Areas of Mathematics: Number; number: calculation; number: fractions, decimals and percentages; Measure; Geometry; statistics

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| **Year/Term** | **Number counting and place value** | **Number comparing and ordering, Reading and writing** | **Measure** | **Geometry** | **Position and direction** | **Patterns** |
| **Nursery** | Through continuous provision children will: * Develop fast recognition of up to 3 objects, without having to count them individually (‘subitising’)
* Recite numbers past 5
* Say one number for each item in order: 1,2,3,4,5
* Know that the last number reached when counting a small set of objects tells you how many there are in total (‘cardinal principle’)
* Show ‘finger numbers’ up to 5
* Solve real world mathematical problems with numbers up to 5
 | Through continuous provision children will: * Compare quantities using language: ‘more than’, ‘fewer than’
* Link numerals and amounts: for example, showing the right number of objects to match the numeral, up to 5
* Experiment with their own symbols and marks as well as numerals
* Begin to describe a sequence of events, real or fictional, using words such as ‘first’, ‘then...’
 | Through continuous provision children will: * Make comparisons between objects relating to size, length, weight and capacity.
 | Through continuous provision children will: * Talk about and explore 2D and 3D shapes (for example, circles, rectangles, triangles and cuboids) using informal and mathematical language: ‘sides’, ‘corners’; ‘straight’, ‘flat’, ‘round’.
* Select shapes appropriately: flat surfaces for building, a triangular prism for a roof, etc.
* Combine shapes to make new ones – an arch, a bigger triangle, etc.
 | Through continuous provision children will: * Understand position through words alone – for example, “The bag is under the table,” – with no pointing.
* Describe a familiar route.
* Discuss routes and locations, using words like ‘in front of’ and ‘behind’.
 | Through continuous provision children will: * Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper.
* Use informal language like ‘pointy’, ‘spotty’, ‘blobs’, etc.
* Extend and create ABAB patterns – stick, leaf, stick, leaf.
* Notice and correct an error in a repeating pattern.
* Begin to describe a sequence of events, real or fictional, using words such as ‘first’, ‘then...’
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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Reception** | **Numbers and the Number System****Subitising*** Perceptually subitise within 3, 4 then perceptually and conceptually within 5
* Identify sub-groups in larger arrangements
* Experience subitising in a range of context, including using their fingers and temporal patterns by sounds

**Cardinality, ordinality and counting*** Relate the counting sequence to cardinality
* Count through rhyme and song
* Count using 1:1 correspondence
* To count accurately
* Explore the cardinality of 5
* Begin to count beyond 5
* Begin to recognise numerals, relating these to quantities

**Composition*** See that all numbers can be made of 1s
* Explore the concept of ‘wholes’ and ‘parts’
* Explore the composition of numbers within 5

**Comparison*** Understand that sets can be compared according to a range of attributes
* Use the language of comparison, including ‘more than’ and ‘fewer than’
* Compare sets by looking, subitising and matching, knowing that when every object can be matched to one in the other set the amounts are equal
 | **Numbers and the Number System****Subitising*** Continue to subitise within 5
* Explore a range of patterns made by some numbers greater than 5
* Experience patterns which show a small group and ‘1 more’
* Match arrangements to finger patterns
* Link patterns to ‘doubles’

**Cardinality, ordinality and counting*** Develop verbal counting to 20 and beyond
* Continue to develop object counting skills
* Link counting to cardinality for quantities between 5 and 10
* Order number, linking cardinal and ordinal representations of number

**Composition*** Explore the composition of 6
* Begin to see that numbers within 10 can be composed to of ‘5 and a bit’
* Explore the composition of odd and even numbers
* Begin to link even numbers to doubles
* Explore the composition of numbers within 10

**Comparison*** Compare sets and use the language of comparison
* Compare set by matching, identifying when sets are equal
* Explore ways of making unequal sets equal
* Compare numbers, reasoning about which is more
 | **Numbers and the Number System****Subitising*** Continue to practise increasingly familiar subitising arrangements, including those that expose ‘1 more’ or ‘doubles’ patterns
* Identify when patterns show the same number but in a different arrangement, or when patterns are similar but have a different number
* Subitise structured and unstructured patterns, including those which show numbers within 10, in relation to 5 and 10
* Begin to identify when it is appropriate to count and when groups can be subitised

**Cardinality, ordinality and counting*** Continue to develop verbal counting to 20 and beyond from different starting numbers
* Develop accuracy in verbal and object counting

**Composition*** Explore the composition of 10

**Comparison*** Order sets of objects, linking this to ordinal numbers

*Consolidate understanding of concepts previously taught* |
| **Measure and Geometry as part of continuous provision*** Select, rotate and manipulate shapes to develop spatial reasoning skills
* Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can
* Investigate how shapes can be combined to make new shapes
* Find 2D shapes within 3D shapes, including through printing or shadow play
* Continue, copy and create repeating patterns
* Make patterns with varying rules and objects
* Compare length, weight and capacity
* Begin to use comparative language
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Areas of Mathematics: Number; number: calculation; number: fractions, decimals and percentages; Measure; Geometry; statistics

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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Year 1** | **Numbers and the Number system (Within 10)*** read and write numbers from 1 to 10 in numerals and words.
* 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

**Calculating: Addition and Subtraction (to 10)*** given a number, identify one more and one less
* count to and across 10, forwards and backwards, beginning with 0 or 1, or from any given number
* represent and use number bonds and related subtraction facts within 10

**Visualising and Constructing*** recognise and name 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]

**Numbers and the Number system (Within 20)*** read and write numbers from 1 to 20 in numerals and words
* 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
 | **Calculating: Addition and Subtraction (to 20)*** solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ – 9
* given a number, identify one more and one less
* count to and across 20, forwards and backwards, beginning with 0 or 1, or from any given number
* represent and use number bonds and related subtraction facts within 20

**Calculating: Addition and Subtraction*** read, write and interpret mathematical statements involving addition (+), subtraction (–) and equals (=) signs
* add and subtract one-digit and two-digit numbers to 20, including zero
* solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = ☐ – 9

**Numbers and the Number system (Within 50)*** read and write numbers from 1 to 50 in numerals and words.
* 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
* count, read and write numbers to 50 in numerals; count in multiples of twos, fives and tens

**Measuring Space*** measure and begin to record the following: lengths and heights; mass/weight; capacity and volume; time (hours, minutes, seconds)
* compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]; mass/weight [for example, heavy/light, heavier than, lighter than]; capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]; time [for example, quicker, slower, earlier, later]
 | **Calculating: Multiplication and division*** 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

**Exploring Fractions*** recognise, find and name a half as one of two equal parts of an object, shape or quantity
* recognise, find and name a quarter as one of four equal parts of an object, shape or quantity

**Mathematical Movement*** describe position, direction and movement, including whole, half, quarter and three-quarter turns

**Numbers and the number system (within 100)*** read and write numbers from 1 to 100 in numerals and words.
* 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
* count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens

**Exploring Money*** recognise and know the value of different denominations of coins and notes

**Exploring Time*** recognise and know the value of different denominations of coins and notes
* recognise and use language relating to dates, including days of the week, weeks, months and years
* sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
* tell the time to the hour and half past the hour and draw the hands on a clock face to show these times
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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Year 2** | **Numbers and the number System*** recognise the place value of each digit in a two-digit number (tens, ones)
* read and write numbers to at least 100 in numerals and in words
* use place value and number facts to solve problems
* identify, represent and estimate numbers using different representations, including the number line

**Counting and comparing*** compare and order numbers from 0 up to 100; use <, > and = signs
* count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward

**Calculating: Addition and Subtraction*** recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100
* 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; adding three one-digit numbers
* show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
* recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems
* 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

**Exploring Money*** recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value
* find different combinations of 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
 | **Calculating: Multiplication and Division*** 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 (×), division (÷) and equals (=) signs
* show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot
* solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts

**Presentation of Data*** interpret and construct simple pictograms, tally charts, block diagrams and simple tables
* ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity
* ask and answer questions about totalling and comparing categorical data

**Investigating Properties of Shape*** identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]
* identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line
* compare and sort common 2-D and 3-D shapes and everyday objects
* identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces

**Exploring Fractions*** recognise, find, name and write fractions 1/3, 1/4, 2/4 and 3/4 of a length, shape, set of objects or quantity
* write simple fractions for example, 1/2 of 6 = 3 and recognise the equivalence of 2/4 and ½
 | **Mathematical Movement*** use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)
* order and arrange combinations of mathematical objects in patterns and sequences

**Exploring Time*** know the number of minutes in an hour and the number of hours in a day.
* 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

**Measuring Space*** choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
* compare and order lengths, mass, volume/capacity and record the results using >, < and =

Assess/Enrich and preventing the gap.  |

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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Year 3** | **Numbers and the number system*** recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
* read and write numbers up to 1000 in numerals and in words
* identify, represent and estimate numbers using different representations
* solve number problems and practical problems involving these ideas

**Counting and comparing*** compare and order numbers up to 1000
* count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
* solve number problems and practical problems involving these ideas

**Calculating: Addition and Subtraction*** add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three-digit number and hundreds
* add and subtract 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
* solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction

**Calculating: Multiplication and Division*** 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, 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
 | **Calculating: Multiplication and Division*** 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, 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

**Exploring Money*** add and subtract amounts of money to give change, using both £ and p in practical contexts

**presentation of Data*** 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

**Measuring Space*** measure the perimeter of simple 2-D shapes

**Exploring 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
* recognise and show, using diagrams, equivalent fractions with small denominators
* compare and order unit fractions, and fractions with the same denominators
 | **Calculating fractions and decimals*** 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
* add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7]

**Exploring Time*** 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]

**Investigating Angles*** recognise angles as a property of shape or a description of a turn
* identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle

**Visualising and constructing*** identify horizontal and vertical lines and pairs of perpendicular and parallel lines
* draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them

**Measuring Space*** measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)

Assess/Enrich and preventing the gap. |

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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Year 4** | **Numbers and the Number system*** recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)
* 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

**Counting and Comparing*** order and compare numbers beyond 1000
* count in multiples of 6, 7, 9, 25 and 1000
* count backwards through zero to include negative numbers

**Checking, approximating and estimating*** round any number to the nearest 10, 100 or 1000
* estimate and use inverse operations to check answers to a calculation
* solve number and practical problems that involve all of the above and with increasingly large positive numbers

**Calculating: Addition and Subtraction*** find 1000 more or less than a given number
* add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
* solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why

**Calculating Space*** measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
* convert between different units of measure [for example, kilometre to metre; hour to minute]

**Calculating: Multiplication and Division*** recall multiplication and division facts for multiplication tables up to 12 × 12
* recognise and use factor pairs and commutativity in mental calculations
* 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
 | **Calculating: Multiplication and Division*** multiply two-digit and three-digit numbers by a one-digit number using formal written layout
* 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

**Calculating Space*** find the area of rectilinear shapes by counting squares

**Exploring Fractions, Decimals and Percentages*** count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten
* 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
* recognise and write decimal equivalents of any number of tenths or hundredths
* recognise and write decimal equivalents to 1/4, 1/2, ¾

**Calculating Fractions Decimals and Percentages*** add and subtract fractions with the same denominator
* 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
* recognise and show, using diagrams, families of common equivalent fractions
* solve simple measure and money problems involving fractions and decimals to two decimal places
 | **Exploring Fractions, Decimals and Percentages*** recognise and write decimal equivalents of any number of tenths or hundredths
* 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

**Exploring Time and Money*** 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
* estimate, compare and calculate different measures, including money in pounds and pence

**Presentation of Data*** 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

**Investigating Properties of Shape*** 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
* compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes

**Investigating Angles*** identify acute and obtuse angles and compare and order angles up to two right angles by size

**Mathematical Movement*** describe positions on a 2-D grid as coordinates in the first quadrant
* plot specified points and draw sides to complete a given polygon
* describe movements between positions as translations of a given unit to the left/right and up/down

Assess/Enrich and preventing the gap. |

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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Year 5** | **Counting and Comparing*** read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit
* read Roman numerals to 1000 (M) and recognise years written in Roman numerals
* count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000
* interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero

**Checking, Approximating and Estimating*** round any number up to 1,000,000 to the nearest 10, 100, 1000, 10,000 and 100,000
* round decimals with two decimal places to the nearest whole number and to one decimal place
* use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

**Calculating: Addition and Subtraction*** add and subtract numbers mentally with increasingly large numbers
* add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)
* solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

**Presentation of Data*** solve comparison, sum and difference problems using information presented in a line graph

**Numbers and the Number System*** identify multiples and factors, including finding all factor pairs of a number, and common factors of two 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
* recognise and use square numbers and cube numbers, and the notation for squared (²) and cubed (³)
* solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes

**Calculating Space*** measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres
* 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
 | **Calculating: Multiplication and Division*** multiply and divide numbers mentally drawing upon known facts
* multiply and divide whole numbers and those involving decimals by 10, 100 and 1000
* 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
* 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
* solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign

**Exploring Fractions, Decimals and Percentages*** compare and order fractions whose denominators are all multiples of the same number
* identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths
* recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
* read and write decimal numbers as fractions [for example, 0.71 = 71/100]
* read, write, order and compare numbers with up to three decimal places
* recognise the per cent symbol (%) and understand that per cent relates to ‘number of parts per hundred’, and write percentages as a fraction with denominator 100, and as a decimal

**Calculating Fractions, Decimals and Percentages*** 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, 2/5 + 4/5 = 6/5 = 1 1/5]
* add and subtract fractions with the same denominator and denominators that are multiples of the same number
* multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams
* solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25
* solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates
 | **Exploring Fractions, Decimals and Percentages*** solve problems involving number up to three decimal places
* multiply and divide whole numbers and those involving decimals by 10, 100 and 1000

**Calculating space*** estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]

**Visualising*** identify 3-D shapes, including cubes and other cuboids, from 2-D representations

**Investigating Properties of Shape*** 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

**Investigating Angles*** know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
* draw given angles, and measure them in degrees (°)
* identify angles at a point and one whole turn (total 360°); angles at a point on a straight line and 1/2 a turn (total 180°); other multiples of 90°

**Mathematical Movement*** 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

**Measuring Space*** 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
* use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling

**Exploring Time*** solve problems involving converting between units of time
* complete, read and interpret information in tables, including timetables

Assess/Enrich and preventing the gap. |

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| **Year/Term** | **Autumn: Terms 1 and 2** | **Spring: Terms 3 and 4** | **Summer: Terms 5 and 6** |
| **Year 6** | **Numbers and the Number System*** 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
* read, write, order and compare numbers up to
1. 00 000 and determine the value of each digit
* use negative numbers in context, and calculate intervals across zero
* identify common factors, common multiples and prime numbers

**Checking, Approximating and Estimating*** solve problems which require answers to be rounded to specified degrees of accuracy
* use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy
* round any whole number to a required degree of accuracy

**Calculating*** perform mental calculations, including with mixed operations and large numbers
* solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
* multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
* solve problems involving addition, subtraction and multiplication
* use their knowledge of the order of operations to carry out calculations

**Calculating: Division*** divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division; 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
* use written division methods in cases where the answer has up to two decimal places
* solve problems involving division

**Exploring Fractions, 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
* associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example, 3/8]
* recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

**Mathematical Movement*** describe positions on the full coordinate grid (all four quadrants)
* draw and translate simple shapes on the coordinate plane, and reflect them in the axes
 | **Revision of Essential Knowledge****Calculating Fractions, Decimals and Percentages*** add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
* multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 1/4 × 1/2 = 1/8]
* divide proper fractions by whole numbers [for example, 1/3 ÷ 2 = 1/6]
* multiply one-digit numbers with up to two decimal places by whole numbers
* solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison

**Algebraic proficiency*** use simple formulae
* convert between miles and kilometres

**Solving Equations and Inequalities*** enumerate possibilities of combinations of two variables
* express missing number problems algebraically
* find pairs of numbers that satisfy an equation with two unknowns

**Measuring Space*** 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

**Calculating Space*** recognise that shapes with the same areas can have different perimeters and vice versa
* calculate the area of parallelograms and triangles
* 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]
* recognise when it is possible to use formulae for area and volume of shape
* solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate

**Proportional Reasoning*** solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
* solve problems involving 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

**Patterns*** generate and describe linear number sequences
 | **Revision of Essential Knowledge****Visualising and Constructing*** draw 2-D shapes using given dimensions and angles
* recognise, describe and build simple 3-D shapes, including making nets

**Investigating Properties of Shape*** compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
* illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius

**Investigating Angles*** recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

**Presentation of Data*** interpret and construct pie charts and line graphs and use these to solve problems

**Measuring Data*** calculate and interpret the mean as an average

**Secondary Transition Units to be agreed with KS3****Mathematical Investigations****Problem Solving Tasks****Maths Within the Curriculum****Any Units of work that need to be covered** |