



St. James Mathematics Curriculum



Mathematics lessons take a three stage layout – fluency – reasoning – problem solving.

Five a day will be completed every day and should be used to support the learning in class by revisiting previous learning to consolidate the mathematical journey.

Year	Autumn Term	Spring Term	Summer Term
EYFS	<p>Number: Identify when a set can be subitised and when counting is needed.</p> <p>Subitise different arrangements, both unstructured and structured, including using Hungarian number frames.</p> <p>Make different arrangements of numbers within 5 and talk about what they see, to develop their conceptual subitising skills.</p> <p>Spot smaller numbers 'hiding' inside larger numbers. Connect quantities and number to finger patterns and explore different ways of representing numbers on fingers.</p> <p>Hear and join in with counting sequences and connect this to the 'staircase' pattern of the counting numbers, seeing that each number is made of one more than the previous number.</p> <p>Develop counting skills and knowledge, including: that the last number in the count tells us 'how many' (cardinality); to be accurate in counting, each thing must be counted once and once only and in any order; the need for 1:1 correspondence; understanding that everything can be counted, including actions and sounds</p> <p>Compares sets of objects by matching. Begin to develop the language of 'whole' when talking about objects which have parts.</p> <p>Measurement Time – My day.</p>	<p>Number: Continue to develop their subitising skills for numbers within and beyond 5, and increasingly connect quantities to numerals.</p> <p>Begin to identify missing parts for numbers within 5.</p> <p>Explore and structure of numbers 6 and 7 as '5 and a bit' and connect this to finger patterns and the Hungarian number frame.</p> <p>Focus on equal and unequal groups when comparing numbers.</p> <p>Understand that two equal groups can be called 'a double' and connect this to finger patterns.</p> <p>Sort odd and even numbers according to their 'shape'.</p> <p>Continue to develop their understanding of the counting sequence and link cardinality and ordinality through the 'staircase' pattern.</p> <p>Order numbers and play track games.</p> <p>Join in with verbal counts beyond 20, hearing the repeated pattern within the counting numbers</p> <p>Geometry Spatial awareness 2-D Shapes 3-D Shapes.</p>	<p>Number: Continue to develop their counting skills, counting larger sets as well as counting actions and sounds.</p> <p>Explore a range of representations of numbers, including the 10-frame, and see how doubles can be arranged in a 10-frame.</p> <p>Compare quantities and numbers, including sets of objects which have different attributes.</p> <p>Continue to develop a sense of magnitude, e.g. knowing that 8 is quite a lot more than 2, but 4 is only a little bit more than 2.</p> <p>Begin to generalise about 'one more than' and 'one less than' numbers within 10.</p> <p>Continue to identify when sets can be subitised and when counting is necessary.</p> <p>Develop conceptual subitising skills including when using a rekenrek.</p> <p>Geometry Exploring more complex patterns.</p> <p>Measurement Length, height and distance. Weight. Capacity.</p>

	<p>Geometry Spatial awareness 2-D Shapes Making simple patterns.</p>		
1	<p>Number - Place Value: Counting forwards/backwards from any number to at least 100 in 1's and forwards in 10's. Reading, writing, ordering numbers to at least 50 (including ordinal numbers to 10). Read and write numbers to 10 in words Patterns with numbers and objects, repeating patterns and sequencing of numbers including missing numbers. Find 1 more and 1 less or 10 more/10 less than a given number. Identify and represent numbers using concrete objects and pictorial representations, including number lines. Start to identify double and halves of numbers to 10.</p> <p>Number (+/-): Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equal (=) signs. Represent and use number bonds and related subtraction facts to 10. Add and subtract one digit numbers to 10. Solve one step problems that involve addition and subtraction using concrete objects and pictorial representation with numbers which are familiar to the child. Start to solve missing number problems such as $7 + ? = 9$</p> <p>Measurement: Compare, describe and solve practical problems for length and height (e.g. long/short, longer/shorter, tall/short, double and half). Measure and begin to record lengths and heights. Compare, describe and solve practical problems for mass or weight (e.g. heavy/light, heavier/lighter, lighter than).</p>	<p>Number - Place Value: Reading, writing, ordering numbers to at least 100. Read and write numbers in words to 20. Counting forwards/backwards from any number to beyond 100 in 1's and 10's. Count in multiples of twos, fives and tens. Patterns with numbers, repeating patterns and sequencing of numbers including missing numbers. Find 1 more and 1 less or 10 more/10 less than a given number. Use the language of equal to, more than, less than (fewer), most, least. Know double and halves of numbers to 20.</p> <p>Number (+/-): Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equal (=) signs. 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 representation with numbers to 20. Solve missing number problems such as $7 = ? - 9$</p> <p>Number - Fractions: Recognise, find and name a half as one of two equal parts of an object or shape. Recognise, find and name a quarter as one of four equal parts of an object or shape.</p> <p>Measurement: Compare, describe and solve practical problems for capacity/volume (e.g. full/empty, more than, less than quarter). Measure and begin to record capacity/volume.</p>	<p>Number - Place Value: Confidently count to and across 100, forward and backwards, beginning with 0 or 1, or from any given number. Confidently counting forwards/backwards from any number to beyond 100 in ones, twos and tens. Secure understanding of patterns with numbers, repeating patterns and sequencing of numbers including odd and even. Use the language of equal to, more than, less than (fewer), most, least. Secure understanding of double and halves of numbers to 50.</p> <p>Number (+/-): Confidently read, write and interpret mathematical statements involving addition (+), subtraction (-) and equal (=) signs. Securely represent and use number bonds and related subtraction facts within 20. Add and subtract one digit and two digit numbers to 20 including zero. Confidently solve one step problems that involve addition and subtraction using concrete objects and pictorial representation. Confidently solve missing number problems such as $7 = ? - 9$</p> <p>Number (x/÷): Solve one step problems involving multiplication and division, calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.</p> <p>Number - Fractions: Recap halves and quarters of shapes. Recognise, find and name a half as one of two equal parts of a quantity.</p>

	<p>Measure and begin to record mass/weight. Recognise and use the language related to dates including days of the week and months and years. Sequence events in chronological order using language e.g. before, after, next, first, today, yesterday, tomorrow, etc.</p> <p>Geometry – properties of shape: Recognise and name common 2D and 3D shapes, including: rectangles, squares, circles and triangles for 2D and cuboids, cubes, pyramids and spheres for 3D. Introduce the vocabulary of the properties for these shapes.</p>	<p>Recognise and know the value of different denominations of coins and notes. Tell the time to the hour and draw the hands on the clock face to show these times.</p> <p>Geometry – position and direction: Describe position, direction and movement, including whole, half and quarter turns.</p>	<p>Recognise, find and name a quarter as one of four equal parts of a quantity.</p> <p>Measurement: Tell the time to the hour, half hour and draw the hands on a clock face to show these times. Compare, describe and solve practical problems for time (hours, minutes, seconds, quicker, slower, earlier, later). Recognise and know the value of different denominations of coins and notes.</p> <p>Geometry – properties of shape: Confidently recognise and name common 2D and 3D shapes, including: rectangles, squares, circles and triangles for 2D and cuboids, cubes, pyramids and spheres for 3D. Secure the vocabulary of the properties for these shapes.</p>
2	<p>Number - Place Value: Recognise the place value of each digit in a two-digit number (tens and ones). Identify, represent and estimate numbers using different representations, including the number line. Start to compare and order numbers from 0 up to 100, use <, > and = sign. Read and write numbers to 100 in numerals and words. Start to count on and back in steps of 2, 3 and 5 from 0. Count in tens from any given number forwards and backwards. Identify odd and even numbers.</p> <p>Number (+/-): Recall and use addition and subtraction facts to 20 fluently. Start to derive and use related facts to 100. Add and subtract numbers using concrete objects, pictorial representation and mentally: -a two-digit number and a one digit number</p>	<p>Number - Place Value: Recognise the place value of each digit in a two-digit number (tens and ones). Securely Identify, represent and estimate numbers using different representations, including the number line which have numbers and blank. Compare and order numbers from 0 up to 100, use <, > and = sign. Read and write numbers to 100 in numerals and words. Start to count on and back in steps of 2, 3 and 5 from 0. Securely count in tens from any given number forwards and backwards. Identify odd and even numbers. Start to use place value and number facts to solve problems.</p> <p>Number (+/-): Confidently recall and use addition and subtraction facts to 20 fluently. Securely derive and use related facts to 100.</p>	<p>Number - Place Value: Secure the counting over 100 in 2, 3, 5 and 10 from any number. Develop understanding of HTU when looking at two and three digit numbers. Confidently use place value and number facts to solve problems. Identify, represent and estimate numbers using different representations including the number line.</p> <p>Number (+/-): Extend knowledge of language e.g. sum, difference, calculate total. Addition facts applied to inverses e.g. $3 + 7 = 10$, $10 - 3 = 7$, $30 + 70 = 100$, $100 - 30 = 70$ Solve missing number problems (applying knowledge that addition and subtraction are related) Adopt calculation strategies rather than counting Investigate odd and even numbers through addition o $+ 0 = ?$</p>

<p>-a two-digit number and a ten -Three one digit numbers. Start to introduce missing number problems for the calculations above. Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. Apply basic addition and subtraction facts to puzzles and problems.</p> <p>Number (x/÷): Counting in 2s, 5s and 10s. Calculate mathematical statements and write them using appropriate signs. Solve division problems by grouping, linking to repeated subtraction. Teach 2, 5 and 10 times tables Solve multiplication calculations by using 'groups of' 3x2 make 3 groups of 2. Solve division sums by grouping using practical objects. Solve multiplication problems using arrays, linking to repeated addition.</p> <p>Measurement: Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) and mass (kg/g) to the nearest appropriate unit, using rules and scales. Compare and order length and mass and record results using <.> and =.</p> <p>Geometry – properties of shapes: Identify and describe the properties of 2D shapes, including the number of sides and symmetry in a vertical line. Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces. Identify 2D shapes on the surface of 3D shapes for example a circle on a cylinder and a triangle on a pyramid. Compare and sort common 2D and 3D shapes and everyday objects. Recognise 2D shapes and describe their properties.</p>	<p>Add and subtract numbers using concrete objects, pictorial representation and mentally for two two-digit numbers. Confidently recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve simple missing number problems. Solve one-step addition and subtraction problems using concrete objects and pictorial representations, including those involving number, quantities and measures applying their increasing knowledge of mental and written methods. Adopt calculation strategies rather than counting.</p> <p>Number (x/÷): Start to recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. Start to calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs. Start to show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Start to solve problems involving multiplication and division using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.</p> <p>Number - Fractions: Recognise, find, name and write fractions 1/2, 1/3, 1/4, 2/4 and 3/4 of a length, shapes, sets of objects or quantities. Write simple fractions of number. E.g. 1/2 of 90 = 45 and recognize the equivalence of two quarters and one half.</p> <p>Measurement: Choose and use appropriate standard units to estimate and measure temperature (°C) and capacities (litres/ml) to the nearest appropriate unit, using thermometers and measuring vessels.</p>	<p>Number (x/÷): Confidently recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers. Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs. Securely show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. Confidently solve problems involving multiplication and division using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.</p> <p>Measurement: Compare and sequence intervals of time. 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. Know the number of minutes in an hour and the number of hours in a day. Recognise and use symbols for pound (£) and pence (p) and combine amounts to make a particular value. Confidently find different combinations and coins that equal the same amounts of money. Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.</p> <p>Geometry – properties of shapes: Revise the work on geometry from both the Autumn and Spring term to make sure all children are confident at their level.</p> <p>Statistics: Interpret and construct simple pictograms, tally charts, block graphs and simple tables. Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.</p>
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3	<p>Number - Place Value: Find 10 or 100 more or less than a given number Recognise the place value of each digit in a three-digit number (hundreds, tens, ones) Count from 0 in multiples of 2, 3, 5, 10, 50 and 100. Compare and order numbers up to 1000 (greater than, less than, equal to, rounding to the nearest ten/hundred) Read and write numbers up to 500 in numerals and in words.</p> <p>Number (+/-): Secure partitioning and recombining as their jotting and mental method. How many tens altogether? How many ones? Taking it into HTU. Add and subtract numbers mentally, including:</p> <ul style="list-style-type: none"> • a three-digit number and ones • a three-digit number and tens • a three-digit number and hundreds. 	<p>Number - Place Value: Count from 0 in multiples of 2, 3, 4, 5, 8, 10, 50 and 100. Confidently find 10 or 100 more or less than a given number Confidently recognise the place value of each digit in a three-digit number (hundreds, tens, ones) Start to identify, represent and estimate numbers using different representations Read and write numbers up to 1000 in numerals and in words. Start to solve number problems and practical problems involving these ideas.</p> <p>Number (+/-): Confidently add numbers with up to three digits, using formal written methods of columnar addition and subtraction. Estimate the answer to a calculation and use inverse operations to check answers.</p>	<p>Number - Place Value: Confidently count from 0 in multiples of 2, 4, 3, 5, 8, 10, 50 and 100. Confidently compare and order numbers up to 1000 using the correct language and signs. Confidently identify, represent and estimate numbers using different representations Securely read and write numbers up to 1000 in numerals and in words. Securely solve number problems and practical problems involving these ideas.</p> <p>Number (+/-): Securely add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction in different contexts. Confidently estimate the answer to a calculation and use inverse operations to check answers Continue to solve problems, including missing number problems, using number facts, place value,</p>

<p>Start to add and subtract numbers with up to three digits using formal written method of columnar addition and subtraction (make sure all children are secure in the value of each column). Estimate the answer to a calculations considering reasonable totals (does the total make sense?) Embed methods to solve problems, including missing number problems, using number facts, place value. $63 + \underline{\quad} = 83$.</p> <p>Number (x/÷): Continue to recall the multiplication and division facts 2, 3, 5 and 10 multiplication tables. Begin to recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know $3 \times 7 = 21$ so $21 \div 3 = \underline{\quad}$</p> <p>Number - Fractions: Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. Begin to add and subtract fractions with the same denominator with one whole (e.g. $5/7 + 1/7 = 6/7$).</p> <p>Measurement: Measure, compare, add and subtract: lengths (m/cm/mm); measure (kg/g); volume/capacity (l/ml). Measure the perimeter of simple 2-D shapes</p> <p>Geometry – properties of shapes: Draw 2-D shapes and make 3-D shapes using modelling materials; Recognise 3-D shapes in different orientations and describe them Recognise that angles are a property of shape or a description of a turn (relate right angles in the autumn term as a property of a shape).</p>	<p>Confidently add and subtract numbers mentally, including: $\text{?} \text{?} \text{?} \text{a three-digit number and ones}$ $\text{?} \text{?} \text{?} \text{a three-digit number and tens}$ $\text{?} \text{?} \text{?} \text{a three-digit number and hundreds}$ Confidently solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction – two step problems.</p> <p>Number (x/÷): Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables 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.</p> <p>Number - Fractions: 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 Compare and order unit fractions, and fractions with the same denominator. Add and subtract fractions with the same denominator with one whole (e.g. $5/7 + 1/7 = 6/7$).</p> <p>Measurement: Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks. 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. Know the number of seconds in a minute and the number of days in each month, year and leap year Compare durations of events, for example to calculate the time taken by particular events or tasks.</p>	<p>develop word problem skills to ensure each step is met. Add and subtract amounts of money to give change, using both £ and p in practical contexts.</p> <p>Number (x/÷): Confidently recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. Confidently 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 are connected to m objects.</p> <p>Number - Fractions: Revise the work from the previous terms. Solve problems involving all elements of the fraction domain.</p> <p>Measurement: Revise the work from previous terms. Add and subtract amounts of money to give change, using both £ and p in practical contexts.</p> <p>Geometry – properties of shape: Identify horizontal and vertical lines and pairs of perpendicular and parallel lines.</p> <p>Statistics: 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. (This should be consolidated through foundation subjects).</p>
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4	<p>Number - Place Value: Find 1000 more/less than a given number. Count in multiples of 2, 3, 4, 5, 6, 8, 9, 10, 25 50, 100 and 1000. Recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones). Order and compare numbers beyond 1000. Round any number to the nearest 10, 100, 1000.</p> <p>Number (+/-): Secure mental +/- of three digit numbers. This should include partitioning and recombining of the number with jottings to secure place value understanding. Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. Estimate and use inverse operations to check answers to a calculation. Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</p> <p>Number (x/÷): Recall multiplication and division facts for multiplication tables up to 12×12 – Focus 2,3,4,5, 6, 8, 9 and 10</p>	<p>Number - Place Value: Count in multiples of 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 25 50, 100 and 1000. 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. Identify, represent and estimate numbers using different representations. Begin to count back through zero to include negative numbers.</p> <p>Number (+/-): Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. Estimate and use inverse operations to check answers to a calculation. Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</p> <p>Number (x/÷): Recall multiplication and division facts for multiplication tables up to 12×12. Start to multiply two-digit and three-digit numbers by a one-digit number using formal written layout. Begin to solve problems involving multiplying and adding, including using the distributive law to</p>	<p>Number - Place Value: Securely count in multiples of 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 25 50, 100 and 1000. Confidently count backwards through zero to include negative numbers Solve number and practical problems that involve all which has been taught and with increasingly large positive numbers.</p> <p>Number (+/-): Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. Estimate and use inverse operations to check answers to a calculation. Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.</p> <p>Number (x/÷): Recall confidently multiplication and division facts for multiplication tables up to 12×12 (ready for the MTC). Confidently multiply two-digit and three-digit numbers by a one-digit number using formal written layout. Securely solve problems involving multiplying and adding, including using the distributive law to</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. Recognise and use factor pairs and commutativity in mental calculations.</p> <p>Number – Fractions (including decimals): Recognise and show, using diagrams, families of common equivalent fractions. Begin to recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$. Add and subtract fractions with the same denominator.</p> <p>Measurement: Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres. Find the area of rectilinear shapes by counting squares</p> <p>Geometry – properties of shape: Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and size. Identify lines of symmetry in 2-D shapes presented in different orientations. Complete a simple symmetric figure with respect to a specific line of symmetry.</p>	<p>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>Number – Fractions (including decimals): Count up and down in hundredths; recognise that hundredths arise when dividing an object by hundred and dividing tenths by ten. Recognise and write decimal equivalents to any number of tenths and hundredths. Confidently to recognise and write decimal equivalents to $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$. Find the effect of dividing a one or two-digit number by 10 and 100, identify the value of digits in the answer as ones, tenths and hundredths.</p> <p>Measurement: Convert between different units of measure for example kilometre to metre; hour to minute. Estimate, compare and calculate different measures, including money in pounds and pence.</p> <p>Geometry – properties of shape: Identify acute and obtuse angles and compare and order angles up to two right angles by size</p> <p>Statistics: Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.</p>	<p>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>Number – Fractions (including decimals): Round decimals with one decimal place to the nearest whole number. Compare numbers with the same number of decimal places up to two decimal places. Solve simple measure and money problems involving fractions and decimals to two decimal places.</p> <p>Measurement: Read, write and convert time between analogue and digital 12 and 24 hour clocks. Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.</p> <p>Geometry – position and direction: Describe positions on a 2D grid a coordinates in the first quadrant. Describe movements between positions as translations of a given unit to the left/right and up/down. Plot specified points and draw sides to complete a given polygon.</p> <p>Statistics: Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. (This should be consolidated through foundation subjects).</p>
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<p>5</p>	<p>Number - Place Value: 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. Round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000.</p> <p>Number (+/-): Add and subtract whole numbers with more than 4 digits, including efficient written methods (columnar addition and subtraction). Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Add and subtract numbers mentally with increasingly large numbers.</p> <p>Number (x/÷): Multiply and divide numbers mentally, drawing upon known facts confidently and frequently. Identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers. Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19. Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000. Introduce multiplying numbers up to 4 digits by a one-digit number using an efficient written method, including long multiplication for two digit numbers. Introduce dividing numbers up to 4 digits by a one-digit number using the formal written method of short division.</p> <p>Number – Fractions (including decimals and percentages): Compare and order fractions whose denominators are all multiples of the same number.</p>	<p>Number - Place Value: Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0. They should recognise and describe linear number sequences (for example, 3, 3 1/2, 4, 4 1/2 ...), including those involving fractions and decimals, and find the term-to-term rule in words (for example, add 1/2).</p> <p>Number (+/-): Revisit and revise Autumn Term learning through problem solving, reasoning, five a day and test coaching.</p> <p>Number (x/÷): Secure multiplying numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. Secure dividing 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. Recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³). Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.</p> <p>Number – Fractions (including decimals and percentages): Read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$]. Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. Round decimals with two decimal places to the nearest whole number and to one decimal place. Solve problems involving number to three decimal places.</p>	<p>Number - Place Value: Solve number problems and practical problems that involve all elements of the place value domain. Read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.</p> <p>Number (+/-): Revisit and revise Autumn Term learning through problem solving, reasoning, five a day and test coaching.</p> <p>Number (x/÷): Revisit and revise Autumn Term learning through problem solving, reasoning, five a day and test coaching. Solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes. Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign. Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.</p> <p>Number – Fractions (including decimals and percentages): Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction. 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.</p> <p>Measurement: Recognise and estimate volume [for example, using 1 cm³ blocks to build cubes and cuboids] and capacity [for example, using water]</p>
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<p>Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</p> <p>Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]</p> <p>Add and subtract fractions with the same denominator and related fractions; write statements > 1 as a mixed number.</p> <p>Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.</p> <p>Measurement: Convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]. Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints and express them in approximate terms. Solve problems involving converting between units of time.</p> <p>Geometry – properties of shape: Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. Draw given angles, and measure them in degrees ($^{\circ}$). Identify:</p> <ul style="list-style-type: none"> • angles at a point and 1 whole turn (total 360°) • angles at a point on a straight line and half a turn (total 180°) • multiples of 90° • reflex angles • and compare angles. <p>Start to draw shapes given dimensions and angles.</p>	<p>Measurement: Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres. Calculate and compare the area of squares and rectangles, including using standard units, square centimetres (cm^2) and square metres (m^2), and estimate the area of irregular shapes.</p> <p>Geometry – properties of shape: Identify 3-D shapes, including cubes and cuboids, from 2-D representations and use accurate vocabulary in their descriptions. Select and use properties of a rectangle (including squares) to deduce related facts. Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.</p>	<p>Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.</p> <p>Geometry – position and direction: 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>Statistics: Solve comparison, sum and difference problems using information presented in a line graphs. Complete, read and interpret information in tables, including timetables. (This should be seen cross curricular with different scaled intervals and amounts).</p>
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<p>6</p>	<p>Number - Place Value: Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit. Round any whole number to a required degree of accuracy. Solve number and practical problems that involve all of place value areas.</p> <p>Number (+/-): Secure formal written methods for addition and subtraction for larger numbers. Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy. Perform mental calculations, including with mixed operations and large numbers.</p> <p>Number (x/÷): Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication. Identify common factors, common multiples and prime numbers.</p> <p>Number – Fractions (including decimals and percentages): 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. Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. Solve problems which require answers to be rounded to specified degrees of accuracy.</p>	<p>Number - Place Value: Use negative numbers in context, and calculate intervals across zero. Revisit and revise Autumn Term learning through problem solving, reasoning and five a day.</p> <p>Number (+/-): Perform mental calculations, including with mixed operations and large numbers. Pupils explore the order of operations using brackets; for example, $2 + 1 \times 3 = 5$ and $(2 + 1) \times 3 = 9$.</p> <p>Number (x/÷): Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as 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.</p> <p>Number – Fractions (including decimals and percentages): Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$] Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places. Multiply one-digit numbers with up to 2 decimal places by whole numbers. Practise calculations with simple fractions and decimal fraction equivalents to aid fluency, including listing equivalent fractions to identify fractions with common denominators.</p> <p>Ratio and Proportion: Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts.</p>	<p>Number - Place Value: Revisit and revise Autumn Term learning through problem solving, reasoning and five a day.</p> <p>Number (+/-): Use their knowledge of the order of operations to carry out calculations involving the 4 operations. Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p> <p>Number (x/÷): Use their knowledge of the order of operations to carry out calculations involving the 4 operations Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.</p> <p>Number – Fractions (including decimals and percentages): Divide proper fractions by whole numbers [for example, $\frac{1}{3} \div 2 = \frac{1}{6}$] associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, $\frac{3}{8}$] Use written division methods in cases where the answer has up to 2 decimal places.</p> <p>Ratio and Proportion: 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 Pupils solve problems involving unequal quantities, for example, 'for every egg you need 3 spoonfuls of flour', '$\frac{3}{5}$ of the class are boys'. These problems are the foundation for later formal approaches to ratio and proportion.</p>
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