| Maths: White Rose Maths | | | | | | |
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| | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
| Early Years -Nursery | **Number**<br>-Know one to one correspondence when counting to 3<br>-Children can assign one number name to each object that is being counted.<br>-Children can count each object only once and they have counted every object.<br>-Children can subitise different objects to 2 without counting them.<br>-Children can compare the number of objects to 3 and say whether there are more or less in a group<br>-Know how old they are.<br>-Children can collect a number of objects in play.<br>-Children can recite the number names to 3 in the correct sequence and back to 0<br>(without the symbols).<br>**Spatial reasoning SSM**<br>Children can recognise and repeat simple patterns.<br>-Children understand the concepts of more and less.<br>-Children can sort and match objects to the picture or symbol.<br>-Children can sort and group objects together based on their number.<br>-Children know some routines linked to times of the day.<br>-Children show an interest in shapes by playing with them..<br>-Children can play with jigsaws under 10 pieces.<br>**Problem Solving and reasoning** | **Number**<br>-Children develop fast recognition of up to 3 objects, without having to count them individually ('subitising').<br>-Children know one to one correspondence when counting to five.<br>-Children know that the last number reached when counting a small set of objects tells you how many there are in total ('cardinal principle').<br>-Children can show 'finger numbers' up to 5. -Children can sing songs with number focus to 10.<br>-Children can point to small groups of two or three objects:<br>-Children can regularly say the counting sequence, in a variety of playful contexts,<br>-Children can count things and then repeat the last number.<br>**Spatial reasoning SSM**<br>-Children understand the concept of more and less.<br>-Children begin to understand the idea of taller, shorter, longer and shorter and compare objects.<br>-Children can describe a simple pattern.<br>-Children learn the concept of most and least.<br>-Children can match sets that have the same number of items. | **Number**<br>-Children can subitise 4.<br>-Children Understand that the number assigned to the final object in a group is the total number of objects in that group.<br>-Children know how many there will be if there is 1 more or 1 less.<br>- Children begin to use the numeral for 0, 1, 2, 3, 4 and 5 and learn how to write the numerals.<br>-Children know how to pronounce the number correctly and match objects to the numeral.<br>**Spatial reasoning SSM**<br>-Children understand the concept of seasons in the year.<br>-Children understand a day of the week as a unit of time.<br>-Children understand the concept of early and late.<br>-Children know that something is warmer, colder, cold and warm.<br>-Children know the shapes: circle and square.<br>Children know the shapes: sphere; cone and cube.<br>-Children can count the sides of a shape.<br>-Children can sort different shapes.<br>-Children can complete patterns using shapes.<br>-Children understand the concept of a pattern and when it is not a pattern.<br>**Problem Solving and Reasoning** | **Number**<br>Children can assign a number to the final object in a group and know the total number of objects in that group up to 10.<br>-Children can link numerals and amounts:<br>-Children can Subitise to 5.<br>-Children can count up from 5 to count numbers to 10.<br>-Children can use a number line and how it can help us to count.<br>-Children can use one more and one less up to 10.<br>-Children learn the ordinal numbers: 1st<br>-Children can compare quantities using language: 'more than', 'fewer than'.<br>**Spatial reasoning SSM**<br>-Know how to sort objects into different groups (up to 5 and use physical venn diagrams (hoops) to sort the groups)<br>-Order objects from tallest to shortest, longest to shortest.<br>-Select a named shape from a mix of shapes.<br>Know which shapes cover a space.<br>-Understand the idea of equal.<br>- Know the difference to a square and a cube.<br>-Know that the day is divided into hours.<br>-Recognise shapes in the environment.<br>**Problem Solving and reasoning** | **Number**<br>-Children understand that anything can be counted including things that can not be touched.<br>-Children know how many there are after counting (cardinal principle.)<br>-Children can say how many there might be before they count to give a purpose to counting:<br>-Children know the key skills of counting objects including saying the numbers in order and matching one number name to each item to 10.<br>-Children can count out a smaller number from a larger group:<br>**Spatial reasoning SSM**<br>-Children understand position through words alone<br>-Children can describe a familiar route.<br>-Children can use spatial words in play, including 'in', 'on', 'under', 'up', 'down', 'besides' and 'between'.<br>-Children understand the concept of 'o'clock.<br>**Problem Solving and reasoning**<br>-Children can compare the difference and similarities between 2 shapes.<br>-Children can 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' | **Number**<br>Children can count up and backwards from 10. (Children to also use 1p coins and understand the context of money.)<br>-Children can match numbers to the number of objects to 10<br>-Children match cardinal with ordinal numbers to 10th.<br>Children can count and sort objects up to 10 into different groups using hoops as a physical Venn diagram.<br>-Children can extend number counting to 15. -<br>Children can identify missing numbers on a number line to 15.<br>-Children learn how to write numbers to 10.<br>-Children can say the preceding and following number.<br>-Children can say the number one more or one less than.<br>**Spatial reasoning SSM**<br>-Children can make comparisons between objects relating to size, length, weight and capacity.<br>-Children can combine shapes to make new ones.<br>Children can extend and create ABAB patterns.<br>-Children can describe a sequence of events.<br>**Problem Solving and reasoning**<br>-Children can count down to forthcoming events on a calendar in terms of number of days or sleeps. |

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| | -Children can say simple sentences e.g. there are 2 flowers.<br>-Children can say sentences using more or less<br>-Solve the problem of an incorrect pattern.<br>-Solve practical problems e.g. matching the correct picture to the time of the day; matching the line of water in the glass to be more or less. | -Children can sort objects according to their own categories.<br>-Children can play jigsaws up to 15 pieces.<br>**Problem Solving and reasoning**<br>-Children can describe a pattern<br>-Children can create their own pattern<br>-Children can solve problems with a comparisons of length e.g. can anyone make a rolled playdough longer that this one?<br>- Children can sort and match e.g. the number of bricks in one tower to the number in another. . | Children can play games such as hopscotch and skittles with numerical representations.<br>-Children can identify when a number sequence is wrong and what the correct sequence is.<br>-Children can identify shapes.<br>-Children can match shapes.<br>-Children can compare shapes.<br>-Children can talk about how they know it is cold or warm from a picture. | -Children can talk about shapes and patterns and explain what the pattern is.<br>-Children solve real life problems including 'Is there enough?' and comparing differences. | | -Children can refer to the days of the week, and the day before or day after, 'yesterday' and 'tomorrow' |
| Early Years Reception | **Counting and fluency: numbers and patterns**<br>**Match and Sort**<br>. Children understand that a collection of objects can be sorted into sets based on attributes<br>. Children understand that the same collection of objects can be sorted into different ways.<br>**Compare Amounts**<br>. Children can compare numbers of a collection.<br>. Children can use the terms fewer, fewest, more and most correctly.<br>Children can use 1-1 correspondence to compare a number.<br>**Explore patterns**<br>-Children can continue and create their own simple repeating pattern<br>**Represent, compare and understand the composition of 1 2 and 3** | **Counting and fluency: numbers and patterns**<br>**Represent numbers up to 5 (WRM)**<br>**.** Children understand the composition of 4 and 5<br>**.** Children can subitise up to 5 items.<br>**One more and one less (WRM)**<br>. Children can compare using one more or one less.<br>**Spatial Reasoning SSM**<br>-Children know that circles have one curved side.<br>-Children know that triangles have 3 straight edges.<br>-Children can find 2d shapes within 3d shapes<br>**Shapes with 4 sides (WRM)**<br>-Children know that squares and rectangles have 4 straight sides and corners.<br>**Measures – Time- Day and Night (WRM)**<br>-Children know the concept of night and day. | **Counting and fluency: numbers and patterns**<br>**Introducing 0 (WRM)**<br>. Children understand the name and numeral 0 and that this can be represented by an idea.<br>**Comparing numbers to 5 (WRM)**<br>. Children learn to compare numbers using one more and one less.<br>. Children learn to use fewer or more when comparing.<br>. Children learn to use the same as when there is an equal amount.<br>**Composition of 4 and 5 (WRM)**<br>. Children understand that 4 and 5 can be made up of smaller numbers.<br>**6,7 and 8 (WRM)**<br>. Children can count to 6,7 and 8.<br>. Children can represent 6, 7 and 8. | **Counting and fluency: numbers and patterns**<br>**Making pairs (WRM)**<br>. Children understand a pair is 2.<br>**Combining 2 Groups (WRM)**<br>. Children can add 2 numbers together.<br>**9 and 10**<br>.Use number symbol with its cardinal number value<br>. Children can count to 9 and 10.<br>. Children can count back from 9 and 10.<br>. Children can represent 9 and 10 in different ways.<br>**Comparing numbers to 10 (WRM)**<br>. Children can make comparisons by lining up numbers using 1-1 correspondence. (Children can create a physical graph representation to compare numbers) | Counting and fluency: numbers and patterns<br>**Building Numbers Beyond 10 (WRM)**<br>. Children identify numbers up to 20<br>. Children identify that larger numbers are made of a full ten and part of a ten.<br>**Counting patterns beyond 10 (WRM)**<br>. Children can count on and back beyond 10. (This includes counting in £1 using £1 coins and understand the context of money)<br>. Children can count on and back from different starting points.<br>**Adding More and Taking Away**<br>. Children can add more to a group of numbers.<br>. Children can take away from a group to make less.<br>**Spatial Reasoning SSM** | **Counting and fluency: numbers and patterns**<br>**Doubling (WRM)**<br>.Children understand double means twice as many. (Use a £2 coin and a £1 coin to develop the understanding of money.)<br>**Sharing and Grouping (WRM)**<br>Children can group, share out a quantity fairly.<br>Children identify that sometimes items can be left over when sharing<br>- Children share objects equally into 2 or 3 equal groups. (Use hoops for physical Venn diagrams to sort objects)<br>**Even and Odd (WRM)**<br>.Children understand that some quantities will share equally into groups of two and some wont.<br>**Deepening and Understanding** |

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| | . Children identify representations of 1 2 and 3.<br>. Children understand that each number is 1 more than before.<br>. Children explore the composition of 2 and 3.<br>**Spatial reasoning SSM**<br>**Compare size, mass and capacity.**<br>**.** Children understand that objects can be compared and ordered according to their size.<br>.Children can use specific language such as tall, long and short. | -Children know that things happen at different times of the day. | . Children can arrange 6, 7 or 8 items.<br>**Spatial reasoning SSM**<br>**Compare Mass (WRM)**<br>Children can compare weights and say which is the heaviest/lightest.<br>Children can use light or heavy as a term to describe the weight of an object.<br>-Children can be human balance scales and compare the weight of 2 objects and say which is lighter or heavier.<br>**Compare Capacity**<br>. Children understand if an object is full, half full or empty.<br>. Children can compare capacity in different containers. | .Children can compare numbers in their counting order.<br>**Bonds to 10 (WRM)**<br>. Children know number bonds up to 10.<br>**Spatial Reasoning SSM**<br>**Length and Height (WRM)**<br>. Children can describe the length of an object<br>. Children can describe the height of an object<br>. Children can make direct comparisons in length and height.<br>**Time (WRM)**<br>. Children can order and sequence important times in their day.<br>-Children understand the concept of yesterday, today and tomorrow.<br>- Children can unscramble events so that they are in order.<br>**3d shapes (WRM)**<br>. Children begin to know the names of 3d shapes. (sphere, cone, cube, cuboid and cylinder)<br>. Children group shapes with similar properties.<br>**Patterns (WRM)**<br>. Children can make patterns with various rules | **Match, Rotate and Manipulate (WRM)**<br>Children can select and rotate shapes to fill a given space.<br>**Compose and Decompose (WRM)**<br>. Children understand that shapes can be combined and separated to make new shapes. | .Children can explain a pattern.<br>- Children explore the relationship between numbers and shapes<br>**Spatial Reasoning SSM**<br>**Visualise and Build (WRM)**<br>.Children recognise a shape can have other shapes within it.<br>Children understand that places and models can be replicated. |
| Year 1 | **Number - Place Value: Numbers 1-10**<br>-Know how to count to and across 10, forwards and backwards, beginning with 0 or 1 , or from any given number.<br>-know how to Count numbers to 10 in numerals; count in multiples of 2s, and 5s | **Number - Addition and Subtraction within 10**<br>-objectives continued on from Autumn 1.<br>**Shape – Geometry**<br>-recognise and name common 2d shapes (including squares, circles, rectangles, triangles.) (They also need to know – semi-circle, pentagon, hexagon and octagon) | **Number - Place Value within 20**<br>-Know how to count to and across 20, forwards and backwards, beginning with 0 or 1 , or from any given number.<br>-know how to Count numbers to 20 in numerals; count in multiples of 2s, 5s and 10s | **Place Value (within 50)**<br>-Know how to count to and across 50, forwards and backwards, beginning with 0 or 1 , or from any given number.<br>-know how to Count numbers to 50 in numerals; count in multiples of 2s, 5s and 10s. | **Number - Multiplication and Division**<br>-Solve 1 step problems involving multiplication and division using materials, arrays, repeated addition, mental methods and multiplication and division facts including solving problems in context.<br>**Number – Fractions** | **Geometry - Position and Direction**<br>-describe position, direction, movement, including whole, half, quarter and three quarters.<br>**Number - Place Value within 100**<br>-Know how to count to and across 100, forwards and backwards, beginning with 0 |

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| | -identify and represent numbers using objects and pictorial representations.<br>-read and write number to 10 in numerals and words.<br>-identify one more or one less than a given number<br>**Number - Addition and Subtraction within 10**<br>-add and subtract 1 digit numbers to 10 including 0<br>- read, write and interpret mathematical statements involving +, - and =.<br>-Represent and use number bonds and related subtraction facts up to 10.<br>-Solve 1 step problems that include + and – using concrete objects and pictorial representations and missing number problems. | -recognise and name common 3d shapes (including cuboids, cubes, pyramids and spheres.) (They also need to know hemispheres.) | -identify and represent numbers using objects and pictorial representations.<br>-read and write number to 20 in numerals and words.<br>-identify one more or one less than a given number<br>**Addition and Subtraction within 20**<br>add and subtract 1 and 2 digit numbers to 20 including 0<br>- read, write and interpret mathematical statements involving +, - and =.<br>-Represent and use number bonds and related subtraction facts up to 20.<br>-Solve 1 step problems that include + and – using concrete objects and pictorial representations and missing number problems.(Use physical graphs and Venn diagrams to sort objects) | -identify and represent numbers using objects and pictorial representations.<br>-read and write number to 50 in numerals and words.<br>-identify one more or one less than a given number<br>**Measurement - Length and Height**<br>-Compare, describe and solve practical problems for lengths and heights.<br>-Measure and begin to record height and length<br>**Measurement - Weight and Volume**<br>-Compare, describe and solve practical problems for weight and volume<br>-Measure and begin to record weight and volume | -recognise, find and name a half as one of two equal parts of a shape, object or quantity.<br>-recognise, find and name a quarter as one of four equal parts of an object, shape or quantity. | or 1 , or from any given number.<br>-know how to Count numbers to 100 in numerals; count in multiples of 2s, and 5s<br>-identify and represent numbers using objects and pictorial representations.<br>-read and write number to 100 in numerals and words.<br>-identify one more or one less than a given number<br>**Measurement - Money**<br>-Recognise and know the value of different denominations of coins and notes (1p- £50)<br>**Measurement – Time**<br>-sequence events in chronological order using language (before, after, next, first, today, yesterday, tomorrow, morning, afternoon and evening.<br>-recognise and use language relating to dates including days of the week, weeks, months and years.<br>- tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. |
| Year 2 | **Number - Place Value**<br>-Count in steps of 2,3 and 5 from 0 and in tens from any number , forward and backward.<br>-read and write numbers to at least 100 in numerals and words.<br>-identify, represent and estimate numbers using different representations including a number line. | **Number - Addition and Subtraction**<br>-objectives continued from Autumn 1<br>**Geometry - Properties of Shape**<br>-Identify and describe the properties of 2d shapes, including the number of sides and line of symmetry in a vertical line.<br>-Identify 2d shapes on the surface of 3d shapes (e.g. a | **Measurement – Money**<br>-recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.<br>-find different combinations of coins that equal the same amount of money.<br>- solve simple problems in a practical context involving addition and subtraction of money of the same unit including giving change | **Measurement - Length and Height**<br>-choose and use appropriate standard units to estimate measure:<br>length/height in any direction (m/cm)<br>use rulers.<br>-Compare and order length/height and record the results using <> or =<br>**Measurement- Mass, Capacity and Temperature** | **Number - Fractions**<br>-recognise, find name and write fractions 1/3, ¼, 2/4 and ¾ of a length, shape set of objects or quantity.<br>-Recognise the equivalence of 2/4 and ½<br>-Write simple fractions e.g. ½ of 6 = 3<br>**Measurement – Time**<br>-compare and sequence intervals of time.<br>-tell and write the time to 5 minutes, including quarter | **Statistics**<br>-Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.<br>-Ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity.<br>- ask and answer questions about totalling and comparing categorical data. |

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| | -recognise the place value of each digit in a 2 digit number (ones and tens)<br>-Compare and order numbers from 0 – 100. Use < > and +<br>Use place value and number facts to solve problems.<br>**Number - Addition and Subtraction**<br>-recall and use addition and subtraction facts to 20 fluently and derive and use related facts up to 100.<br>-Show that addition of 2 numbers can be done by any order (communitive law) and subtraction of one number from another cannot.<br>-recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems<br>-Add and subtract numbers using concrete objects, pictorial representations and mentally including:<br>A 2 digit number and ones<br>A 2 digit number and tens<br>Two 2 digit numbers<br>Adding three 1 digit numbers. | circle on a cylinder and a triangle on a pyramid.)<br>-compare and sort common 2d shapes and everyday objects.<br>-recognise and name common 3-d shapes (e.g. cubes, pyramids and spheres)<br>-compare and sort common 3d shapes and everyday objects. | **Number - Multiplication and Division**<br>-recall and use multiplication and division facts for 2,5 and 10 multiplication times tables including recognising odd and even numbers.<br>-show the multiplication of two numbers can be done in any order (commutative) and division of on number cannot.<br>-calculate mathematical statements for multiplication and division within the multiplication tables and write them using x, divide and = signs.<br>-solve problems involving multiplication and division using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts. | -choose and use appropriate standard units to estimate measure:<br>Temperature (oC) mass (kg/g) capacity (litres/ml) to the nearest appropriate unit using scales, thermometers, and measuring vessels.<br>-Compare and order mass, capacity and temperature and record the results using <> or = | past/to the hour and draw the hands on a clock face to show these times<br>-know the number of minutes in an hour and the number of hours in a day. | **Geometry - Position and Direction**<br>-order and arrange combinations of mathematical objects in patterns and sequences.<br>-use mathematical vocabulary to describe position, direction and movement, including movement in a straight line distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise) |
| Year 3 | **Number - Place Value to 1000**<br>-count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number.<br>-identify, represent, and estimate number using different representations.<br>-read and write numbers up to 1000 in numerals and words.<br>-recognise the place value of each digit in a 3 digit number (hundreds, tens and ones)<br>-compare and order numbers up to 1000. | **Number - Addition and Subtraction cont..**<br>-objectives continued from Autumn 1.<br>**Number - Multiplication and Division**<br>-Recall and use multiplication and division facts for the 3,4 and 8 multiplication tables.<br>-count from 0 in multiples of 4, 8, 50<br>-write and calculate mathematical statements for multiplication and division using the multiplication | **Number - Multiplication and Division**<br>-objectives continued from Autumn 2<br>**Measurement - Lengths and perimeter**<br>-measure, compare, add and subtract lengths (m/cm/mm)<br>-measure the perimeter of simple 2d shapes. | **Number - Fractions**<br>-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.<br>-Recognise, find and write fractions of a set of discrete set of objects: unit fractions and non-unit fractions with small denominators.<br>-recognise and use fractions and non-unit fractions with small denominators. | **Number – Fractions**<br>Same as Spring 2 but also:<br>-recognise and show using diagrams, equivalent fractions with small denominators.<br>-compare and order unit fractions, and fractions with the same denominator.<br>**Measurement – Money**<br>-Add and subtract amounts of money to give change, using both £ and p in practical contexts. | **Measurement – Time**<br>-Objectives continued from Summer 1<br>**Geometry - Property of shapes**<br>-draw 2-d shapes.<br>-make 3-D shapes using modelling materials.<br>-Recognise 3D shapes in different orientations and describe them.<br>**Statistics**<br>-interpret and present data using bar charts, pictograms and tables. |

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| | -solve number problems and practical problems involving these ideas.<br>**Number - Addition and Subtraction**<br>-estimate the answer to a calculation and use inverse operations to check answers.<br>-add and subtract numbers mentally including:<br>a 3 digit number and ones<br>a 3 digit number and tens<br>a 3 digit number and hundreds<br>-add and subtract numbers up to 3 digits using formal written methods of column addition and subtraction.<br>-solve problems including missing number problems, using number facts, place value and more complex addition and subtraction. | tables that they know, including 2 digit number times, one digit numbers, using mental and progressing to formal written methods. | | -solve problems that involve fractions.<br>**Measurement: Mass and capacity**<br>-Measure, compare, add and subtract mass (kg/g) and capacity (l/ml | **Measurement: Time**<br>-tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12 hour and 24 hour clocks.<br>-estimate and read time with increasing accuracy to the nearest minute<br>-record and compare time in terms of seconds, minutes, hours.<br>-use vocabulary such as o'clock, am, pm, morning, afternoon, noon and midnight.<br>-Know the number of seconds in a minute and the number of days in each month year and leap year.<br>-compare durations of events (e.g. the time taken by particular events or tasks.) | -solve one-step and two-step (e.g. How many more? How many fewer?) using information presented in scaled bar charts and pictograms and tables |
| Year 4 | **Number - Place Value**<br>-count in multiples of 6,7,9,25 and 1000.<br>-count backwards through zero to include negative numbers.<br>-identify, represent and estimate numbers using different representations.<br>-Read Roma numerals to 100 (I to C) and know that over time the numeral system changed to include the concept of zero and place value.<br>-Find 1000 more or less than a give number.<br>-recognise the place value of each digit in a four-digit number (thousands, hundreds, tens and ones)<br>-order and compare numbers beyond 1000. | **Measurement – Area**<br>- Convert between different unit of measures.<br>-Estimate, compare and calculate different measures<br>-Find the area of a rectilinear shapes by counting squares<br>**Number - Multiplication and Division**<br>-Recall multiplication and division facts for multiplication tables up to 12 x 12.<br>-Use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers.<br>-Recognise and use factor pairs and commutativity in mental calculations. | **Number - Multiplication and Division**<br>-Same objectives as Autumn 2 but also:<br>- multiply 2-digit and 3-digit numbers by one-digit number using formal layout.<br>- 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.<br>**Measurement: Length and Perimeter**<br>- Convert between different unit of measures.<br>-Estimate, compare and calculate different measures. | **Number – Fractions**<br>-Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.<br>-Recognise and show, using diagrams, families of common equivalent fractions.<br>-Add and subtract fractions with the same denominator.<br>-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.<br>**Number – Decimals** | **Number – Decimals**<br>-Round decimals with one decimal place to the nearest whole number.<br>- Compare numbers with the same number of decimal places up to two decimal places<br>-Solve simple measure and money problems involving fractions and decimals to tow decimal places<br>**Measurement – Money**<br>-Estimate, compare and calculate different measures including money in pounds and pence.<br>**Measurement - Time**<br>-Read, write and convert time between analogue and digital 12- and 24-hour clocks. | **Statistics**<br>-Interpret and present discrete and continuous data using appropriate graphical methods including bar charts and time graphs.<br>-Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.<br>**Geometry - Properties of Shape (including 3d shapes)**<br>-Compare and classify geometric shapes, including quadrilaterals and triangles based on their properties and sizes.<br>-Identify lines of symmetry in 2-D shapes presented in different orientations.<br>-Identify acute and obtuse angles and compare and |

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| | -Round any number to the nearest 10, 100 or 1000.<br>-solve number and practical problems that involve all the above with increasingly large positive numbers.<br>**Number - Addition and Subtraction**<br>-Estimate and use inverse operations to check answers to a calculation.<br>-Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.<br>-solve addition and subtraction 2-step problems in contexts, deciding which operations and methods to use and why. | | -Measure and calculate the perimeter of rectilinear figure (including squares) in cm and m. | -Recognise and write decimal equivalents of any number of tenths or hundredths.<br>-Recognise and write decimal equivalents to ¼ ½ ¾<br>-Know the effect of dividing one- or two-digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths.<br>-Solve simple measure and money problems involving fractions and decimals to tow decimal places. | -Solve problems involving converting from hours to minutes, minutes to seconds, years to months and weeks to days. | order angles up to two right angles by size.<br>-Complete a simple symmetric figure with respect to a specific line of symmetry.<br>**Geometry - Position and direction**<br>-Describe positions on a 2-D grid as coordinates in the final quadrant.<br>-Describe movements between positions as translations of a given unit to the left/right and up/down.<br>-Plot specified points and draw sides to complete a given polygon. |
| Year 5 | **Number - Place Value:**<br>-Count forwards or backwards in steps of powers of 10 for any given number up to 1000000.<br>-Count forward and backwards with positive and negative whole numbers, including through 0.<br>-Read, write, (order and compare) numbers to at least 1000000 and determine the value of each digit.<br>- Read Roman numerals to 10000 (M) and recognise years written in Roman Numerals.<br>-Solve number problems and practical problems that involve all of the above.<br>**Number - Addition and Subtraction:**<br>-Use rounding to check answers to calculations and determine, in the context of a problem. Levels of accuracy. | **Multiplication and Division:**<br>-Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.<br>-know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.<br>- know whether a number up to 100 prime and recall prime numbers up to 19.<br>- know and use square numbers and cube numbers and their notations.<br>-know how to solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.<br>**Number - Fractions** | **Number – Multiplication and Division**<br>-Know how to multiply numbers up to 4 digits by 1- or 2-digit number using a formal written method, including long multiplication for 2-digit numbers.<br>-Know how to divide and multiply numbers mentally drawing upon known facts.<br>-know how to divide numbers up to 4 digits by a 1-digit number using the formal written method of short division and interpret remainders approximately for the context.<br>-Know hoe to multiply and divide whole numbers and those involving decimals by 10, 100 and 1000<br>**Number - Fractions:** | **Number - Decimals and Percentages:**<br>-Know how to read and write decimal numbers as fractions e.g. 0.71 = 71/100<br>- Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.<br>-Know how to round decimals with 2 decimal places to the nearest whole number and to 1 decimal place.<br>- Read, write, order and compare numbers with up to 3 decimal places.<br>-Recognise the % symbol and understand that percent relates to 'number of parts in 100'.<br>- Know how to write percentages as a fraction with denominator 100 and as a decimal. | **Geometry: Properties of shape**<br>- Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.<br>-Use the properties of rectangles to deduce related facts and find missing lengths and angles.<br>- Identify 3-d shapes, including cubes and other cuboids, from 2-d representations.<br><br>**Geometry – Position and Direction**<br>-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. | **Number – Decimals**<br>-Know how to solve problems involving number up to 3 decimal places<br>**Number – Negative Numbers**<br>-interpret negative numbers in context.<br>-count forwards and backwards with positive and negative whole numbers, including through 0<br>**Measures - convert metric units.**<br>-Know how to convert between different units of metric measure e.g. km-m, cm-m, cm-mm, g-kg, l-ml.<br>-Know and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.<br>**Measures – Volume** |

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| | -Add and subtract whole numbers with more than 4 digits including using formal written methods (columnar addition and subtraction)<br>-Add and subtract numbers mentally with increasingly large numbers.<br>-Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. | -add and subtract fractions with the same denominator and denominators that are multiples of the same number.<br>-Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.<br>-Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 1 1/5)<br>-Know how to compare and order fractions whose denominators are all multiples of the same number. | *Same as Autumn 2 apart from add and subtract fractions changes to:*<br>-multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams | -Know how to solve problems which require knowing percentage and decimal equivalents of ½ ¼ 1/5 2/5 4/5 and those fractions with a denominator of a multiple of 10 or 25.<br>**Measurement – Perimeter and Area**<br>-know how to measure and calculate the perimeter of composite rectilinear shapes in cm and m.<br>-know how to calculate and compare the area of rectangles (including squares), and including using standard units, square cm and square m and estimate the area of irregular shapes.<br>**<u>Statistics</u>**<br>-Complete, read and interpret information in tables, including timetables.<br>-Solve comparison, sum and difference problems using information presented in graphs | **Geometry – Angles and Lines**<br>-know angles are measured in degrees: estimate and compare acute obtuse and reflex angles.<br>-Draw given angles, and measure them in degrees.<br>-Identify angles at a point and one whole turn.<br>-Identify angles on a point on a straight line and ½ a turn.<br>-Identify other multiples of 90 degree turns. | -Use all four operations to solve problems involving measure, using decimal notation including scaling.<br>-Know how to estimate volume and capacity |
| Year 6 | **Number - Place Value:**<br>-Know how to read and write numbers up to 10,000,000 and determine the value of each digit.<br>-Know how to round any whole number to a required degree of accuracy.<br>-Know how to use negative numbers in context, and calculate intervals across zero.<br>-Know how to solve number and practical problems that involve all of the above.<br>**Number - Calculation:**<br>-Know how to perform mental calculations, including with | **Number - Fractions:**<br>-Know how to use common factors to simplify fractions; use common multiples to express fractions in the same denomination.<br>-Know how to compare and order fractions, including fractions > 1<br>- Know how to add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.<br>-Know how to multiply simple pairs of proper fractions, writing the answer | **<u>Number - Decimals:</u>**<br>-Identify the value of each digit in numbers given to 3 decimal places.<br>-Know how to Multiply and divide numbers by 10,100 and 1000 giving answers up to 3 decimal places.<br>-Know how to multiply 1-digit numbers with up to 2 d.p. by whole numbers.<br>-Know how to use written division methods in cases where the answer has up to 2 d.p.<br>-Know how to solve problems which require answers to be | **Measures – Converting Units**<br>**-**Know how to solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 d.p. where appropriate.<br>-Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit to a larger unit and vice versa using decimal notation up to 3 d.p.<br>-Know how to convert between km and miles. | **Geometry - Properties of Shapes**<br>-Know how to draw 2-D shapes using given dimensions and angles.<br>-Know how to compare and classify geometric shapes based on their properties and sizes.<br>- Know how to illustrate and name parts of circles, including radius, diameter, and circumference and know that the diameter is twice the radius.<br>-Recognise, describe and build simple 3-D shapes, including making nets. | Project work: Enterprise Day, managing a budget, profit and loss. Money management. Solving problems using all 4 claculations. |

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| | mixed operations and large numbers.<br>-Know how to use their knowledge of operations to carry out calculations involving the four operations.<br>-Know how to solve addition and subtraction multi-step problems in context deciding which operations and methods to use and why.<br>-Identify common factors, common multiples and prime numbers.<br>-Know how to use estimation to check answers to calculations and determine, in the context of a problem and appropriate degree of accuracy.<br>-Know how to multiply multi-digit numbers up to 4 digits by 2-digit whole numbers using the formal written method of long multiplication.<br>-Know how to divide numbers up to 4 digits by 2-digit whole number using the formal written method of long division, and interpret remainders, fractions or by rounding, as appropriate for the context.<br>-Know how to divide numbers up to 4 digits by a 2-digit number using the formal written method of short division and where appropriate, interpreting remainders according to the context.<br>-Know how to perform mental calculations, including with mixed operations and large numbers. | in its simplest form e.g. ¼ x ½ = 1/8<br>-Know how to divide proper fractions by whole numbers e.g. 1/3 * 2 = 1/6 | rounded to specific degrees of accuracy.<br>-Know how to associate a fraction with division and calculate decimal fraction equivalents.<br>**Number - Percentages**<br>-Recall and use equivalences between simple fractions, decimals and percentages including different contexts.<br>**Algebra**:<br>-Know how to use simple formulae.<br>-Know how to generate and describe linear number sequences.<br>-Know how to express missing number problems algebraically.<br>-Know how to find pairs of numbers that satisfy an equation with 2 unknowns.<br>-Know how to enumerate possibilities of combinations of two unknowns. | **Measures – Perimeter, Area and Volume**<br>-Know that shapes with the same areas can have different perimeters and vice versa.<br>-Recognise when it is possible to use formulae for areas and volumes of shape.<br>-Know how to calculate the area of parallelograms and triangles.<br>- Know how to calculate, estimate and compare volume of cubes and cuboids using standard units, including cm3 and m3 and extending to other units.<br>**Number – Ratio**<br>-Know how to solve problems involving relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts.<br>-Know how to solve problems involving the calculation of percentages( e.g. 15% of 360) and the use of percentages for comparison.<br>-Know how to solve problems involving similar shapes where the scale factor is known or can be found.<br>-Know how to solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. | **Statistics**<br>-Interpret and construct pie charts and line graphs and use these to solve problems. Know how to calculate and interpret the mean as an average.<br>**Geometry – Position and Direction**<br>-Describe positions on the full coordinate grid (all 4 quadrants)<br>-Draw and translate simple shapes on the coordinate plane, and reflect them in the axes. | |

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| | -Know how to solve problems involving addition, subtraction, multiplication and division.<br>- Use their knowledge of the order of operations to carry out calculations involving the 4 operations. | | | | | |