Curriculum Design:

Including Endpoints

Maths

Maths Overview

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS 1	**Match, sort and compare – Weeks 3-4** Comparison1.1Compare sets 1-5 using vocabulary of more / fewer/ most/fewest **Talk about measure and patterns – Weeks 5-7** Compare height and length, notice and talk about patterns. **1,2,3 counting and cardinality** accurately and consistently count to 5 verbally, count 3 items accurately using 1:1 correspondence, subitise 1 & 2 items	**Shapes and position** find shapes in the environment, to match/sort shapes. To understand and use simple language of position that doesn't vary by viewpoint (in, on, under, next to) to explore construction with 3D shapes – combining shapes in two dimensions, use language of position that can vary by viewpoint (in front, behind) **1,,2,3 counting and cardinality** accurately and consistently count to 5 verbally, count 3 items accurately using 1:1 correspondence, subitise 1 & 2 items				
EYFS 2	**Match, sort and compare – Weeks 3-4** Comparison1.1Compare sets 1-5 using vocabulary of more / fewer/ most/fewest **Talk about measure and patterns – Weeks 5-7** Compare size, mass, capacity; copy, continue and create simple patterns	**It's me 1,2,3 – Weeks 1-2** Subitise 1,2,3; 1 more, 1 less; composition of 1,2,3 **Circles and Triangles – Week 3** Identify and name circles and triangles; Compare circles and triangles; Shapes in the environment; Describe position **1,2,3,4,5 – Weeks 4-5** Find 4 and 5; Subitise 4 and 5; Represent 4 and 5; 1 more; 1 less; Composition of 4 and 5; Composition of 1 – 5 **Shapes with 4 sides – Week 6** Identify and name shapes with 4 sides; Combine shapes with 4 sides; Shapes in the environment; My day and night	**Alive in 5 – Weeks 1-2:** Introduce zero; Find 0 to 5; Subitise 0 to 5; Represent 0 to 5 **Mass and Capacity – Week 3** Compare mass; find a balance; Explore capacity; Compare capacity **Growing 6,7,8 – Week 4-5**: Find 6,7,8; represent 6,7,8; 1 more; 1 less; Composition of 6,7,8; make pairs – odd and even; Double to 8 (find a double); Double to 8 (make a double); combine 2 groups; conceptual subitising **Length, height, time -Week 6:** Explore and compare length and height	**Length, height, time -Week 1:** Talk about time; order and sequence time **Building 9 and 10 – Weeks 2-4:** Compare and order numbers to 10; represent 9 and 10; subitising to 10; 1 more 1 less; bonds to 10; make arrangements of 10 **Explore 3D shapes – weeks 5-6** Recognise and name 3D shapes; find 2D shapes within 3D shapes; 3D shapes in the environment; identify more complex patterns; copy and continue patterns; patterns in the environment	**To 20 and beyond – Week 1-2** Build numbers beyond (10-13); Continue patterns beyond 10 (10-13); Build numbers beyond 10 (14-20); Continue patterns beyond 10 (14-20); Verbal counting beyond 20; Verbal counting patterns **How many now? – Week 3** Add more; How many did I add?; Take away; How many did I take away? **Manipulate compose and decompose – Week 4-5** Select shapes for a purpose; Rotate shapes; Manipulate shapes; Explain shape arrangements; Compose shape; Decompose shapes; Copy 2-D shape picture; Find 2-D shapes within 3-D shapes	**Sharing and grouping – Week 1** Explore sharing; Sharing; Explore grouping; Grouping; Even and odd sharing; Play with and build doubles **Visualise, build and map Week– 2-4** Identify units of repeating patterns; Create own pattern rules; Explore own pattern rules; Replicate and build scenes and constructions; Visualise from different positions; Describe positions; Give instructions to build; Explore mapping; Represent maps with models; Create own maps from familiar places; Create own maps and plans from story situations **Make connections – Week 5**

					Sharing and grouping – Week 6 Sharing: Explore grouping; Grouping; Even and odd sharing; Play with and build doubles	Deepen understanding; Patterns and relationships **Consolidation – Week 6**
Year 1	**Place Value, weeks 1-4** **Numbers to 10:** Count to 10 forwards and backwards beginning with 0 or 1 or from any given number; Count, read and write numerals to 10 in numerals and words; Given a number, identify one more or one less; Identify and represent numbers using objects and pictorial representation including a number line and use the language of equal to, more than, less than, (fewer) most, least **Addition and Subtraction up to 10, weeks 5-7** Represent and use number bonds and related subtraction facts within 10; Read, write and interpret mathematical statements involving addition, subtraction and equal signs; Add and subtract one-digit numbers to 10 including 0; Solve one step problems that involve addition and subtraction using concrete objects and pictorial representation and missing number problems	**Place Value: Weeks 1-3** **Numbers to 20:** Count to 20 forwards and backwards from any given number; Count, read and write numbers to 20 in numerals and words; Given a number identify one more or one less; Identify and represent numbers using objects and pictorial representation including a number line and use the language of equal to, more than, less than, (fewer) most, least **Measures– Weeks 4-5** Measure and begin to record lengths and heights; Compare, describe and solve practical problems for lengths and heights e.g. long/short, longer/shorter, tall/short, double/half **Geometry– Weeks 6-7** Recognise and name common 2-D shapes e.g. square, circle and triangles; Recognise and name common 3-D shapes e.g. Cuboids, cubes, pyramids and spheres; describe position, direction and movement including whole, half, quarter and three-quarter turns	**Place Value: Week 1** **Numbers to 20:** Re-visit concept from Autumn Term **Addition and Subtraction to 20: Weeks 2-3** Represent and use number bonds and related subtraction facts within 20; Read, write and interpret mathematical statements involving addition, subtraction and equal signs; Add and subtract one-digit numbers to 20 including 0 Solve one step problems that involve addition and subtraction using concrete objects and pictorial 7=? -9 **Place Value to 50: Weeks 4-6** Count to 50 forwards and backwards beginning with 0 or 1 or from any given number; Count, read and write numerals to 50 in numerals and words; Given a number, identify one more or one less; Identify and represent numbers using objects and pictorial representation including a number line and use the language of equal to, more than, less than, (fewer) most, least	**Place Value: Week 1** Count in multiples of 2's, 5's and 10's **Measures – Volume and Mass: Week 2** Measure and begin to record mass/weight, capacity and volume; Compare, describe and solve practical problems for mass/weight e.g. heavy/light, heavier than/lighter than, capacity and volume e.g. full/empty, more than/less than, half, half full, quarter; Compare, describe and solve practical problems for capacity and volume (for example, full/empty, more than, less than, half, half full, quarter) **Fractions: Weeks 3-4** 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 **Place Value: Weeks 5-6** **Numbers to 100:** Count to 100 forwards and backwards beginning with 0 or 1 or from any given number; Count, read and write numerals to 100 in numerals and words;Given a number, identify one more or	**Multiplication/ Division: Weeks 1-3** Count in multiples of 2's, 5's and 10's • Solve one step problems involving multiplication and division by calculating the answer using concrete objects, pictorial representations and arrays **Money: Weeks 4-5** Recognise and know the value of different denominations of coins and notes **Assessment Week using White Rose asessments – Week 6**	**Time: Weeks 1-3** Sequence events in chronological order using language eg before, after, next, first, today, yesterday, tomorrow, morning, afternoon and evening; Recognise and use language relating to dates including days of the week, weeks, months and years; Tell the time to the hour and half past the hour and draw hands on a clock face to show these times; Compare, describe and solve practical problems for time e.g. quicker, slower, earlier, later • Measure and begin to record time e.g. hours, minutes seconds **Consolidation: Weeks 4-6** Addressing the needs of the class using RTP documents

				one less; Identify and represent numbers using objects and pictorial representation including a number line and use the language of equal to, more than, less than, (fewer) most, least		
Year 2	**Place value: Weeks 1-3** Read and write numbers to at least 100 in numerals and in words, Recognise the place value of each digit in a two-digit number (tens, ones); Identify, represent and estimate numbers using different representations including the number line; Compare and order numbers from 0 – 100; use < > and = signs; Use place value and number facts to solve problems; Count in steps of 2,3, 5 and tens from any number forwards and backwards **Addition and Subtraction: weeks 4-6** Recall and use addition & subtraction facts to 20 fluently. Derive and use related facts up to 100; Add & subtract numbers using concrete objects, pictorial representations and mentally, including two digit numbers and ones, two digit numbers and tens, two digit number and two digit number and adding 3 one digit numbers; Show that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot; Solve	**Addition and Subtraction: Weeks 1 -2** Recognise and use the inverse relationship between addition and subtraction. Use this to check calculations and solve missing number problems **Money – Weeks 3-4** Recognise and use symbols for pounds and pence (£/p); Combine amounts to make a particular value; Find different combinations of coins that make the same amount of money; Solve simple problems practically, including addition and subtraction and giving change **Geometry: Weeks 5-6** Identify and describe properties of 2D shapes, including the number of sides, vertices and lines of symmetry; Identify and explore the properties of 3D shapes including the numbers of edges, vertices and faces	**Multiplication/ Division: Weeks 1-4** Recall and use multiplication facts for 2, 5 and 10 times tables including recognising odd and even numbers; Calculate mathematical statements for 2, 5 and 10's using multiplication and division using x, ÷ and =; Solve problems using multiplication and division using, materials, arrays, repeated addition and mental methods; Show that multiplication of two numbers can be done in any order (commutative) but division cannot. **Statistics: Week 5** Interpret and construct simple pictograms, tally charts, block diagrams; Ask and answer simple questions by counting the number of objects in each category and sorting the category by quantity; Ask and answer questions about totalling and comparing categorical data **Geometry – Position and Direction: Week 6** Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line	**Fractions: Weeks 1-2** Recognise, find, name and write fractions of a length, shape, set of objects or quantity – halves, thirds, one quarter, two quarters, three quarters; Write simple fractions for example ½ of 6 = 3; Recognise the equivalence of 2 quarters and one half **Measures–Time: Weeks 3-4** Tell and write the time to five minutes, including quarter past/to the hour; Draw hands on a clock to show these times; Know the number of minutes in an hour and the number of hours in a day Compare and sequence intervals of time **Measures- length/height and mass/volume:Weeks 5 & 6** Choose and use appropriate standards of units to estimate and measure length/height (m/cm) in any direction; mass (kg/g); use rulers, scales and measuring vessels to the nearest unit; Compare and order lengths, mass, volume/capacity and record the results using < > and =	**Measures – Week 1** Choose and use appropriate standards of units to estimate and measure , temperature (celsius; Use thermometers to the nearest unit) **SATs Questions and revision – Weeks 2-4** Own planning according to needs of individual class **SATS Week – Week 5-6**	**Consolidation – weeks 1-6** Consolidation of Year 2 objectives depending on needs of the class through: Calculation methods (mental and written) Problem solving and reasoning challenges; real-life context investigations – Using RTP documents

	problems with addition and subtraction: using concrete objects and pictorial representations. Include problems involving numbers, quantities and measures **Assessment: Week 7:** NFER Test – Autumn		Distinguish 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.			
Year 3	**Place Value: Weeks 1-3** Recognise the place value of each digit in a three-digit number; Identify, represent and estimate using different representations; Find 10 or 100 more or less than a given number; Compare and order numbers up to 1000; Read and write numbers in numerals and words up to 1000; Solve number problems and practical problems involving these ideas **Addition/ Subtraction: Weeks 4-6** Add and subtract numbers mentally including: 3 digits and ones, 3 digits and tens, 3 digits and hundreds; Add numbers with up to 3 digits using formal written methods of columnar addition; Estimate the answer to a calculation and use inverse operations to check answers; Solve problems, including missing numbers, using number facts, place value and more complex addition **Place Value/ Assessment: Week 7** Roman Numerals – numbers to 12 NFER Test – Autumn	**Addition/ Subtraction: Weeks 1 – 4** Add and subtract numbers mentally including: 3 digits and ones, 3 digits and tens, 3 digits and hundreds; Subtract numbers with up to 3 digits using formal written methods of columnar subtraction; Estimate the answer to a calculation and use inverse operations to check answers; Solve problems, including missing numbers, using number facts, place value and more complex addition and subtraction **Geometry: Weeks 5-7** Recognise angles as a property of shape or a description of a turn; Identify right angles; Recognise that 2 right angles make a half turn, 3 make three quarters of a turn, and 4 make a complete turn; Identify whether angles are greater than or less than a right angle; Identify horizontal and vertical lines; Identify pairs of perpendicular and parallel lines; Draw 2D shapes and make 3D shapes using modelling material; Recognise 3D shapes in different orientations and describe them	**Multiplication/ Division: Weeks 1-4** Count from 0 in multiples of 4, 8, 50 and 100; Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables; Write and calculate multiplication and division statements for the tables known including 2 digits times 1-digit numbers using mental and formal written methods; Solve problems, including missing numbers involving multiplication and division; Solve problems including positive integer scaling and correspondence problems in which n objects are connected to m objects **Fractions: Weeks 5-6** 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; Recognise and use fractions as numbers, unit and non-unit fractions with small denominators; Recognise, find and write fractions of a discrete set of objects, unit and non-unit fractions with small denominators; Solve problems that involve all the above	**Fractions: Weeks 1-2** Recognise and show, using diagrams, equivalent fractions with small denominators; Compare and order unit fractions, and fractions with the same denominators; Add and subtract fractions with the same denominator within one whole; Solve problems that involve all the above **Measures – Money: Weeks 3-4** Add and subtract amounts of money to give change using £ and p in practical contexts **Measures – Time: Week 5** (Re-cap of Y2 objectives) Telling the time; o'clock, quarter past, half past, quarter to and 5 minute intervals **Assessment: Week 6** NFER tests - Spring	**Calculations: Week 1** Re-visit formal written methods for addition, subtraction, multiplication, division **Statistics: Week 2-3** Interpret and present data using bar charts, pictograms and tables Using information presented in scaled bar charts, pictograms and tables, solve one step and two step questions e.g How many more? How many fewer? **Measure – Time: Weeks 4-5** Tell and write the time from an analogue clock; Tell and write the time from an analogue clock with Roman Numerals I to XII; Tell the 12 hour and 24-hour time; 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, am/pm, morning, afternoon, noon and midnight; Know the number of seconds in a minute; Know the number of days in each month; Know the number of days in a year and leap year; Compare durations of events (time taken by particular events or tasks) **Assessment: Week 6** NFER Tests - Summer	**Measures: Weeks 1-3** Measure, compare, add and subtract lengths (m/cm/mm), mass (kg/g) and volume/capacity (l/ml); Measure the perimeter of simple 2D shapes **Consolidation: Weeks 4-6** Addressing the needs of the class using RTP documents

Year 4	**Place Value; Weeks 1-4 (and week 7)** **Place Value:** Count in multiples of 6, 7, 9, 25 and 1000; Find 1000 more or less than a given number; Recognise the place value of each digit in a 4-digit number; Order and compare numbers beyond 1000; Identify, represent and estimate numbers using different representations; Round any number to the nearest 10, 100 and 1000; Count backwards through zero to negative numbers; Solve number and practical problems will all of the above **Addition/ Subtraction: Weeks 5-6** Add and subtract numbers with up to 4 digits using the formal written method of columnar addition and subtraction where appropriate **Roman Numerals /Assessment: Week 7** 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 NFER Test – Autumn	**Addition/ Subtraction: Weeks 1-2** Estimate and use inverse operations to check answers to a calculation; Solve addition and subtraction two step problems in context, deciding which operations and methods to use and why **Multiplication/ Division: Weeks 3-5** Recall and use multiplication and division facts for multiplication tables up to 12 X 12; Use place value, known and derived facts to multiply and divide mentally, including multiplying by 0 and 1, dividing by 1 **Geometry – Shape: Weeks 6-7** Compare and classify geometric shapes including quadrilaterals and triangles, based on their properties and size; Identify lines of symmetry in 2D shapes presented in different orientations	**Geometry - Angles: Week 1** Identify acute and obtuse angles; Compare and order angles up to 2 right angles by size **Multiplication/ Division: Weeks 2-5** Multiplying together 3 numbers; Recognise and use factor pairs and commutativity in mental calculations; Multiply 2 digit and 3-digit numbers by a one-digit number using formal written layout; Solve problems involving multiplying and adding including using the distributive law to multiply 2-digit numbers by 1 digit; integer scaling problems and correspondence problems such as n objects are connected to m objects **Fractions: Week 6** Re-cap of Year 3 fraction work – fractions of diagrams; Count up and down in hundredths; Recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10	**Fractions: Weeks 1-2** Add and subtract fractions with the same denominator; Recognise and show, using diagrams, families of common equivalent fractions; 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 **Decimals: Weeks 3-4** Recognise and write decimal equivalences of any number of tenths and hundredths; Compare numbers with the same number of decimal places up to two decimal places; Round decimals with one decimal place to the nearest whole number; Recognise and write decimal equivalents to ¼ ½ and ¾; Understand the effect of dividing a one- or two-digit number by 10 or 100; Identifying the value of the digits in the answer as ones, tenths and hundredths **Measure – Money: Week 5** Estimate, compare and calculate different measures, including money in pounds and pence; Solve simple	**Multiplication Tables Check: Week 1** Consolidation of multiplication to 12 x 12 including problem solving **Measures – Time: Weeks 2-4** Read, write and convert time between analogue and digital 12- and 24-hour clocks; Solve problems involving converting hours to minutes, minutes to seconds, years to months, weeks to days; weeks to days **Statistics: Week 5** 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 **Assessment: Week 6** NFER Tests – Summer	**Measures: Weeks 1-3** Converting units of measure; Calculate the perimeter of rectilinear figures in cm and m; Calculate the area of rectilinear shapes by counting squares **Geometry – Position/ direction: Week 4** Describe on a 2D 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 **Consolidation: Weeks 5-6** Addressing the needs of the class using RTP documents

				measure and money problems involving fractions and decimals to two decimal places **Assessment: Week 6** NFER Test - Spring		
Year 5	**Place Value: Weeks 1-3** Read, write, order and compare to 1,000,000; Count forwards/backwards in powers of 10 to 1,000,000; Compare and order numbers to 1,000,000; Rounding any number up to 1,000,000 to nearest 10,100,1000,10000,100000; Counting in negative numbers Solve practical problems with above **Addition/ subtraction: Weeks 4-5** Add and subtract mentally with increasingly larger numbers;Add and subtract whole numbers with more than 4 digits using formal written column methods; Reasoning involving inverse operation, missing numbers, multi- step problems, using rounding to estimate **Place Value – Roman Numerals: Week 6** Read Roman numerals to 1000 (M) and recognise years written in Roman numerals. **Assessment: Week 7:** NFER Test - Autumn	**Multiplication/ Division: Weeks 1-3** Identify multiples and factors, factor pairs and common multiples of 2 numbers; Know and use vocabulary for prime numbers , prime factors and composite numbers; Recall prime numbers to 19, identify prime numbers to 100; Recognise and use square numbers and cube numbers using the notations for squared and cubed; Multiply and divide whole numbers and decimals by 10, 100 and 1000 Reasoning, problem solving **Fractions: Weeks 4-7** Compare and order fractions whose denominators are multiples of the same number; Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths; Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number; Add and subtract fractions with the same denominator and denominators that are multiples of the same	**Multiplication/ Division: Weeks 1-2** Mental strategies for multiplication and division; Multiply 4 digit numbers by 1 or 2 digit numbers using formal written methods; Use long multiplication for 4 digit x 2 digit; Reasoning/ Problem Solving; Divide up to 4 digits by 1 digit using formal written short division; Show remainders in context; Reasoning/ Problem solving **Fractions, Decimals, Percentages: Weeks 3-6** Read and write decimal numbers as fractions; Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents; Read, write, order and compare decimal numbers up to 3 places; Rounding decimals with 2 decimal places to the nearest whole number and 1 decimal place; Recognise the % symbol and understand that percent relates to 'number of parts per 100'; Write percentages as a fraction with denominator 100, and as a decimal; Adding and subtracting of decimals with up to 2 places, including	**Measures: Weeks 1- 5** To measure accurately with a range of equipment (c.m/m g/k.m, ml, L); Convert between units of metric measures e.g km to m, l to ml; Understand and use equivalences for metric units and common imperial units – inches, pounds, pints; Measure and calculate the perimeter of composite rectilinear shapes in cm and m; Calculate and compare the area of rectangles using standard units; Estimate the area of irregular shapes; Estimating volume and capacity; Solve problems involving converting between units of time **Assessment: week 6** NFER Test - Spring	**Calculations: Week 1** Consolidation of formal written methods of four operations **Statistics: Weeks 2-3** Solve comparison, sum and difference problems using information presented in a line graph; Complete, read and interpret information in tables including timetables **Geometry - Shape: Weeks 4-5** Identify 3D shapes from 2D representations including cubes and other cuboids; 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 **Assessment: Week 6** NFER Tests - Summer	**Geometry: Weeks 1-4** Estimate and compare acute, obtuse and reflex angles; Draw given angles and measure them in degrees Find missing angles around a point, whole turn, on a straight line, half a turn and other multiples of 90 degrees; Reading and plotting co-ordinates; Describe, identify and represent the shape following a translation or reflection **Consolidation: Weeks 5-6** Addressing the needs of the class using RTP documents

		number; Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams; calculate a fraction of a quantity, amount and finding the whole	money; Adding decimals to compliments of 1 (Eg 0.8 plus 0.2); 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			
Year 6	**Place Value – Weeks 1-2** 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 **Addition/ Subtraction – Weeks 3-4:** Solve addition and subtraction multi-step problems in contexts deciding which operations and methods to use and why; • Perform mental calculations, including with mixed operations and large numbers; Use estimation to check answers to calculations and determine in context of a problem, an appropriate degree of accuracy **Multiplication/ Division – Weeks 5-6** Multiply multi-digit numbers up to 4 digits by a 2-digit number using the formal written method of long multiplication;Divide by 10, 100, 1000; Divide numbers up to 4 digits by a 2-digit whole number using the formal written method of long division; Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division; Interpret remainders as whole number remainders, fractions or by rounding as appropriate for the context; Solve	**Four Operations – Week 1:** Identify common factors, common multiples and prime numbers; Use their knowledge of the order of operations to carry out calculations involving the four operations **Fractions – Weeks 2-5:** Use common factors to simplify fractions;Use common multiples to express fractions in the same denomination; Compare and order fractions, including fractions >1; Generate and describe linear number sequences (with fractions); Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions; Multiply simple pairs of proper fractions writing the answer in its simplest form; Divide proper fractions by whole numbers **Geometry – Week 6:** Draw 2-D shapes using given dimensions and angles; Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons; 3D shapes and their properties; nets of 3d shapes **Position & Direction – Week 7:** Describe positions on the full	**Decimals – Week 1:** Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places; add and subtract decimals; Multiply 1-digit numbers with up to 2 decimal places by whole numbers **Fractions, decimals, percentages – Weeks 2-3:** Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison; Recall and use equivalences between simple fractions, decimals and percentages including in different contexts **Measurement – Weeks 4-6:** Recognise that shapes with the same areas can have different perimeters and vice versa; Recognise when it is possible to use formulae for area and volume of shapes; Calculate the area of parallelograms and triangles; Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm3 , m3 and	**Ratio – Week 1:** 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 **Statistics – Weeks 2-3** Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius; Interpret and construct pie charts and line graphs and use these to solve problems; Calculate the mean as an average **Geometry – Week 4:** Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons; Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles **Algebra – Weeks 5-6**	**SATS REVISION – Week 1-4:** Own planning according to the needs of the class **SATS week – week 5** **Active Maths – Week 6** Planned active maths sessions according to the needs of the class.	**Own Planning – Weeks 1-6:** Investigations and problem solving activities to include gaps in learning using RTP documents

	problems involving addition, subtraction, multiplication and division. **Week 7 – Assessment** NFER Test - Autumn	co-ordinate grid (all 4 quadrants); Draw and translate simple shapes on the co-ordinate plane and reflect them in the axes	extending to other units (mm3 , km3); Convert between miles and kilometres	Use simple formulae; Generate and describe linear number sequences; Express missing number problems algebraically; Find pairs of numbers that satisfy an equation with two unknowns; Enumerate possibilities of combinations of two variables		

EYFS

EYFS: Nursery Autumn Term

Comparison, counting, cardinality, composition, spatial awareness. shape, pattern, measure.

Skills:

Comparison:

- To match objects.
- To sort by 1 or 2 properties.

Counting and Cardinality

- To accurately and consistently count to 5 verbally.
- To count 3 items accurately using 1:1 correspondence.
- To can subitise 1 & 2 items

Composition

Spatial awareness

- I can understand and use simple language of position that doesn't vary by viewpoint
- (in, on, under, next to).
- I can understand and use language of position that can vary by viewpoint (in front, behind)

Shape

- I can find shapes in the environment.
- I can match/sort shapes.
- I can explore construction with 3D shapes – combining shapes in two dimensions.

Pattern

- To identify and talk about patterns around me.

Measure

- To compare height (taller and shorter)
- To compare length (long and short)

Vocabulary:

- More, less, fewer, same, different
- Set, sort, rule, compare
- Big, small, size, heavier, lighter,
- Inside
- Pattern, spotty, stripy, check, shapes, print

- Copy, continue, repeat
- How many, one, two, three, altogether,
- 1 more than, 1 less than.

Knowledge:
To know how to count 1:1
To understand cardinality
To talk about patterns in the environment
To use and understand positional language.
To use and understand language to compare height and length.
To explore 3D shapes.

EYFS: Nursery Spring Term (Currently under review)

Comparison, counting, cardinality, composition, spatial awareness. shape, pattern, measure.

Skills:
Comparison
Counting
Cardinality
Composition
Spatial awareness
Shape
Pattern
Measure
Vocabulary:

Vocabulary:

Knowledge:

EYFS: Nursery Summer Term (Currently under review)
Comparison, counting, cardinality, composition, spatial awareness. shape, pattern, measure.
Skills: **Comparison** **Counting** **Cardinality** **Composition** **Spatial awareness** **Shape** **Pattern** **Measure** **Vocabulary:**
Vocabulary:
Knowledge:

EYFS: Reception Autumn Term

Comparison, counting, cardinality, composition, spatial awareness. shape, pattern, measure.

Skills:

Comparison

- To compare numbers
- To count objects, actions and sounds.
- *To 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.*

Counting

- *Recite numbers past 5.*
- *Say one number for each item.*

Cardinality

- *Develop fast recognition of up to 3 objects, without having to count them individually.*
- *Know that the last number reached when counting a small set of objects tells you how many there are in total.*
- *Show 'finger numbers' up to 5.*
- Subitise
- Link number symbol and its cardinal value.

Composition

- *Solve real world mathematical problems with numbers up to 5.*
- Understand the 'one more than/one less than' relationship between consecutive numbers.
- Explore the composition of numbers to 10

Spatial awareness

- *Compare quantities using language of: 'more than, fewer then'.*
- *Understand position through words alone – for example "the bag is under the table" with no pointing.*

Shape

- *Talk about and explore 2D shapes and 3D shapes using informal and mathematical language: 'sides', 'corners', 'straight', 'flat', 'round'.*
- *Select shapes appropriately: flat surface for building, a triangular prism for a roof.*
- *Combine shapes to make new ones – an arch, a bigger triangle ect.*
- Compose and decompose shapes so that children recognise a shape can have other shapes within it, just as numbers can.

Pattern

- *Talk about and identify the patterns around them and use informal language like 'pointy', 'spotty', 'blobs, ect*
- *Extend and create ABAB patterns – stick, leaf, stick, leaf.*
- *Notice and correct an error in a repeating pattern.*
- Continue, copy and create repeating patterns.

Measure

Make comparisons between objects relating to size, length, weight and capacity.

Vocabulary:

- More, less, fewer, same, different
- Set, sort, rule, compare
- Big, small, size, heavier, lighter,
- Inside
- Pattern, spotty, stripy, check, shapes, print
- Copy, continue, repeat
- How many, one, two, three, altogether,
- 1 more than, 1 less than.

EYFS: Reception Spring Term

Cardinalty & Counting; Composition; Comparision; Shape; Pattern; Measures

Skills:

Cardinality & Counting

- Introduce zero
- Find 0 to 5
- Subitise 0 to 5
- Find 6,7,8
- Conceptual subitising (6,7,8)
- subitising to 10

Composition

- Represent 0 to 5
- Represent and composition of 6,7,8
- combine 2 groups (6,7,8)
- represent 9 and 10
- Number bonds to 10
- Make arrangements of 10

Comparison

- 1 more; 1 less using 6,7,8
- Compare and order numbers to 10

- 1 more 1 less to 10

Shape

- Recognise and name 3D shapes
- Find 2D shapes within 3D shapes
- 3D shapes in the environment

Pattern

- Make pairs – odd and even
- Double to 8 (find a double)
- Double to 8 (make a double)
- Identify more complex patterns (shape)
- copy and continue patterns (shape)
- Patterns in the environment (shape)

Measure

- Compare mass
- find a balance
- Explore capacity
- Compare capacity
- Explore and compare length and height
- Talk about time
- order and sequence time

Vocabulary:

- More, less, fewer, same, different
- Pairs, odd, even, double
- Heavier/ lighter; balance, length, height
- Before, after
- Sides, corners, straight, flat, round

EYFS: Reception Summer Term

Comparision; Cardinality & Counting; Compostion; Shape; Pattern

Skills:

Comparison

- Add more; How many did I add?
- Take away; How many did I take away?
- Sharing – explore making groups
- Grouping – even and odd sharing

Cardinality &Counting

- Verbal counting beyond 20
- Verbal counting beyond 20 using patterns

Composition

- Build numbers beyond (10-13)
- Build numbers beyond 10 (14-20)
- Build doubles
- Explore mapping and represent maps with models
- Create own maps from familiar places
- Create own maps and plans from story situations

Shape

- Select shapes for a purpose
- Rotate shapes
- Manipulate shapes
- Explain shape arrangements
- Compose shape
- Decompose shapes
- Copy 2-D shape picture
- Find 2-D shapes within 3-D shapes

Pattern

- Continue patterns beyond 10 (10-13)
- Continue patterns beyond 10 (14-20)
- Identify units of repeating patterns
- Create and explore own pattern rules
- Replicate and build scenes and constructions

- Visualise from different positions and describe positions

Vocabulary:
- More, less, fewer, same, different
- Pairs, odd, even, double
- Share, groups of
- Sides, corners, straight, flat, round

Year 1

Year 1 -Autumn Term

Place Value/ Addition and Subtraction/ Measures/ Shape / Position and Direction

Skills:

Place Value – Numbers to 10
- Count to 10 forwards and backwards beginning with 0 or 1 or from any given number
- Count, read and write numerals to 10 in numerals and words
- Given a number, identify one more or one less
- Identify and represent numbers using objects and pictorial representation including a number line equal to, more than, less than, (fewer) most, least
- Use ordinal numbers linked to dates and PE
- Show number bonds to 10 using different representations

Addition/Subtraction
- Represent and use number bonds and related subtraction facts within 10 including use of part-whole models
- Read, write and interpret mathematical statements involving addition, subtraction and equal signs
- Add and subtract one-digit numbers to 10 including 0
- Solve one step problems that involve addition and subtraction using concrete objects and pictorial representation and missing number problems

Place Value – Numbers to 20
- Count to 20 forwards and backwards from any given number
- Count, read and write numbers to 20 in numerals and words
- Given a number identify one more or one less

- Identify and represent numbers using objects and pictorial representation including a number line and use the language of equal to, more than, less than, (fewer) most, least
- To identify tens and ones in numbers to 20

Measures- Length/ height:

- Measure and begin to record lengths and heights using non-standard units of measurement
- Compare, describe and solve practical problems for lengths and heights e.g. long/short, longer/shorter, tall/short, double/half

Geometry – Shape/ Position and Direction

- Recognise and name common 2-D shapes e.g. square, circle and triangles
- Recognise and name common 3-D shapes e.g. Cuboids, cubes, pyramids and spheres
- Describe position, direction and movement including whole, half, quarter and three-quarter turns

Vocabulary:

- equal to, more than, greater than, less than, (fewer) most, least, first, second etc
- numbers from 1-20 in numerals and words
- add, subtract, take away, ,how many more? how many less?
- long/short, longer/shorter, tall/short, double/half
- 2D shape, 3D shape
- whole, half, quarter and three-quarter turns

Knowledge:

- To know numbers to 20 in numerals and words
- To know number bonds to 10
- To use ordinal numbers orally and when writing
- To know that numbers become bigger when adding and smaller when subtracting (within 10)
- Know that height is a type of length
- To know how 2D shapes are different from 3D shapes
- To know the different names for 2D and 3D shapes
- To know how to move through different turns

Year 1 -Spring term

Place Value/ Addition and Subtraction/ Measurement/ Fractions

Skills:

Place Value – Numbers to 20 (Re-cap on Autumn term)

- Count to 20 forwards and backwards from any given number
- Count, read and write numbers to 20 in numerals and words
- Given a number identify one more or one less
- Identify and represent numbers using objects and pictorial representation including a number line and use the language of equal to, more than, less than, (fewer) most, least
- To identify tens and ones in numbers to 20

Addition/ Subtraction to 20:

- Represent and use number bonds and related subtraction facts within 20 including part-whole models
- Read, write and interpret mathematical statements involving addition, subtraction and equal signs
- Add and subtract one-digit numbers to 20 including 0
- Solve one step problems that involve addition and subtraction using concrete objects and pictorial 7=? -9

Place Value – Numbers to 50

- Count to 50 forwards and backwards beginning with 0 or 1 or from any given number
- Count, read and write numerals to 50 in numerals and words
- Given a number, identify one more or one less
- Identify and represent numbers using objects and pictorial representation including a number line and use the language of equal to, more than, less than, (fewer) most, least

Place Value:

- Count in multiples of 2's, 5's and 10's

Measures – Mass and Volume:

- Measure and begin to record mass/weight, capacity and volume Compare, describe and solve practical problems for mass/weight e.g. heavy/light, heavier than/lighter than, capacity and volume e.g. full/empty, more than/less than, half, half full, quarter

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

Place Value numbers to 100:

- Count to 100 forwards and backwards beginning with 0 or 1 or from any given number

- Count, read and write numerals to 100 in numerals and words
- Given a number, identify one more or one less
- Compare and order numbers to 100
- Identify and represent numbers using objects and pictorial representation including a number line and use the language of equal to, more than, less than, (fewer) most, least

Vocabulary (as well as vocabulary from autumn term):

- Numbers to 100 in words
- More than, less than, greater than, fewer than, equal to
- Add, subtract, take away, plus, minus
- . full/empty, more than/less than, half, half full, quarter

Knowledge:

- To know numbers to 100 in numerals and words
- To know number bonds to 20
- To know how to use concrete and pictorial resources to add and subtract to 20
- To know what different symbols mean + - =
- To know how to use concrete and pictorial resources to count in 2s, 5s and 10s
- To know the correct vocabulary for measuring mass and volume

To know that objects need to be split into two to find a half and split into four to find a quarter

Year 1 -Summer Term

Multiplication and Division/ Measures – Time and Money

Skills:

Multiplication/ Division

- Count in multiples of 2's, 5's and 10's
- Solve one step problems involving multiplication and division by calculating the answer using concrete objects, pictorial representations and arrays

Measure – Money:

- Recognise and know the value of different denominations of coins and notes

Measures – Time

- Sequence events in chronological order using language eg before, after, next, first, today, yesterday, tomorrow, morning, afternoon and evening
- Recognise and use language relating to dates including days of the week, weeks, months and years
- Measure and begin to record time e.g. hours, minutes seconds
- Tell the time to the hour and half past the hour and draw hands on a clock face to show these times

Vocabulary:

- Multiply, groups of, pairs of, before, after, forwards, backwards, equal groups, rows of, columns of, altogether, double, sharing
- Coins, pence, pounds, value, notes, money
- Before, after, days of the week, months, hours, minutes, seconds, hour, half hour

Knowledge:

- To know how to use concrete and pictorial resources to count in multiples of 2, 5, 10
- T recognise and know how to make equal groups
- To know how to make arrays
- To know how to double an amount
- To know how to make equal groups by sharing
- To recognise and know different coins and notes
- To know how to count in coins

Year 2

Year 2 -Autumn term

Place Value/ Addition and Subtraction/ Measures ; Money/ Geometry: Shape

Skills:

Place Value – numbers to 100

- Read and write numbers to at least 100 in numerals and words.
- Recognise the place value of each digit in a 2-digit number (tens & ones)
- Identify, represent and estimate numbers using different representations including the number line
- Compare and order numbers from 0 – 100; use < > and = signs.
- Use place value and number facts to solve problems
- Count in steps of 2, 5, 10 from any number forwards and backwards

Addition and Subtraction:

- Recall and use addition & subtraction facts to 20 fluently. Derive and use related facts up to 100.
- Add & subtract numbers using concrete objects, pictorial representations and mentally, including two-digit numbers and ones, two digit numbers and tens, two digit number and two digit number and adding 3 one digit numbers
- Add and subtract 10 from a number
- Show that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.
- Solve problems with addition and subtraction: using concrete objects and pictorial representations. Include problems involving numbers, quantities and measures
- Recognise and use the inverse relationship between addition and subtraction. Use this to check calculations and solve missing number problems
- Recognise that addition can be done in any order but subtraction cannot

Measures – money:

- Recognise and use symbols for pounds and pence (£/p)
- Combine amounts to make a particular value
- Find different combinations of coins that make the same amount of money
- Solve simple problems practically, including addition and subtraction and giving change.

Geometry – shape:

- Identify and describe the properties of 2D shapes, including the number of sides and lines of symmetry

- 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 e.g a circle on a cylinder and a triangle on a pyramid. Compare and sort common 2D and 3D shapes and everyday objects

Vocabulary:

- **Numbers to 100, estimate, number line, more than, less than, equal to, forwards, backwards**
- **Add, plus, altogether, subtract, take away, minus, inverse**
- **Pounds, pence, money, coins, notes, value, change**
- **Names of 2D shapes and 3D shapes, sides, vertex (vertices), symmetry**

Knowledge:

- To know how to read and write numbers to 100 in numerals and words
- To know the difference between the place value of ones and tens
- To know what estimate means
- To know which numbers are greater than, less than and are equal to other numbers by using place value
- To know how many to add on or subtract when counting forwards and backwards in 2s, 5s, 10s
- To know number bonds to 20
- To know how to add and subtract 10 from a number using place value and concrete resources
- To know how to use efficient methods to add and subtract – up to two digit numbers
- To know that addition can be done in any order when adding three 1-digit numbers
- To know the relationship between addition and subtraction – inverse operation
- To know how to write the correct symbol notation for pounds and pence
- To know what these terms mean: 2 D shape, 3 D shape, side, vertex/ vertices, symmetry as well as the correct names for a range of 2D and 3D shapes

Year 2 -Spring Term

Multiplication/Division/ Statistics/ Fractions/ Measures: Time, length, height, mass, volume

Skills:

Multiplication/Division:

- Recall and use multiplication facts for 2, 5 and 10 times tables including recognising odd and even numbers, doubles and halves
- Calculate mathematical statements for 2, 5 and 10's using multiplication and division using x, ÷ and =
- Solve problems using multiplication and division using, materials, arrays, repeated addition and mental methods
- Show that multiplication of two numbers can be done in any order (commutative) but division cannot.

Statistics

- 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.

Fractions:

- Recognise, find, name and write fractions of a length, shape, set of objects or quantity – halves, thirds, quarters and some non unit fractions eg three quarters
- Write simple fractions for example ½ of 6 = 3 Recognise the equivalence of 2 quarters and 1 half
- To count in fractions up to one whole

Measures – Time, Length/ Height, Mass/ Volume:

- Tell and write the time to five minutes, including quarter past/to the hour.
- Draw hands on a clock to show these times
- Know the number of minutes in an hour and the number of hours in a day Compare and sequence intervals of time
- Choose and use appropriate standards of units to estimate and measure length/height (m/cm) in any direction; mass (kg/g), capacity (l/ml).
- Use rulers, scales and measuring vessels to the nearest unit. Compare and order lengths, mass, volume/capacity and record the results using < > and =

Vocabulary:

- **Multiply, lots of, groups of, altogether, divide, share, array**
- **Tally charts, block diagrams, pictograms**
- **Half, thirds, quarters, equivalent, fractions**
- **Hour, minutes, quarter past/to, clock, hands**
- **Length, height, metres, centimetres, mass, grams, kilograms, capacity, volume, mililitres, litres, rulers, scales, measure, greater than , less than, equal to**

Knowledge:

- **To recall facts for x2, x5, x10 times tables**
- **To know what an odd and even number is**
- **To know that doubling is the same as multiplying by 2 and halving is the same as dividing by 2**
- **To know which method to use to solve multiplication and division problems using pictorial and concrete resources**
- **To know that multiplication can be done in any order but division cannot**
- **To know the difference between different types of chart eg a block chart or a pictogram**
- **To know how to record efficiently in tally marks**
- **To know that halves are a whole split into 2 equal parts and the same for thirds (three parts) and quarters (four parts)**
- **To know that two quarters is the same as one half and to know other equivalent fractions for halves and quarters**
- **To be able to count in steps of halves and quarters**
- **To know that each number on an analogue clock is in five minute intervals and that the numbers 3 and 9 represent quarter past and to**
- **To know how many minutes in an hour, hours in a day**
- **To know that length can be recorded in cm/m; mass is recorded in g/kg and volume in ml/l**

Year 2 – Summer Term

Measures – Temperature/ SATS Work

Skills:

- Choose and use appropriate standards of units to estimate and measure temperature (®C)
- Use thermometers to compare temperatures and read thermometers with different scales

SATS Revision:
According to the needs of the class, class teacher to consolidate areas of learning as appropriate

Problem Solving/ Reasoning:
Class teacher to plan cross-curricular problem solving and reasoning activities to explore efficient calculation methods for all operations and mental strategies, including real-life context problem solving for Year 2 areas of learning

Vocabulary:

- **Degrees Celsius, thermometers, hot, warm, cold, difference**

Knowledge:

- Children know that temperature can be measured in degrees Celsius.
- To know thermometers record temperature
- To know the higher/ lower a temperature is, the hotter, colder it is
- To know how to read from different scales

Year 3

Year 3 – Autumn Term
Place Value/ Addition and Subtraction/ Geometry – Shape and Angles/ Roman Numerals
Skills: **Place Value** • Recognise the place value of each digit in a three-digit number • Identify, represent and estimate using different representations • Find 10 or 100 more or less than a given number

• Compare and order numbers up to 1000
• Read and write numbers in numerals and words up to 1000
• Solve number problems and practical problems involving these ideas.
• Count from 0 in multiples of 10, 50 and 100.

Addition and Subtraction

• Add and subtract numbers mentally including: 3 digits and ones, 3 digits and tens, 3 digits and hundreds.
• Number bonds to 10, 20, 100
Add three single digit numbers
• Add and subtract numbers with up to 3 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 numbers, using number facts, place value and more complex addition and subtraction

Roman numerals

• Tell and write the time from an analogue clock with Roman Numerals I to XII

Geometry

• Draw 2D shapes and make 3D shapes using modelling material
• Recognise 3D shapes in different orientations and describe them
• Identify horizontal and vertical lines.
• Identify pairs of perpendicular and parallel lines
• Recognise angles as a property of shape or a description of a turn
• Identify right angles
• Recognise that 2 right angles make a half turn, 3 make three quarters of a turn, and 4 make a complete turn
• Identify whether angles are greater than or less than a right angle

Vocabulary:

- **Add, addition, total, altogether, subtract, minus, take away, less than, more than**
- **Names of 2D shapes and 3D shapes**
- **Horizontal, perpendicular, parallel**
- **Angles, acute, obtuse, right angle**
- **Turn, half, quarter, complete**

Knowledge:

- Place value in numbers up to 1000
- Count in 10, 50, 100s

- Efficient written methods to add and subtract numbers with up to 3 digits
- Roman numerals for numbers to 12
- Know the names of 2D and 3D shapes and how to recognise them in different rientations
- Know the meaning of: acute, obtuse, right angle, turn
- Know how to draw and identify different lines: horizontal, parallel, perpendicular

Year 3 – Spring Term

Multiplication and Division/ Fractions

Skills:

Multiplication/ Division

- Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables.
- Multiply by 10
- Write and calculate multiplication and division statements for the tables known including 2 digits times 1-digit numbers using mental and formal written methods
- Solve problems, including missing numbers involving multiplication and division.

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.
- Recognise and use fractions as numbers, unit and non-unit fractions with small denominators.
- Recognise, find and write fractions of a discrete set of objects, unit and non-unit fractions with small denominators.
- Solve problems involving fractions
- Recognise and show, using diagrams, equivalent fractions with small denominators
- Compare and order unit fractions, and fractions with the same denominators
- Add and subtract fractions with the same denominator within one whole

Measures – Money/Time

- Add and subtract amounts of money to give change using £ and p in practical contexts.
- Telling the time; o'clock, quarter past, half past, quarter to and 5 minute intervals

Vocabulary:

- **Multiply, lots of, groups of, altogether, divide, share, groups of**
- **Fraction, numerator, denominator, tenth, quarter, third, half, whole, unit, non-unit, equivalent, add, subtract**
- **Pounds, pence, change, coin, note, add, subtract**
- **o'clock, quarter past, half past, quarter to**

Knowledge:

- To know multiplication and division facts for the 3, 4 and 8 multiplication tables.
- To know place value of a number when multiplying by 10
- To know that what a tenth is
- To know how to find fractions of amounts, unit and non- unit
- To know that fractions with the same denominator are ordered by the numerator
- To know some fractions are equivalent to others
- To know that fractions with the same denominator can be added and subtracted by the numerator (in the correct order for subtraction)
- To know what the value of different notes and coins are
- To know how to add money and find change using efficient methods
- To know how to tell the time to O'clock, quarter to/past, half past and five minute intervals

Year 3 – Summer Term

Statistics/ Measures – Time, Length, Mass, Volume, Capacity, Perimeter

Skills:

Statistics

- Interpret and present data using bar charts, pictograms and tables.
- Using information presented in scaled bar charts, pictograms and tables, solve one step and two step questions e.g How many more? How many fewer?

Measures

- Tell and write the time from an analogue clock
- Tell the 12 hour and 24-hour time
- Estimate and read time with increasing accuracy to the nearest minute
- Record and compare time in terms of seconds, minutes and hours
- Compare durations of events (time taken by particular events or tasks)

- Measure, compare, add and subtract lengths (m/cm/mm), mass (kg/g) and volume/capacity (l/ml), including finding simple equivalences
- Measure the perimeter of simple 2D shapes.

Vocabulary:

- Tally, bar chart, pictogram, data, axis
- o'clock, am/pm, morning, afternoon, noon and midnight, minutes, hours, years, leap year
- length, mass, (kg/g) and volume/capacity (l/ml)
- length, perimeter

- **Knowledge:**
- Know what a bar chart and pictogram are and how they show data
- Know the number of seconds in a minute
- Know the number of days in each month
- Know the number of days in a year and leap year
- Know how to read from both a 12 hour and 24 hour clock
- Know how to convert simple equivalences e.g cm into m
- To know that perimeter is the measurement around the outside of a shape

Year 4

Year 4 – Autumn Term

Place Value/ Addition and Subtraction/ Multiplication and Division/ Geometry - Shape

Skills:

Place Value:

- Count in multiples of 6, 7, 9, 25 and 1000
- Find 1, 10, 100, 1000 more or less than a given number
- Recognise the place value of each digit in a 4-digit number

- Order and compare numbers beyond 1000
- Identify, represent and estimate numbers up to 10,000 on a numberline
- Round any number to the nearest 10, 100 and 1000
- Count backwards through zero to negative numbers
- Read Roman numerals to 1000 and recognise place value
- Solve number and practical problems will all of the above

Addition/ Subtraction:

- Add and subtract numbers with up to 4 digits using the formal written method 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 context, deciding which operations and methods to use and why.

Vocabulary:

- Multiples
- Place value, order, compare, negative, positive, Roman numerals
- Add, plus, altogether, subtract, minus, inverse

Knowledge:

- To know the multiples of 6, 7, 9, 25 and 1000
- To know how to use place value to find 1, 10, 100, 1000 more or less than a given number
- To know what each column represents in a 4-digit number
- To know the value of numbers up to 10,000
- To know which digit to look at when rounding to the nearest 10, 100 and 1000
- To know Roman numerals to 1000
- To know how to use the column method efficiently for adding and subtracting

Year 4 – Spring Term

Geometry – Angles/ Multiplication and Division/ Fractions/ Decimals/ Measures - Money

Skills:

Geometry – Angles

- Identify acute and obtuse angles

- Compare and order angles up to 2 right angles by size

Multiplication and Division

- Multiplying together 3 numbers
- Recognise and use factor pairs and commutativity in mental calculations
- Multiply 2 digit and 3-digit numbers by a one-digit number using formal written layout
- Multiply and divide by 10 and 100
- Solve problems involving multiplying and adding including using the distributive law to multiply 2-digit numbers by 1 digit
- Divide 2 and 3 digit numbers by 1-digit using formal written method

Fractions

- Re-introduction of fractions following Year 3 objectives depending on the needs of the class
- Count up and down in hundredths
- Recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10
- Recognise and show, using diagrams, families of common equivalent fractions
- Convert mixed numbers to improper fractions
- Add and subtract fractions with the same denominator

Decimals

- Recognise and write decimal equivalents of any number of tenths or hundredths
- Find the effect of dividing a one- or two-digit number by 10 or 100, identifying the value of the digits in the answer as ones, tenths and hundredths
- Compare numbers with the same number of decimal places up to two decimal places.
- Round decimals with one decimal place to the nearest whole number.
- Recognise and write decimal equivalents to ¼ ½ and ¾
- Compare numbers with the same number of decimal places up to two decimal places.
- Round decimals with one decimal place to the nearest whole number
- Recognise and write decimal equivalents to ¼ ½ and ¾
- Solve simple measure and money problems involving fractions and decimals to two decimal places.

Vocabulary:

- Angles, acute, obtuse, right-angle
- Multiply, divide, factors, pairs, multiples
- Fraction, numerator, denominator, tenth, quarter, third, half, whole, unit, non-unit, improper fraction, mixed number
- Decimal, tenth, hundreth, decimal place, round, equivalent

Knowledge:

- To know that an acute angle is less than 90 degrees and an obtuse angle is more than 90 degrees (but less than 180 degrees)
- To know which order to multiply 3 numbers together using knowledge of times tables to 12 x 12
- To know place value of digits when multiplying or dividing by 10 and 100
- To know about fractions from Year 3 objectives
- To know the plave value of tenths and hundreths
- To know what an improper fraction is
- To know what a mixed number is
- To know that when adding and subtracting fractions with the same denominator, the denominator stays the same – only the numerator changes
- To know the place value of decimals with 2 places
- To know how to use place value when multiplying or dividing by 10, 100
- To know decimal equivalents of ¼ ½ and ¾
- To know how to round decimals with one place to the nearest whole number

Year 4 – Summer Term

Measures – Time, units of measurement, area and perimeter/ Statistics/ Geometry – Position and Direction

Skills:

Measures:

- 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.
- Measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m
- Find the area of rectilinear shapes by counting squares
- Convert between different units of measure e.g. km to m

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.

Geometry:

- Describe positions on a 2D grid as 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

Vocabulary:

- 12-hour, 24-hour, analogue, digital, seconds, minutes, hours, days, months, years
- Perimeter, area, rectilinear, centimetres, metres, kilometres
- Discrete, continuous, data, bar chart, time graph, axis
- Coordinates, quadrant, translate, left, right, up, down, horizontal, vertical, plot, polygon

Knowledge:

- To know the difference between analogue and digital time
- T know how many seconds in a minute etc
- To know that perimeter is the measurement around a shape and area is the measurement of the space inside a shape
- To know how to convert between different units of measurement – using place value and multiplying and dividing by 10 and 100
- To know how to draw a bar chart or time graph accurately
- To know how to use the axis on a bar chart/ line graph to solve comparison, sum and difference problems
- To know that when a shape is translated, it moves position but does not change appearance in anyway
- To know how to use a ruler to complete drawings of polygons accurately

Year 5

Year 5 – Autumn Term

Place Value/ Addition and Subtraction/ Multiplication and Division/ Fractions

Skills:

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
- Interpret negative numbers in context
- Count forwards and backwards with positive and negative whole numbers including through zero
- Round any number up to 1,000,000 to the nearest 10, 100,1000, 10,000 and 100,000
- Solve number and practical problems that involve all the above
- Read Roman numerals up to 1,000 (M) and recognise years written in Roman numerals

Addition/ 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)
- 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 with operations and methods to use and why

Multiplication/ Division

- Multiply and divide numbers mentally drawing upon known facts
- Identify multiples and factors
- Find all factor pairs of a number and common factors of 2 numbers
- Know and use vocabulary of prime numbers, prime factors and composite (non-prime) numbers
- Establish whether a number up to 100 is a prime and recall prime numbers up to 19
- Recognise and use square numbers and cube numbers using the notations (*e. g* 3 2 and 4 3)
- Solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes
- Multiply and divide whole numbers by 10, 100 and 1000

Fractions

- Compare and order fractions whose denominators are multiples of the same number.
- Identify, name and write equivalent fractions of a given fraction, represented visually including tenths and hundredths
- Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements >1 as a mixed number
- 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
- Find fractions of amounts and quantities and Find the whole

Vocabulary:

- **Positive, negative**
- **Add, altogether, total, subtract, minus**
- **Numerator, denominator, improper fraction, mixed number**

Knowledge:

- To know the place value of numbers to 1,000,000
- To know how to count in powers of 10 up to 1,000,000
- To know that numbers can be positive or negative
- To know Roman numerals to 1000
- To know how to use efficient mental and written methods for addition and subtraction including efficient knowledge of the column method
- To know how to round to estimate answers first
- To quickly re-call multiplication and division facts

- To know all prime numbers to 19 and know how to use strategies to find prime numbers to 100
- To know how to find square and cube numbers
- To know the place value of digits when multiplying and dividing by 10, 100, 1000
- To know fractions that are equivalent to each other
- To know how to convert an improper fraction into a mixed number

Year 5 – Spring Term

Multiplication and Division/Addition and Subtraction/ Fractions, Decimals, Percentages/ Measures

Skills:

Multiplication and Division

- Multiply and divide numbers mentally drawing upon known facts
- Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for 2-digit numbers. • Divide numbers up to 4 digits by a 1- digit number using the formal written method of short division and interpret remainders appropriately for the context
- solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates

Fractions, Decimals, Percentages

- read and write decimal numbers as fractions
- recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents
- read, write, order and compare numbers with up to three decimal places
- round decimals with two decimal places to the nearest whole number and to one decimal place
- solve problems involving number 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
- 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

Addition/ Subtraction

- Adding and subtracting of decimals with up to 2 places, including money
- Adding decimals to compliments of 1 (Eg 0.8 plus 0.2)

Measures

- To measure accurately with a range of equipment (c.m/m g/k.m, ml, L)

- 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
- 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
- estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
- solve problems involving converting between units of time
- use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling

Vocabulary:

- short multiplication, long multiplication, short division, scale, rates
- decimals, tenths, hundreths, equivalent, decimal place, percent, denominator, numerator
- centimetres, metres, kilometres, millilitres, litres, inches, pounds, pints
- area, perimeter, rectilinear, metres squared, irregular, regular
- seconds, minutes, hours, days, weeks, months, year, calendar
- length, mass, volume, money, pounds, pence

Knowledge:

- To know multiplication and related division facts to 12 x 12
- To know how to use short, multiplication, long multiplication, short division efficiently
- To know decimal and fraction equivalents for ½ ,¼, 1/5, 2/5, 4/5
- To know that we use % symbol and percent relates to the number of parts per 100
- To know how to add and subtract decimal numbers efficiently
- To know how to use a range of measuring equipment – rulers, metre sticks, trundle wheels, measuring jugs, scales
- To know conversions between some units of metric measurements and some common imperial measurements
- To know how to find area and perimeter of composite rectilinear shapes including how to work out missing lengths
- To know how to split irregular shapes when finding the area
- To know conversions between units of time – seconds, minutes, hours, days

Year 5 summer Term

Addition and Subtraction/ Multiplication and Division/Statistics

Skills:

Addition and Subtraction

- 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.

Multiplication and Division

- 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
- multiply and divide numbers mentally drawing upon known facts
- divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context

Statistics

- solve comparison, sum and difference problems using information presented in a line graph
- complete, read and interpret information in tables, including timetables
- identify 3-D shapes, including cubes and other cuboids, from 2-D representations
- 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
- know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles
- draw given angles, and measure them in degrees (o)
- identify: angles at a point and one whole turn (total 360o); angles at a point on a straight line and ½ a turn (total 180o); other multiples of 90o
- 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.

Vocabulary:

- Vocabulary related to all four operations (from previous terms)
- Compare, difference, line graph, axis

Knowledge:

- To know how to efficiently use written methods for four operations
- To know how to interpret remainders appropriately for the context

- To know the names of common 2D and 3D shapes
- To know that angles are measured in degrees
- To know what acute, obtuse, reflex angles are
- To know that angles in one whole turn (total 360o); angles at a point on a straight line and ½ a turn (total 180o)
- To know how to reflect and translate a shape

Year 6

Year 6 – Autumn Term

Place Value/ Addition, Subtraction, Multiplication, Division/ Fractions/Geometry – Shape/ Position and Direction

Skills:

Place Value

- read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
- use negative numbers in context, and calculate intervals across zero
- round any whole number to a required degree of accuracy
- solve number and practical problems that involve all of the above

Addition, Subtraction, Multiplication, Division

- 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
- 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
- identify common factors, common multiples and prime numbers
- use their knowledge of the order of operations to carry out calculations involving the four operations
- Multiplication and Division of whole and decimal numbers by 10, 100, 1000

Fractions

- Find fractions of shapes and amounts

- use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- compare and order fractions, including fractions > 1
- add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
- multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, 4 1 × 2 1 = 8 1]

Geometry-Shape

- compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
- recognise, describe and build simple 3-D shapes, including making nets

Position and Direction

- describe positions on the full coordinate grid (all four quadrants)
- draw and translate simple shapes on the coordinate plane, and reflect them in the axis

Vocabulary:

- short multiplication, long multiplication, short division, long division
- Factors, multiples, common factors, prime numbers, composite numbers
- Simplify, denominator, mixed number, equivalent fractions, simplest form
- Name of quadrilaterals, triangles, regular polygons
- 3D shapes, nets
- Co-ordinates, quadrants, translate, reflect, axis

Knowledge:

- To know the value of each digit in numbers up to 10 000 000
- To know how to use place value to round numbers accurately
- To know how to efficiently us written methods for addition, subtraction, multiplication and division
- To know how to interpret remainders in context for division
- To know common factors of a number, common multiples
- To know how to find prime numbers to 100
- To know how to find fractions of amounts
- To know how to simplify a fraction using common factors
- To know how to add and subtract fractions with different denominators
- To know the properties of geometric shapes
- To know how to translate and reflect a shape in four quadrants

Year 6 – Spring Term

Fractions, Decimals, Percentages; Geometry/Shape; Ratio; Statistics; Algebra

Skills:

Decimals

- Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 decimal places
- add and subtract decimals
- Multiply 1-digit numbers with up to 2 decimal places by whole numbers

Fractions, decimals, percentages

- Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison
- Recall and use equivalences between simple fractions, decimals and percentages including in different contexts

Measurement - Shape

- Recognise that shapes with the same areas can have different perimeters and vice versa
- Recognise when it is possible to use formulae for area and volume of shapes
- Calculate the area of parallelograms and triangles
- Calculate, estimate and compare volume of cubes and cuboids using standard units, including cm3 , m3 and extending to other units (mm3 , km3)
- Convert between miles and kilometres

Ratio

- 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

Statistics

- Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
- Interpret and construct pie charts and line graphs and use these to solve problems
- Calculate the mean as an average

Geometry – Angles

- Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals and regular polygons
- Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles

Algebra

Use simple formulae; Generate and describe linear number sequences

Express missing number problems algebraically

Find pairs of numbers that satisfy an equation with two unknowns
Enumerate possibilities of combinations of two variables

Vocabulary:

- Decimal place; percentage; perimeter; area; formulae; parallelograms; miles; kilometres; integer; scale factor; radius; diameter; circumference; quadrilaterals; polygons; linear; algebra

Knowledge:

- Recall and use equivalences between simple fractions, decimals and percentages
- To know when and how to use formulae for area and volume of shapes
- To know how to calculate the area of parallelograms and triangles
- To know how t convert between miles and km
- To know radius, diameter and circumference and know that the diameter is twice the radius
- To know how to calculate the mean

Year 6 – Summer Term

SATS Revision

Skills:

SATS Revision

- Teaching to address the needs of the class, re-visiting areas where there are gaps – using RTP documents.

Investigation work

- Post SATS – Investigation work to be carried out – real life problems/ reasoning activities using RTP documents to address the needs of the class

Vocabulary:

- To address the needs of the class

Knowledge:

- Gaps in knowledge addressing the needs of the class