

End of Year Expectations in Maths



End of Year Expectations

- The following pages outline the national expectations for children in Year 1-6 by the end of the academic year.
- The expectations are from the new National Curriculum which was introduced in September 2014
- By the end of the year, some children will have met all of the 'expected' objectives and will be deepening knowledge and mastering skills through independent application in preparation for the following academic year

Programme of Study	Curriculum Aspect	Key Skills: Emerging	Key Skills: Developing	Key Skills: Secure
<p>Year 1</p>	<p>Number and Place Value</p>	<p>E: Count to and across 20, forwards and backwards, beginning with 0 or 1, or from any given number. E: Count, read and write numbers to 10 in numerals. E: Given a number, identify 1 more and 1 less. E: Identify and represent numbers using objects and pictorial representations. E: Use the language of: more than, less than (fewer), most, least. E: Read and write numbers from 1 to 10 in numerals and words. E: Find the total of two groups by combining. E: Calculate subtractions through taking away. E: Represent addition and subtraction calculations using objects and pictorial representations. E: Know and use addition and subtraction number facts to 5 and some facts to 10. E: Add and subtract one-digit numbers. E: Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations. E: Begin to recall doubles and halves of numbers to 5. E: Count in multiples of 2 and 10. E: Solve simple problems involving grouping and sharing with pictorial representations and arrays with the support of the teacher. E: Recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity.</p>	<p>D: Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number. D: Count, read and write numbers to 100 in numerals; count in multiples of 2s, 5s and 10s. D: Given a number, identify 1 more and 1 less. D: Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. D: Read and write numbers from 1 to 20 in numerals and words. D: Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. D: Represent and use number bonds and related subtraction facts within 20. D: Add and subtract one-digit and two-digit numbers to 20, including 0. D: Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = ? - 9$. D: 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. D: Recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity. D: Recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity.</p>	<p>S: Demonstrate fluency when counting to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number and when counting in multiples of 2s, 5s and 10s. S: Consistently identify 1 more and 1 less from a given number and use in solving problems. S: Identify and represent numbers using increasingly complex representations including the number line. S: Consistently use the language of: equal to, more than, less than (fewer), most, least accurately when comparing numbers and expressions. S: Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. S: Recall, and use number facts to 20 fluently and use these to derive new unknown facts. S: Add and subtract one-digit and two-digit numbers to 20 mentally. S: Solve two-step problems that involve addition and subtraction, using concrete objects and pictorial representations. S: Solve missing number problems using a wider range of numbers. S: Count in 2s, 5s, and 10 from 0 to answer questions involving x facts. S: Begin to understand division as the inverse of multiplication and use facts in problem solving. S: Recall doubles and halves of numbers to 20.</p>

				<p>S: Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays.</p> <p>S: Recognise and name a half and quarter of a length, shape, set of objects or quantity.</p>
	<p>Geometry and Measures</p>	<p>E: Use the language of measures to make direct comparisons between $\frac{2}{3}$ objects.</p> <p>E: Solve simple measure problems (length, mass/weight, capacity and volume and time) in a practical context using direct comparison and non-standard units.</p> <p>E: Recognise and sort coins to £1.</p> <p>E: Use language related to time e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.</p> <p>E: Tell the time to the nearest hour.</p> <p>E: Recognise and name some common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles], 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].</p> <p>E: Sort shapes based on simple properties.</p> <p>E: Describe position, direction and movement, including whole, half -turns.</p>	<p>D: Compare, describe and solve practical problems for: lengths and heights, mass/weight, capacity and volume, time.</p> <p>D: Measure and begin to record the following: lengths and heights, mass/weight, capacity and volume, time, recognise and know the value of different denominations of coins and notes, sequence events in chronological order using language.</p> <p>D: Recognise and use language relating to dates, including days of the week, weeks, months and years.</p> <p>D: Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.</p> <p>D: Recognise and name some common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles], 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].</p> <p>D: Describe position, direction and movement, including whole, half, quarter and three-quarter turns.</p>	<p>S: Use knowledge of measures in solving problems of increasingly complexity.</p> <p>S: Solve more complex problems involving money and other measures including time.</p> <p>S: Be able to apply knowledge of measures to other curriculum areas in practical activities.</p> <p>S: Compare and sort shapes using 1 criterion.</p> <p>S: Recognise and name common 2-D and 3-D shapes, describing their properties using increasingly sophisticated mathematical vocabulary.</p> <p>S: Reason about and solve more complex problems relating to shapes and their properties.</p> <p>S: Apply knowledge of position to problem solving across the curriculum.</p> <p>S: Solve more complex problems involving position and movement.</p>

Programme of Study	Curriculum Aspect	Key Skills: Emerging	Key Skills: Developing	Key Skills: Secure
<p style="text-align: center;">Year 2</p>	<p style="text-align: center;">Number and Place Value</p>	<p>E: Count to and across 100, forwards or backwards, beginning with 0 or 1, or from any given number. E: Count in multiples of 2s, 5s and 10s. E: Count in steps of 10 within 100, starting from any number. E: Read and write numbers from 1 to 100 in numerals, and up to 20 in words (not necessarily spelled correctly). E: Use the place value of each digit to order numbers to 100. E: Know the number that is 1 more and 1 less than any number up to 100. E: Use the language of least. E: Identify and represent numbers using objects, structured apparatus and number lines. E: Use place value and number facts to solve simple problems. E: Recall and use addition and subtraction facts for all numbers up to 10. E: Add and subtract numbers mentally, including: 2 single-digit numbers, a number up to 20 and 1s. E: Add and subtract numbers using concrete objects, pictorial representations and the written columnar method including: a two-digit number and 1, adding 3 single-digit numbers with a total up to 20. E: Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=). E: Solve missing number addition problems involving single-digit numbers. E: Solve simple 1 or 2 step problems with addition and subtraction. E: Show that addition can be done in any order (commutative). E: Recall multiplication facts for the 10</p>	<p>D: Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward. D: Recognise the place value of each digit in a two-digit number (tens, ones). D: Identify, represent and estimate numbers using different representations, including the number line. D: Compare and order numbers from 0 up to 100; use <, > and = signs. D: Read and write numbers to at least 100 in numerals and in words. D: Use place value and number facts to solve problems. D: Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods. D: Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. D: Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and tens, two two-digit numbers. D: Add three one-digit numbers. D: Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. D: Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. D: Recall and use multiplication and</p>	<p>S: Demonstrate fluency and reasoning in counting forwards and backwards in steps of 2, 5 and 10 including from different starting points and using numbers beyond 100. S: Consistently use less than (<), equals (=) and greater than (>) signs correctly when comparing numbers and expressions. S: Identify and represent numbers using different representations including more complex number lines. S: Demonstrate reasoning about place value and number facts to solve more complex problems. S: Recall and use addition and subtraction facts to 20 fluently; derive and use related facts to 100 and beyond. S: Add and subtract numbers mentally using appropriate strategies, including: 2 2-digit numbers, adding /subtracting several single-digit numbers. S: Add and subtract numbers using objects, pictorial representations and the written columnar method including: adding several 2-digit numbers, subtracting 2-digit numbers, adding a 2-digit number to a 3-digit number, adding 3-digit numbers. S: Solve missing number problems involving a wider range of numbers. S: Use addition and subtraction facts to solve more complex problems, such as 3 step problems. S: Rapidly recall and use multiplication and division facts for the 2, 5 and multiplication tables</p>

		<p>multiplication table and use them to derive division facts, and count in steps of 10 to answer questions. E: Recall and use doubling and halving facts for numbers up to double 10 and other significant doubles. E: Recognise odd and even numbers to 20. E: Solve simple problems involving grouping and sharing, using objects, pictorial representations and arrays. E: Recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity. E: Begin to solve simple problems involving fractions.</p>	<p>division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. D: Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs. D: Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. D: Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. D: Recognise find, name and write fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$ of a length, shape, set of objects or quantity. D: Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.</p>	<p>and write mathematical statements using the multiplication (\times), division (\div) and equals (=) signs. S: Count in 3s to solve multiplication and division problems for the 3 multiplication table. S: Solve more complex problems involving multiplication and division in a range of contexts including measures. S: Make connections between place value and multiplication/division by 10 and use known multiplication and division facts to derive others. S: Express more complex problems using fraction notation and solve them.</p>
	<p>Geometry and Measures</p>	<p>E: Measure and begin to record the following: lengths and heights, mass/weight, capacity and volume, time. E: Recognise and know the value of different denominations of coins and notes. E: Begin to recognise and use the symbols for pounds (£) and pence (p). E: Combine amounts to make small values. E: Sequence the events of several days in chronological order using appropriate language. E: Tell the time to half past the hour; turn the hands of a geared clock to show these times; draw hands on a clock face to show o'clock times. E: Recognise and use language relating to dates, including days of the week, weeks, months and years. E: Know there are 7 days in a week. E: Know the name of the day before or after a given day.</p>	<p>D: Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ($^{\circ}\text{C}$); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. D: Compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$. D: Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value. D: Find different combinations of coins that equal the same amounts of money. D: Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change. D: Compare and sequence intervals of time. D: Tell and write the time to five minutes,</p>	<p>S: Find all possible combinations of coins to equal a given amount or how to pay a given amount using the fewest possible number of coins. S: Know that there are 60 minutes in an hour and 24 hours in a day and use these facts to solve problems. S: Tell and write the time to 5 minutes and draw hands on a clock face to show these times. S: Solve more complex problems involving money and other measures, including time. S: Reason about multiplicative relationships between specific measured quantities, drawing on knowledge of 2, 5 and 10 tables and knowledge of fractions. S: Compare and sort common 2-D and 3-D shapes and common objects, using more than 1 criterion, identifying and describing their properties.</p>

		<p>E: Solve simple measure problems in a practical context using standardised units.</p> <p>E: Recognise, name and describe the properties of common 2-D shapes including pentagons and hexagons.</p> <p>E: Recognise, name and describe the properties of common 3-D shapes including cones and spheres.</p> <p>E: Solve simple problems involving shapes.</p> <p>E: Describe position, directions and movement, including whole, half, quarter and three-quarter turns.</p> <p>E: Solve simple problems involving position and direction.</p> <p>E: Interpret and construct simple pictograms where the picture is worth 1 unit.</p> <p>E: Interpret simple tally charts and block diagrams.</p> <p>E: Ask and answer questions that require counting the number of objects in each category.</p>	<p>including quarter past/to the hour and draw the hands on a clock face to show these times.</p> <p>D: Know the number of minutes in an hour and the number of hours in a day.</p> <p>D: Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.</p> <p>D: Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.</p> <p>D: Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid].</p> <p>D: Compare and sort common 2-D and 3-D shapes and everyday objects.</p> <p>D: Order and arrange combinations of mathematical objects in patterns and sequences.</p> <p>D: 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 anticlockwise)</p> <p>D: Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.</p> <p>D: Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.</p> <p>D: Ask and answer questions about totalling and comparing categorical data.</p>	<p>S: Reason about and solve more complex problems involving shapes and their properties.</p> <p>S: Order and arrange combinations of mathematical objects in more complex patterns and sequences.</p> <p>S: Solve more complex problems involving position and direction.</p> <p>S: Interpret and construct pictograms (where the symbols show many to one correspondence), block diagrams (where the scale is divided into 2s or 5s) and more complex tables.</p> <p>S: Use more complex charts to ask and answer questions by reading from the chart the number of objects in each category, sorting the categories by quantity, totalling and comparing categorical data.</p>
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Programme of Study	Curriculum Aspect	Key Skills: Emerging	Key Skills: Developing	Key Skills: Secure
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Year 3

Number and Place Value

E: Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.
 E: Recognise the place value of each digit in a two-digit number (tens, ones).
 E: Identify represent and estimate numbers using different representations, including the number line.
 E: Compare and order numbers from 0 up to 100; use and = signs.
 E: Read and write numbers to at least 100 in numerals and in words.
 E: Use place value and number facts to solve problems.
 E: Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods.
 E: Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.
 E: Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones, a two-digit number and ten, two two-digit numbers, adding three one-digit numbers show that addition of two numbers can be
 E: Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.
 E: Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.
 E: Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (\times), division (\div) and equals (=) signs.
 E: Show that multiplication of two numbers can be done in any order

D: Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.
 D: Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).
 D: Compare and order numbers up to 1000.
 D: Identify, represent and estimate numbers using different representations.
 D: Read and write numbers up to 1000 in numerals and in words.
 D: Solve number problems and practical problems involving these ideas.
 D: Add and subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds.
 D: Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.
 D: Estimate the answer to a calculation and use inverse operations to check answers.
 D: Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.
 D: Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
 D: 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.
 D: Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.

S: Show fluency in the use of number facts and are able to make generalisations based on these to find unknown facts.
 S: Demonstrate a secure understanding of place value and have fluency when working with numbers up to and above 1000.
 S: Apply place value and number facts knowledge to solving problems involving number and place value in a range of familiar and unfamiliar contexts.
 S: Demonstrate rapid recall of number facts which they can use to generate new unknown facts.
 S: Use rapid recall of number facts to support their repertoire of calculation strategies, both mental and written.
 S: Use a range of efficient written and mental calculation strategies to use in calculation.
 S: Draw on their repertoire of calculation strategies in problem solving, explaining their choices and communicating their reasoning.
 S: Communicate their ideas as well as following a reasoned argument.
 S: Demonstrate rapid recall of multiplication and division facts and the ability to use these to derive related facts to solve problems.
 S: Show a repertoire of written and mental calculation methods to solve problems that involve multiplication and division. They are able to communicate their reasoning and explain their thinking.
 S: Apply their understanding of multiplication and division to a wider range of problem solving contexts such as shape and measures.
 S: Apply knowledge of fractions to solving problems of increasingly complexity.

		<p>(commutative) and division of one number by another cannot.</p> <p>E: Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</p> <p>E: Recognise find, name and write fractions $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{2}{4}$ and $\frac{3}{4}$ of a length, shape, set of objects or quantity.</p> <p>E: Write simple fractions for example, $\frac{1}{2}$ of 6 = 3 and recognise the equivalence of $\frac{2}{4}$ and $\frac{1}{2}$.</p>	<p>D: Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.</p> <p>D: Recognise find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.</p> <p>D: Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.</p> <p>D: Recognise and show, using diagrams, equivalent fractions with small denominator.</p> <p>D: Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$].</p> <p>D: Compare and order unit fractions, and fractions with the same denominators.</p> <p>D: Solve problems that involve all of the above.</p>	<p>S: Show understanding of the connections between areas of learning in fractions such as the ability to recognise equivalency and links to decimal place value.</p> <p>S: Use fractions in problem solving, explaining reasoning in problems involving measures shape and statistics.</p>
	<h2>Geometry and Measures</h2>	<p>E: Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (oC); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels.</p> <p>E: Compare and order lengths, mass, volume/capacity and record the results using >, < and =.</p> <p>E: Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.</p> <p>E: Find different combinations of coins that equal the same amounts of money.</p> <p>E: Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.</p> <p>E: Compare and sequence intervals of time and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times know the number of minutes</p>	<p>D: Measure compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).</p> <p>D: Measure the perimeter of simple 2-D shapes.</p> <p>D: Add and subtract amounts of money to give change, using both £ and p in practical contexts.</p> <p>D: Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks.</p> <p>D: 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.</p> <p>D: Know the number of seconds in a minute and the number of days in each month, year and leap year.</p> <p>D: Compare durations of events [for example to calculate the time taken by</p>	<p>S: Use a wide range of tools when working with measures and can move more fluently between different units.</p> <p>S: Use understanding of other areas of the curriculum to solve problems and calculations involving measures e.g. Multiplication.</p> <p>S: Apply their understanding to solve problems of increasing complexity and can reason about their choices.</p> <p>S: Apply knowledge and understanding of the properties of shapes to a wider range of regular and irregular 2D and 3D shapes.</p> <p>S: Work with an increasing level of accuracy describing the properties of shapes.</p> <p>S: Apply their knowledge and understanding to solving problems of increasingly complexity as well as communicating their reasoning.</p> <p>S: Apply knowledge of position and</p>

		<p>in an hour and the number of hours in a day.</p> <p>E: Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line.</p> <p>E: Identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces.</p> <p>E: Identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid].</p> <p>E: Compare and sort common 2-D and 3-D shapes and everyday objects.</p> <p>E: Order and arrange combinations of mathematical objects in patterns and sequences.</p> <p>E: 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 anticlockwise)</p> <p>E: Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.</p> <p>E: Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.</p> <p>E: Ask and answer questions about totalling and comparing categorical data.</p>	<p>particular events or tasks].</p> <p>D: Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them.</p> <p>D: Recognise angles as a property of shape or a description of a turn.</p> <p>D: Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle.</p> <p>D: Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</p> <p>D: 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 anticlockwise)</p> <p>D: 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?'].</p> <p>D: Use information presented in scaled bar charts and pictograms and tables.</p>	<p>movement to solving problems.</p> <p>S: Be able to use mathematical vocabulary to describe the position and movement of a given unit.</p> <p>S: Interpret data to answer questions related to problems across the curriculum.</p> <p>S: Interpret data and read scales with increased accuracy with different divisions using knowledge of number.</p> <p>S: Pose their own questions and formulate hypothesis and make decisions about how to collect data to solve problems.</p> <p>S: Reason and explain their decisions.</p>
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Programme of Study	Curriculum Aspect	Key Skills: Emerging	Key Skills: Developing	Key Skills: Secure
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<h1 style="text-align: center;">Year 4</h1>	<h2 style="text-align: center;">Number and Place Value</h2>	<p>E: Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.</p> <p>E: Recognise the place value of each digit in a three-digit number (hundreds, tens, ones).</p> <p>E: Compare and order numbers up to 1000.</p> <p>E: Identify, represent and estimate numbers using different representations.</p> <p>E: Read and write numbers up to 1000 in numerals and in words.</p> <p>E: Solve number problems and practical problems involving these ideas.</p> <p>E: Add and subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds.</p> <p>E: Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction.</p> <p>E: Estimate the answer to a calculation and use inverse operations to check answers.</p> <p>E: Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.</p> <p>E: Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.</p> <p>E: 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.</p> <p>E: Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.</p> <p>E: Count up and down in tenths; recognise that tenths arise from dividing</p>	<p>Count in multiples of 6, 7, 9, 25 and 1000 find 1000 more or less than a given number.</p> <p>Count backwards through zero to include negative numbers.</p> <p>Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).</p> <p>Order and compare numbers beyond 1000.</p> <p>Identify represent and estimate numbers using different representations.</p> <p>Round any number to the nearest 10, 100 or 1000.</p> <p>Solve number and practical problems that involve all of the above and with increasingly large positive numbers.</p> <p>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.</p> <p>Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</p> <p>Estimate and use inverse operations to check answers to a calculation.</p> <p>Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</p> <p>Recall multiplication and division facts for multiplication tables up to 12×12.</p> <p>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.</p> <p>Recognise and use factor pairs and commutativity in mental calculations.</p> <p>Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.</p> <p>Solve problems involving multiplying and adding, including using the distributive law to multiply two digit</p>	<p>S: Demonstrate very good understanding of place value and is able to apply this to working with larger numbers/decimals.</p> <p>S: Demonstrate confidence to use knowledge of place value in solving problems.</p> <p>S: Apply their understanding to solving increasingly complex problems, is able to reason and explain their thinking.</p> <p>S: Demonstrate rapid recall of number facts and is able to use these fluently to generalise to obtain new facts.</p> <p>S: Show a wide repertoire of reliable and efficient of calculation strategies, both written and mental, that they are able to apply when solving problems.</p> <p>S: Make choices regarding choice of strategies and explain reasoning.</p> <p>S: Solve problems of increasingly complexity using a range of strategies and is able to communicate their reasoning.</p> <p>S: Demonstrate rapid and fluent recall of all x facts to 12×12 and is able to use their knowledge to generate new facts.</p> <p>S: Show a clear understanding of the different structures of multiplication and division and the related vocabulary.</p> <p>S: Demonstrate a wide repertoire of reliable and efficient of calculation strategies, both written and mental, that they are able to apply when solving problems.</p> <p>S: Solve problems of increasingly complexity using a range of strategies and is able to communicate their reasoning.</p> <p>S: Apply knowledge of fractions to problems involving measures and shapes.</p> <p>S: Apply links with division to solving</p>
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		<p>an object into 10 equal parts and in dividing one-digit numbers or quantities by 10.</p> <p>E: Recognise, find and write fractions of a discrete set of objects: unit fractions and non- unit fractions with small denominators.</p> <p>E: Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators.</p> <p>E: Recognise and show, using diagrams, equivalent fractions with small denominator.</p> <p>E: Add and subtract fractions with the same denominator within one whole [for example, $5/7 + 1/7 = 6/7$]</p> <p>E: Compare and order unit fractions, and fractions with the same denominators.</p> <p>E: Solve problems that involve all of the above.</p>	<p>numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.</p> <p>Recognise and show, using diagrams, families of common equivalent fractions count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.</p> <p>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.</p> <p>Add and subtract fractions with the same denominator.</p> <p>Recognise and write decimal equivalents of any number of tenths or hundredths.</p> <p>Recognise and write decimal equivalents to $1/4$, $1/2$, $3/4$.</p> <p>Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.</p> <p>Round decimals with one decimal place to the nearest whole number.</p> <p>Compare numbers with the same number of decimal places up to two decimal places.</p> <p>Solve simple measure and money problems involving fractions and decimals to two decimal places.</p>	<p>increasingly complex problems.</p> <p>S: Show a good understanding of the connections between fractions and decimals and is able to use their knowledge to translate between the two.</p> <p>S: Apply their knowledge of fractions to problems of increasing complexity and to explain their reasoning and thinking.</p>
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	<p style="text-align: center;">Geometry and Measures</p>	<p>E: Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml). E: Measure the perimeter of simple 2-D shapes. E: Add and subtract amounts of money to give change, using both £ and p in practical contexts. E: Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. E: 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. E: Know the number of seconds in a minute and the number of days in each month, year and leap year. E: Compare durations of events [for example to calculate the time taken by particular events or tasks]. E: Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them. E: Recognise angles as a property of shape or a description of a turn. E: Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. E: Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. E: 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</p>	<p>D: Convert between different units of measure [for example, kilometre to metre; hour to minute]. D: Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. D: Find the area of rectilinear shapes by counting squares. D: Estimate, compare and calculate different measures, including money in pounds and pence. D: Read, write and convert time between analogue and digital 12- and 24-hour clocks. D: Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. D: Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. D: Identify acute and obtuse angles and compare and order angles up to two right angles by size. D: Identify lines of symmetry in 2-D shapes presented in different orientations. D: Complete a simple symmetric figure with respect to a specific line of symmetry. D: Describe positions on a 2-D grid as coordinates in the first quadrant. D: Describe movements between positions as translations of a given unit to the left/right and up/down. D: Plot specified points and draw sides to complete a given polygon. D: Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. D: Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</p>	<p>S: Convert fluently and efficiently between different units of measures and be able to reason about the multiplicative relationship between related measures. S: Use their understanding of the concepts related to measures to solve increasingly complex problems. S: Make connections to other areas of mathematics such as fractions, decimals and use this to solve problems. S: Communicate reasoning and talk about mathematics using appropriate language. S: Apply knowledge of measures to other areas of the curriculum such as science. S: Sort and classify shapes using a range of criterion using mathematically appropriate vocabulary. S: Apply knowledge of shapes to solving problems with increasing complexity explaining reasoning. S: Make links and connections with other areas of the curriculum. S: Solve increasingly complex problems involving position and movement. S: Apply knowledge and understanding of position and movement to other curriculum areas such as geography and science. S: Use knowledge of data handling to pose hypothesis and answer questions through the analysis and interpretation of data. S: Draw conclusions based on data and be able to justify reasoning.</p>
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		<p>turns (clockwise and anti-clockwise)</p> <p>E: 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>		
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Programme of Study	Curriculum Aspect	Key Skills: Emerging	Key Skills: Developing	Key Skills: Secure
Year 5	Number and Place Value	<p>E: Count in multiples of 6, 7, 9, 25 and 1000.</p> <p>E: Find 1000 more or less than a given number.</p> <p>E: Count backwards through zero to include negative numbers.</p> <p>E: Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones).</p> <p>E: Order and compare numbers beyond 1000.</p> <p>E: Identify, represent and estimate numbers using different representations.</p> <p>E: Round any number to the nearest 10, 100 or 1000.</p> <p>E: Solve number and practical problems</p>	<p>D: Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.</p> <p>D: Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.</p> <p>D: Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.</p> <p>D: Solve number problems and practical problems that involve all of the above.</p>	<p>S: Demonstrate rapid recall of number facts and is able to use these fluently to generalise to obtain new facts using place value.</p> <p>S: Show very good understanding of place value and is able to apply this to working with larger numbers/decimals and in solving problems.</p> <p>S: Apply their understanding to solve increasingly complex problems, and is able to reason and explain their thinking.</p> <p>S: Demonstrate rapid recall of number</p>

		<p>that involve all of the above and with increasingly large positive numbers.</p> <p>E: 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</p> <p>E: Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.</p> <p>E: Estimate and use inverse operations to check answers to a calculation.</p> <p>E: Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</p> <p>E: Recall multiplication and division facts for multiplication tables up to 12×12.</p> <p>E: 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.</p> <p>E: Recognise and use factor pairs and commutativity in mental calculations.</p> <p>E: Multiply two-digit and three-digit numbers by a one-digit number using formal written layout.</p> <p>E: Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.</p> <p>E: Recognise and show, using diagrams, families of common equivalent fractions.</p> <p>E: Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.</p> <p>E: Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the</p>	<p>D: Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.</p> <p>D: Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).</p> <p>D: Add and subtract numbers mentally with increasingly large numbers.</p> <p>D: Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p> <p>D: Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p> <p>D: Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</p> <p>D: Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers.</p> <p>D: Establish whether a number up to 100 is prime & recall prime numbers up to 19.</p> <p>D: 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.</p> <p>D: Multiply and divide numbers mentally drawing upon known facts.</p> <p>D: 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.</p> <p>D: Multiply and divide whole numbers and those involving decimals by 10, 100 & 1000.</p> <p>D: Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).</p> <p>D: Solve problems involving multiplication and division including using their knowledge of factors and</p>	<p>facts and is able to use these fluently to generalise to obtain new facts.</p> <p>S: Show a wide repertoire of reliable and efficient of calculation strategies, both written and mental, that they are able to apply when solving problems.</p> <p>S: Make choices regarding choice of strategies and explain reasoning.</p> <p>S: Solve problems of increasingly complexity using a range of strategies and is able to communicate their reasoning.</p> <p>S: Explain why different methods give the same result.</p> <p>S: Demonstrate creative thinking when problem solving, and is able to justify and prove.</p> <p>S: Demonstrate rapid and fluent recall of all x facts to 12×12 and is able to use their knowledge to generate new facts and when working with larger numbers.</p> <p>S: Apply knowledge of factors, multiples, prime number, squares and commutativity to solving mental calculations of more complex problems.</p> <p>S: Show a clear understanding of the different structures of multiplication and division and the related vocabulary and is able to apply this to solving increasingly complex problems.</p> <p>S: Apply knowledge of the inverse operation and the links between division and multiplication to solving problems.</p> <p>S: Demonstrate a wide repertoire of reliable and efficient of calculation strategies, both written and mental, that they are able to apply when solving problems.</p> <p>S: Solve problems of increasingly</p>
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		<p>answer is a whole number. E: Add and subtract fractions with the same denominator. E: Recognise and write decimal equivalents of any number of tenths or hundredths. E: Recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$. E: Find the effect of dividing a one- or two- digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths. E: Round decimals with one decimal place to the nearest whole number. E: Compare numbers with the same number of decimal places up to two decimal places. E: Solve simple measure and money problems involving fractions and decimals to two decimal places.</p>	<p>multiples, squares and cubes. D: Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. D: Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. D: Compare and order fractions whose denominators are all multiples of the same number. D: Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. D: Recognise mixed numbers and improper fractions and convert from one form to the other & write mathematical statements > 1 as a mixed number [$2\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]. D: Add and subtract fractions with the same denominator and denominators that are multiples of the same number. D: Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams. D: Read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$]. D: Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. D: Round decimals with two decimal places to the nearest whole number and to one decimal place. D: Read, write, order & compare numbers with up to three decimal places. D: Solve problems involving number up to three decimal places. D: Recognise the percent symbol (%) and understand that percent relates to 'number of parts per hundred', write percentages as a fraction with denominator 100, & as a decimal. D: Solve problems which require</p>	<p>complexity using a range of strategies and is able to communicate their reasoning. S: Apply knowledge of fractions to problems involving measures and shapes. S: Use their knowledge of decimals in problem involving measure to work with increased accuracy. S: Show a very good understanding of the connections between fractions decimals and percentages and is able to use their knowledge to translate between the three. S: Apply their knowledge of fractions, decimals and percentages to problems of increasing complexity and to explain their reasoning and thinking. S: Apply links with division to solving increasingly complex problems.</p>
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			knowing percent & 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.	
	Geometry and Measures	<p>E: Convert between different units of measure [for example, kilometre to metre; hour to minute].</p> <p>E: Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.</p> <p>E: Find the area of rectilinear shapes by counting square.</p> <p>E: Estimate, compare and calculate different measures, including money in pounds and pence.</p> <p>E: Read, write and convert time between analogue and digital 12- and 24-hour clocks.</p> <p>E: Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.</p> <p>E: Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.</p> <p>E: Identify acute and obtuse angles and compare and order angles up to two right angles by size.</p> <p>E: Identify lines of symmetry in 2-D shapes presented in different orientations.</p> <p>E: Complete a simple symmetric figure with respect to a specific line of symmetry.</p> <p>E: Describe positions on a 2-D grid as coordinates in the first quadrant.</p> <p>E: Describe movements between positions as translations of a given unit to the left/right and up/down.</p> <p>E: Plot specified points and draw sides to complete a given polygon.</p> <p>E: Interpret and present discrete and continuous data using appropriate</p>	<p>D: Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre & millilitre).</p> <p>D: Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</p> <p>D: Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.</p> <p>D: 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.</p> <p>D: Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water].</p> <p>D: Solve problems involving converting between units of time.</p> <p>D: Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.</p> <p>D: Identify -D shapes, including cubes and other cuboids, from 2-D representations.</p> <p>D: Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.</p> <p>D: Draw given angles, and measure them in degrees (°).</p> <p>D: Identify angles at a point and one whole turn (total 360°) angles at a point</p>	<p>S: Apply knowledge of other areas of the curriculum to their understanding of and problems involving with measures. E.g. squares, cubes, fractions, multiplication decimals.</p> <p>S: Convert fluently and efficiently between different units of measures and be able to reason about the multiplicative relationship between related measures.</p> <p>S: Use their understanding of the concepts related to measures to solve increasingly complex problems.</p> <p>S: Communicate reasoning and talk about mathematics using sophisticated mathematical language.</p> <p>S: Apply knowledge of measures to other areas of the curriculum such as science.</p> <p>S: Sort and classify shapes using a wide range of criterion using increasingly sophisticated mathematically appropriate vocabulary.</p> <p>S: Creatively apply knowledge of shapes to solving problems with increasing complexity and be able to justify reasoning and communicate their thinking.</p> <p>S: Make links and connections with other areas of the curriculum and be able to generalise their understanding.</p> <p>S: Solve increasingly complex problems involving position and movement.</p>

		<p>graphical methods, including bar charts and time graphs.</p> <p>E: Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</p>	<p>on a straight line & 1/2 a turn (total 180°) and other multiples of 90°.</p> <p>D: Use the properties of rectangles to deduce related facts and find missing lengths and angles distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</p> <p>D: Identify describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.</p> <p>D: Solve comparison, sum and difference problems using information presented in a line graph.</p> <p>D: Complete read and interpret information in tables, including timetables.</p>	<p>S: Apply knowledge and understanding of position and movement to other curriculum areas such as geography and science.</p> <p>S: Use knowledge of data handling to pose hypothesis and answer questions through the analysis and interpretation of data.</p> <p>S: Draw conclusions based on data and be able to communicate reasoning. Be able to look for alternative explanations and hypothesis.</p> <p>S: Use understanding of statistics in other curriculum areas.</p>
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Programme of Study	Curriculum Aspect	Key Skills: Emerging	Key Skills: Developing	Key Skills: Secure
Year 6	Number and Place Value	<p>E: Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.</p> <p>E: Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.</p> <p>E: Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.</p> <p>E: Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.</p> <p>E: Solve number problems and practical problems that involve all of the above.</p> <p>E: Read Roman numerals to 1000 (M)</p>	<p>D: Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.</p> <p>D: Round any whole number to a required degree of accuracy.</p> <p>D: Use negative numbers in context, and calculate intervals across zero.</p> <p>D: Solve number and practical problems that involve all of the above.</p> <p>D: Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.</p> <p>D: Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and</p>	<p>S: Demonstrate rapid recall of number facts and is able to use these fluently to generalise to obtain new facts using place value.</p> <p>S: Show very good understanding of place value and is able to apply this to working with larger numbers/decimals and in solving problems.</p> <p>S: Apply their understanding to solving increasingly complex problems, is able to reason and explain their thinking.</p> <p>S: Demonstrate rapid recall of number facts and is able to use these fluently to</p>

		<p>and recognise years written in Roman numerals.</p> <p>E: Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).</p> <p>E: Add and subtract numbers mentally with increasingly large number.</p> <p>E: Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.</p> <p>E: Solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why.</p> <p>E: Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.</p> <p>E: Know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers.</p> <p>E: Establish whether a number up to 100 is prime, recall prime numbers up to 19.</p> <p>E: 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.</p> <p>E: Multiply and divide numbers mentally drawing upon known facts.</p> <p>E: 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.</p> <p>E: Multiply and divide whole numbers and those involving decimals by 10, 100 & 1000.</p> <p>E: Compare and order fractions whose denominators are all multiples of the same number.</p> <p>E: Identify name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths recognise mixed numbers and improper</p>	<p>interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context.</p> <p>D: Perform mental calculations, including with mixed operations and large numbers.</p> <p>D: Identify common factors, common multiples and prime numbers.</p> <p>D: Use their knowledge of the order of operations to carry out calculations involving the four operations.</p> <p>D: Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.</p> <p>D: Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.</p> <p>D: Compare and order fractions, including fractions > 1.</p> <p>D: Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.</p> <p>D: Multiply simple pairs of proper fractions, writing the answer in its simplest form. [For example, $\frac{1}{2} \times \frac{1}{2} = \frac{1}{8}$].</p> <p>D: Divide proper fractions by whole numbers. $\frac{1}{3} \div 2 = \frac{1}{6}$.</p> <p>D: Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [e.g. $\frac{3}{8}$].</p> <p>D: Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.</p> <p>D: Multiply one-digit numbers with up to two decimal places by whole numbers.</p> <p>D: Use written division methods in cases where the answer has up to two decimal places.</p> <p>D: Solve problems which require answers to be rounded to specified</p>	<p>generalise to obtain new facts.</p> <p>S: Show a wide repertoire of reliable and efficient of calculation strategies, both written and mental, that they are able to apply when solving problems.</p> <p>S: Make choices regarding choice of strategies and explain reasoning.</p> <p>S: Solve problems of increasingly complexity using a range of strategies and is able to communicate their reasoning.</p> <p>S: Explain why different methods give the same result.</p> <p>S: Think creatively when problem solving and is able to justify & prove.</p> <p>S: Show rapid and fluent recall of all x facts to 12×12 and is able to use their knowledge to generate new facts and when working with larger numbers.</p> <p>S: Apply knowledge of factors, multiples, prime number, squares and commutativity to solving mental calculations of more complex problems.</p> <p>S: Show a clear understanding of the different structures of multiplication and division and related vocabulary and is able to apply this to solving increasingly complex problems.</p> <p>S: Apply the knowledge of the inverse operation and the links between division and multiplication to solving problems.</p> <p>S: Apply knowledge of fractions to problems involving measures and shapes.</p> <p>S: Use their knowledge of decimals in problem involving measure to work with increased accuracy.</p> <p>S: Demonstrate a very good understanding of the connections between fractions decimals and percentages and is able to use their knowledge to translate between the</p>
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	<p style="text-align: center;">Geometry and Measures</p>	<p>E: Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).</p> <p>E: Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.</p> <p>E: Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.</p> <p>E: 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.</p> <p>E: Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water].</p> <p>E: Solve problems involving converting between units of time.</p> <p>E: Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.</p> <p>E: Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.</p> <p>E: Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.</p> <p>E: Draw given angles, and measure them in degrees (°).</p> <p>E: Identify angles at a point and one whole turn (total 360°) angles at a point on a straight line and 2 1 a turn (total 180°) other multiples of 90°.</p> <p>E: Use the properties of rectangles to deduce related facts and find missing lengths and angles.</p> <p>E: Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</p>	<p>D: Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate.</p> <p>D: 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.</p> <p>D: Convert between miles and kilometres.</p> <p>D: Recognise that shapes with the same areas can have different perimeters and vice versa.</p> <p>D: Recognise when it is possible to use formulae for area and volume of shapes.</p> <p>D: Calculate the area of parallelograms and triangles.</p> <p>D: 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].</p> <p>D: Draw 2-D shapes using given dimensions and angles.</p> <p>D: Recognise describe and build simple 3-D shapes, including making nets.</p> <p>D: Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons.</p> <p>D: Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.</p> <p>D: Describe positions on the full coordinate grid (all four quadrants).</p>	<p>S: Apply knowledge of other areas of the curriculum to their understanding of and problemsolving with measures. E.g. squares, cubes, fractions, multiplication decimals.</p> <p>S: Convert fluently and efficiently between different units of measures and be able to reason about the multiplicative relationship between related measures.</p> <p>S: Use their understanding of the concepts related to measures to solve increasingly complex problems.</p> <p>S: Communicate reasoning and talk about mathematics using sophisticated mathematical language.</p> <p>S: Apply knowledge of measures to other areas of the curriculum such as science.</p> <p>S: Sort and classify shapes using a wide range of criterion using increasingly sophisticated mathematical appropriate vocabulary.</p> <p>S: Creatively apply knowledge of shapes to solving problems with increasing complexity and be able to justify reasoning and communicate their thinking.</p> <p>S: Make links and connections with other areas of the curriculum and be able to generalise their understanding.</p> <p>S: Solve increasingly complex problems involving position and movement.</p> <p>S: Apply knowledge and understanding of position and movement to other curriculum areas such as geography and science.</p> <p>S: Use knowledge of data handling to pose hypothesis and answer</p>
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