: none"> ○ <u>applying their increasing knowledge of mental and written methods</u> • <u>recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers</u> • <u>show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot</u> • <u>calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs</u> • <u>solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division</u> | <ul style="list-style-type: none"> • <u>compare and sequence intervals of time</u> • <u>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</u> • <u>know the number of minutes in an hour and the number of hours in a day</u> | | |
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facts, including problems in context

Spring Term

- recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
- calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs
- solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in context

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| | <ul style="list-style-type: none"> recognise, find, name and write fractions $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$ of a length, shape, set of objects or quantity recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$ write simple fractions for example, $\frac{1}{2}$ of 6 = 3 <p>Summer Term</p> | | | |
| 3 | <p>Autumn Term</p> <ul style="list-style-type: none"> count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number identify, represent and estimate numbers using different representations read and write numbers up to 1000 in numerals and in words recognise the place value of each digit in a three-digit number (hundreds, tens, ones) compare and order numbers up to 1000 | <p>Autumn Term</p> <p>Spring Term</p> <ul style="list-style-type: none"> measure, compare, add and subtract lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) add and subtract amounts of money to give change, using both £ and p in practical contexts measure the perimeter of simple 2-D shapes <p>Summer Term</p> | <p>Autumn Term</p> <p>Spring Term</p> <p>Summer Term</p> <ul style="list-style-type: none"> draw 2-D shapes 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, | <p>Autumn Term</p> <p>Spring Term</p> <ul style="list-style-type: none"> 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 <p>Summer Term</p> |



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| | <ul style="list-style-type: none"> • <u>solve number problems and practical problems involving these ideas</u> • <u>estimate the answer to a calculation and use inverse operations to check answers</u> • <u>add and subtract numbers mentally, including:</u> <ul style="list-style-type: none"> ◦ <u>a three-digit number and ones</u> ◦ <u>a three-digit number and tens</u> ◦ <u>a three-digit number and hundreds</u> • <u>add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction</u> • <u>solve problems including missing number problems, using number facts, place value, and more complex addition and subtraction</u> • <u>recall and use multiplication and division facts for the 3, 4 and 9 multiplication tables</u> | <ul style="list-style-type: none"> • <u>measure, compare, add and subtract lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)</u> • <u>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks</u> • <u>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</u> • <u>know the number of seconds in a minute and the number of days in each month, year and leap year</u> • <u>compare durations of events (for example to calculate the time taken by particular events or tasks)</u> | <p><u>three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle</u></p> <ul style="list-style-type: none"> • <u>identify horizontal and vertical lines and pairs of perpendicular and parallel lines</u> | |
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- 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

Spring Term

- *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

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| | <p>are connected to m objects</p> <ul style="list-style-type: none"> • <u>count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit number or quantities by 10</u> • <u>recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators</u> • <u>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators</u> • <u>solve problems that involve all of the above</u> <p>Summer Term</p> <ul style="list-style-type: none"> • <u>recognise and show, using diagrams, equivalent fractions with small denominators</u> • <u>compare and order unit fractions, and fractions with the same denominators</u> | | | |
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| | <ul style="list-style-type: none"> • <u>add and subtract fractions with the same denominator within one whole (for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$)</u> • <u>solve problems that involve all of the above</u> | | | |
| 4 | <p>Autumn Term</p> <ul style="list-style-type: none"> • <u>count in multiples of 6, 7, 9, 25 and 1000</u> • <u>count backwards through zero to include negative numbers</u> • <u>identify, represent and estimate numbers using different representation</u> • <u>read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value</u> • <u>find 1000 more or less than a given number</u> • <u>recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, ones)</u> • <u>order and compare number beyond 1000</u> | <p>Autumn Term</p> <ul style="list-style-type: none"> • <u>convert between different units of measure (for example, kilometre to metre; hour to minute)</u> • <u>estimate, compare and calculate different measures</u> • <u>measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</u> • <u>find the area of rectilinear shapes by counting squares</u> <p>Spring Term</p> <ul style="list-style-type: none"> • <i>convert between different units of measure (for example, kilometre to metre; hour to minute)</i> | <p>Autumn Term</p> <p>Spring Term</p> <p>Summer Term</p> <ul style="list-style-type: none"> • <u>compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes</u> • <u>identify lines of symmetry in 2-D shapes presented in different orientations</u> • <u>identify acute and obtuse angles and compare and order angles up to two right angles by size</u> • <u>identify lines of symmetry in 2-D shapes presented in different orientations</u> | <p>Autumn Term</p> <p>Spring Term</p> <p>Summer Term</p> <ul style="list-style-type: none"> • <u>interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs</u> • <u>solve comparison and difference problems using information presented in bar charts, pictograms, tables and other graphs</u> |



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| | <ul style="list-style-type: none"> • <u>round any number to the nearest 10, 100 or 1000</u> • <u>solve number and practical problems that involve all of the above and with increasingly large positive numbers</u> • <u>estimate and use inverse operations to check answers to calculations</u> • <u>add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate</u> • <u>solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why</u> • <u>recall multiplication and division facts for multiplication tables up to 12x12</u> • <u>use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1;</u> | <ul style="list-style-type: none"> • <i>estimate, compare and calculate different measures</i> • <i>measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres</i> • <i>find the area of rectilinear shapes by counting squares</i> <p>Summer Term</p> <ul style="list-style-type: none"> • <i>convert between different units of measure (for example, kilometre to metre; hour to minute)</i> • <i>estimate, compare and calculate different measures</i> • <i>estimate, compare and calculate different measures, including money in pounds and pence</i> • <i>read, write and convert time between analogue and digital 12- and 24-hour clocks</i> • <i>solve problems involving converting from hours to minute; minutes to seconds;</i> | <ul style="list-style-type: none"> • <u>complete a simple symmetric figure with respect to a specific line of symmetry</u> • <u>describe positions on a 2-D grid as coordinates in the first quadrant</u> • <u>describe movements between positions as translations of a given unit to the left/right and up/down</u> • <u>plot specified points and draw sides to complete a given polygon</u> | |
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| | <p><u>dividing by 1; multiplying together three numbers</u></p> <ul style="list-style-type: none">• <u>recognise and use factor pairs in commutativity in mental calculations</u> <p>Spring Term</p> <ul style="list-style-type: none">• <i>recall multiplication and division facts for multiplication tables up to 12x12</i>• <i>use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers</i>• <i>recognise and use factor pairs in commutativity in mental calculations</i>• <u>multiply two-digit and three-digit numbers by a one-digit number using formal written layout</u>• <u>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</u> | <p><u>years to months; weeks to days</u></p> | | |
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| | <p>such as n objects are connected to m objects</p> <ul style="list-style-type: none"> • <u>count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten</u> • <u>recognise and show, using diagrams, families of common equivalent fractions</u> • <u>add and subtract fractions with the same denominator</u> • <u>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</u> • <u>recognise and write decimal equivalents of any number of tenths and hundredths</u> • <u>recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$</u> • <u>find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answers as ones, tenths and hundredths</u> | | | |
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| | <ul style="list-style-type: none"> • <u>solve simple measure and money problems involving fractions and decimals to two decimal places</u> <p>Summer Term</p> <ul style="list-style-type: none"> • recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ • find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answers as ones, tenths and hundredths • <u>round decimals with one decimal place to the nearest whole number</u> • <u>compare numbers with the same number of decimal places up to two decimal places</u> • solve simple measure and money problems involving fractions and decimals to two decimal places | | | |
| 5 | <p>Autumn Term</p> <ul style="list-style-type: none"> • <u>count forwards or backwards in steps of powers of 10 for any given number up to 1000000</u> | <p>Autumn Term</p> <ul style="list-style-type: none"> • <u>measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</u> | <p>Autumn Term</p> <p>Spring Term</p> | <p>Autumn Term</p> <ul style="list-style-type: none"> ○ complete, read and interpret information in tables, including timetables |



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| | <ul style="list-style-type: none"> • <u>count forwards and backwards with positive and negative whole numbers, including through zero</u> • <u>read, write, order and compare numbers to at least 1000000 and determine the value of each digit</u> • <u>read Roman numerals to 1000 (M) and recognise years written in Roman numerals</u> • <u>interpret negative numbers in context</u> • <u>round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000</u> • <u>solve number problems and practical problems that involve all of the above</u> • <u>use rounding to check answers to calculation and determine, in the context of a problem, levels of accuracy</u> • <u>add and subtract whole number with more than 4</u> | <ul style="list-style-type: none"> • <u>calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes</u> • <u>estimate volume (for example, using 1cm³ blocks to build cuboids [including cubes]) and capacity (for example, using water)</u> <p>Spring Term</p> <p>Summer Term</p> <ul style="list-style-type: none"> • <u>convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)</u> • <u>understand and use approximate equivalences between metric units and common imperial units</u> | <p>Summer Term</p> <ul style="list-style-type: none"> • <u>distinguish between regular and irregular polygons based on reasoning about equal sides and angles</u> • <u>use the properties of rectangles to deduce related facts and find missing lengths and angles</u> • <u>identify 3-D shapes, including cubes and other cuboids, from 2-D representations</u> • <u>know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles</u> • <u>draw given angles, and measure them in degrees</u> • <u>identify:</u> <ul style="list-style-type: none"> ◦ <u>angles at a point and one whole turn (total 360°)</u> ◦ <u>angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°)</u> ◦ <u>other multiples of 90°</u> • <u>identify, describe and represent the position of a shape following a reflection</u> | <ul style="list-style-type: none"> ◦ <u>solve comparison, sum and difference problems using information presented in a line graph</u> <p>Spring Term</p> <p>Summer Term</p> |
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| | <p><u>digits, including formal written methods (columnar addition and subtraction)</u></p> <ul style="list-style-type: none">• <u>add and subtract numbers mentally with increasingly large numbers</u>• <u>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</u>• <u>solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</u>• <u>identify multiples and factors, including finding factor pairs of a number, and common factors of two numbers</u>• <u>know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers</u>• <u>establish whether a number up to 100 is prime and</u> | <p><u>such as inches, pounds and pints</u></p> <ul style="list-style-type: none">• <u>use all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation, including scaling</u>• <u>use all four operations to solve problems involving measure (for example, money)</u>• <u>solve problems involving converting between units of time</u>• <i>measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres</i>• <i>calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes</i>• <i>estimate volume (for example, using 1cm³ blocks to build cuboids [including</i> | <p><u>or translation, using the appropriate language, and know that the shape has not changed</u></p> | |
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| | <p><u>recall all of the prime numbers up to 19</u></p> <ul style="list-style-type: none">• <u>recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3)</u>• <u>multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers</u>• <u>multiply and divide numbers mentally drawing upon known facts</u>• <u>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</u>• <u>multiply and divide whole numbers and those involving decimals by 10, 100 and 1000</u>• <u>solve problems involving multiplication and division including using their knowledge of factors and</u> | <p><i>cubes]) and capacity (for example, using water)</i></p> | | |
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multiples, squares and
cubes

- solve problems involving
multiplication and division,
including scaling by simple
fractions and problems
involving simple rates

Spring Term

- *digits by a one- or two-digit
number using a formal
written method, including
long multiplication for two-
digit numbers*
- *multiply and divide
numbers mentally drawing
upon known facts*
- *divide numbers up to 4
digits by a one-digit
number using the formal
written method of short
division and interpret
remainders appropriately
for the context*
- *multiply and divide whole
numbers and those
involving decimals by 10,
100 and 1000*
- *solve problems involving
multiplication and division
including using their*

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| | <p>knowledge of factors and multiples, squares and cubes</p> <ul style="list-style-type: none"> • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the equals sign • <u>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</u> • <u>recognise mixed numbers and improper fractions and convert one form to the other and write mathematical statements > 1 as a mixed number (for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$)</u> • <u>compare and order fractions whose denominators are all</u> | | | |
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| | <p><u>multiples of the same number</u></p> <ul style="list-style-type: none"> • <u>add and subtract fractions with the same denominator and denominators that are multiples of the same number</u> • <u>multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</u> • <u>read and write decimal number as fractions (for example, $0.71 = \frac{71}{100}$)</u> • <u>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents</u> • <u>round decimals with two decimal places to the nearest whole number and to one decimal place</u> • <u>read, write, order and compare numbers with up to three decimal places</u> • <u>recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction</u> | | | |
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with denominator 100, and
as a decimal

- solve problems which
require knowing
percentage and decimal
equivalents of $\frac{1}{2}, \frac{1}{4}, \frac{1}{5}, \frac{2}{5}, \frac{4}{5}$
and those fractions with a
denominator of a multiple
of 10 or 25

Summer Term

- *digits by a one- or two-digit
number using a formal
written method, including
long multiplication for two-
digit numbers*
- *multiply and divide
numbers mentally drawing
upon known facts*
- *divide numbers up to 4
digits by a one-digit
number using the formal
written method of short
division and interpret
remainders appropriately
for the context*
- *multiply and divide whole
numbers and those*



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| | <p><i>involving decimals by 10, 100 and 1000</i></p> <ul style="list-style-type: none"> • <u>solve problems involving numbers up to three decimal places</u> | | | |
| 6 | <p>Autumn Term</p> <ul style="list-style-type: none"> • <u>read and write numbers up to 10000000 and determine the value of each digit</u> • <u>order and compare numbers up to 10000000 and determine the value of each digit</u> • <u>round any whole number to a required degree of accuracy</u> • <u>use negative numbers in context, and calculate intervals across zero</u> • <u>solve number and practical problems that involve all of the above</u> • <u>perform mental calculations, including with mixed operations and large numbers</u> • <u>use their knowledge of the order of operations to carry out calculations</u> | <p>Autumn Term</p> <p>Spring Term</p> <ul style="list-style-type: none"> • <u>solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate</u> • <u>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</u> • <u>convert between miles and kilometres</u> • <u>recognise that shapes with the same areas can have different</u> | <p>Autumn Term</p> <ul style="list-style-type: none"> • <u>describe positions on a full coordinate grid (all four quadrants)</u> • <u>draw and translate simple shapes on the coordinate plane, and reflect them in the axes</u> <p>Spring Term</p> <p>Summer Term</p> <ul style="list-style-type: none"> • <u>draw 2-D shapes using given dimensions and angles</u> • <u>compare and classify geometric shapes based on their properties and sizes</u> • <u>illustrate and name parts of a circle, including radius, diameter and circumference and</u> | <p>Autumn Term</p> <p>Spring Term</p> <p>Summer Term</p> <ul style="list-style-type: none"> • <u>interpret and construct pie charts and line graphs and use these to solve problems</u> • <u>calculate and interpret the mean as an average</u> |



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| | <p><u>involving the four operations</u></p> <ul style="list-style-type: none"> • <u>solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why</u> • <u>identify common factors, common multiples and prime numbers</u> • <u>use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy</u> • <u>multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication</u> • <u>divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as</u> | <p><u>perimeters and vice versa</u></p> <ul style="list-style-type: none"> • <u>recognise when it is possible to use formulae for area and volume of shapes</u> • <u>calculate the area of parallelograms and triangles</u> • <u>calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm³) and cubic metres (m³), and extending to other units (for example, mm³ and km³)</u> <p>Summer Term</p> <ul style="list-style-type: none"> • <u>use read, write and convert between standard units, converting measurements of time from a smaller unit of measure to a larger unit, and vice versa</u> | <p><u>know that the diameter is twice the radius</u></p> <ul style="list-style-type: none"> • <u>recognise, describe and build simple 3-D shapes, including making nets</u> • <u>find unknown angles in any triangles, quadrilaterals and regular polygons</u> • <u>recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles</u> | |
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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
- perform mental
calculations, including
with mixed operations
and large numbers
- solve problems involving
addition, subtraction,
multiplication and
division
- use their knowledge of
the order of operations
to carry out calculations
involving the four
operations
- 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 (for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$)
- divide proper fractions by whole numbers (for example, $\frac{1}{3} \div 2 = \frac{1}{6}$)

Spring Term

- identify the value of each digit in numbers given to three decimal places
- multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places

- 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
- associate a fraction with division and calculate decimal fraction equivalents (for example, 0.375) for a simple fractions (for example, $\frac{3}{8}$)
- recall and use equivalences between simple fractions, decimals and percentages, including in different contexts
- 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
 - use simple formulae
 - generate and describe
linear number
sequences
 - express missing number
problems algebraically
 - find pairs of numbers
that satisfy an equation
with two unknowns
 - enumerate possibilities
of combinations of two
variables

Summer Term