Marden Vale CE Primary Academy
'With God, all things are possible'
Matthew 19:26

Maths Intent

Maths at Marden Vale - Children at Marden Vale CE Academy will:

- *Become fluent in arithmetic and number knowledge.*
- *Recall and apply knowledge rapidly and accurately*
- *Experience varied and fluent practice and consolidation*
- *Develop reasoning and problem-solving skills*
- *Understand mathematical language and use this to reason*
- *Apply their mathematical knowledge and understanding to solve routine and non-routine problems*

We want them to: *'Love Maths, Talk Maths, Use Maths'*

Curriculum Drivers

	In all subjects…	In Maths, this looks like…
Aspiration	We aspire to broaden our children's horizons and expand their knowledge of the world of work whilst nurturing and encouraging the self-belief and ambition they'll need to accomplish their goals.	Children wanting to achieve their best and to become competent mathematicians who are confident in maths.
Language and communication	We aspire to teach the children communication skills so that become confident communicators who are equipped to succeed. We provide opportunities for children do develop a rich and varied vocabulary, read to inform learning and listen to others and respond appropriately.	Children learning, understanding and using mathematic vocabulary. Communicating accurately and effectively in written maths. Developing skills of debate to challenge their own and others thinking.
Community	We aspire to ensure that our curriculum enables all children to develop the emotional understanding necessary to experience positive relationships, to develop a sense of justice and an ability to empathise, which in turn leads to respect for themselves and others.	We provide opportunity to develop maths skills in the real-world context. Our aim is to develop links with the local community, as well as developing an understanding of how maths impacts upon communities both locally, nationally and world-wide.
Creativity	We aspire to inspire curiosity and fuel imagination in our pupils whilst empowering them to delve into the unknown and embrace the uniqueness of their ideas.	Mathematical working requires and develops creativity and curiosity, which transfer to other aspects of life. Frequently, in mathematical problem-solving, a child does not immediately know how to approach a problem; it takes creativity and courage to explore different approaches before deciding how to proceed. Planning and modelling tasks within mathematics develops children's ability to turn ideas into action. Our staff think creatively about the mathematical experiences that they offer children and this can open up opportunities for our children to be creative.

Learning knowledge is not an end point in itself, it is a springboard to learning more knowledge. Each unit in our overview is underpinned by rich, substantive knowledge and ambitious vocabulary, whilst also ensuring children are developing their disciplinary knowledge. Each unit of work is planned carefully to ensure concepts are taught in optimal order to support children's understanding. As well as developing a breadth of subject knowledge, we want our children to develop subject specific skills. In addition to substantive and disciplinary knowledge, children will develop their experiential knowledge through carefully planned enrichment activities.

DELIVERY VEHICLES: Power Maths WRM Edition and Mastering Number Programme which is supplemented by White Rose Maths

Maths Long Term Plan (Power Maths)

supplement with White Rose Maths and NCETM as required – Ready to Progress units (highlighted in yellow

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception	Unit 1 Numbers to 5 Unit 2 Comparing groups within 5 Unit 3 Shape 3D and 2D Unit 4 Change within 5 Unit 5 Number bonds within 5 Unit 6 Space		Unit 7 - Numbers to 10 Unit 8 - Comparing numbers within 10 Unit 9 - Addition to 10 Unit 10 – Measure (length, height and weight) Unit 11 – Number bonds to 10 Unit 12 – Subtraction Unit 13 – Exploring patterns		Unit 14 – Counting on and back Unit 15 - Numbers to 20 Unit 16 - Numerical patterns Unit 17 – Shape (composing and decomposing shape) Unit 18 – Measure (volume and capacity) Unit 19 – Sorting (optional) Unit 20 – Time (optional)	
Year 1	Unit 1: Numbers to 10 Unit 2: Part-whole within 10 Unit 3: Addition within 10 Unit 4: Subtraction within 10 Unit 5: 2D and 3D shapes		Unit 6: Numbers to 20 Unit 7: Addition and subtraction within 20 Unit 8: Numbers to 50 Unit 9: Intro length and height Unit 10: Intro mass and capacity		Unit 11: Multiplication and division Unit 12: Halves and quarters Unit 13: Position and direction* Unit 14: Numbers to 100 Unit 15: Money Unit 16: Time*	
Year 2	Unit 1: Numbers to 100 Unit 2: Addition and subtraction 1 Unit 3: Addition and subtraction 2 Unit 4: Properties of shape		Unit 5: Money* Unit 6: Multiplication and division 1 Unit 7: Multiplication and division 2 Unit 8: Length and height Unit 9: Mass, capacity and temperature*		Unit 10: Fractions Unit 11: Time* Unit 12: Problem solving & efficient methods Unit 13: Position and direction* Unit 14: Statistics	
Year 3	Unit 1: Place value within 1,000 Unit 2: Addition and subtraction 1 Unit 3: Addition and subtraction 2 Unit 4: Multiplication and division 1 Unit 5: Multiplication and division 2		Unit 6: Multiplication and division 3 Unit 7: Length and perimeter Unit 8: Fractions 1 Unit 9: Mass Unit 10: Capacity		Unit 11: Fractions 2 Unit 12: Money Unit 13: Time* Unit 14: Angles and properties of shape Unit 15: Statistics	

Year 4	Unit 1: Place value – 4 digit numbers 1 Unit 2: Place value – 4 digit numbers 2 Unit 3: Addition and subtraction Unit 4: Area Unit 5: Multiplication and division 1	Unit 6: Multiplication and division 2 Unit 7: Length and Perimeter Unit 8: Fractions 1 Unit 9: Fractions 2 Unit 10: Decimals 1	Unit 11: Decimals 2 Unit 12: Money Unit 13: Time* Unit 14: Geometry – angles and 2D shapes Unit 15: Statistics Unit 16: Position and direction
Year 5	Unit 1: Place value within 1,000,000 1 Unit 2: Place value within 1,000,000 2 Unit 3: Addition and subtraction Unit 4: Multiplication and division 1 Unit 5: Fractions 1 Unit 6: Fractions 2	Unit 7: Multiplication and division 2 Unit 8: Fractions 3 Unit 9: Decimals and percentages Unit 10: Measure – perimeter and area Unit 11: Graphs and tables	Unit 12: Geometry – properties of shape Unit 13: Geometry – position and direction Unit 14: Decimals Unit 15: Negative numbers Unit 16: Measure – converting units Unit 17: Measure – volume
Year 6	Unit 1: Place value within 10,000,000 Unit 2: Four operations 1 Unit 3: Four operations 2 Unit 4: Fractions 1 Unit 5: Fractions 2 Unit 6: imperial and metric	Unit 7: Ratio and proportion Unit 8: Algebra Unit 9 Decimals Unit 10: Percentages Unit 11: Measurement – perimeter, area and volume	Unit 12: Statistics* Unit 13: Geometry – properties of shape Unit 14: Position and direction Unit 15: Problem solving CONSOLIDATION and transition

MATHS LONG TERM PLANNING – EYFS

Number • Recognise some numerals of personal significance. • Recognises numerals 1 to 5. • Counts up to three or four objects by saying one number name for each item. • Counts actions or objects which cannot be moved. • Counts objects to 10, and beginning to count beyond 10. • Counts out up to six objects from a larger group. • Selects the correct numeral to represent 1 to 5, then 1 to 10 objects. • Counts an irregular arrangement of up to ten objects. • Estimates how many objects they can see and checks by counting them. • Uses the language of 'more' and 'fewer' to compare two sets of objects. • Finds the total number of items in two groups by counting all of them. • Says the number that is one more than a given number. • Finds one more or one less from a group of up to five objects, then ten objects.	• In practical activities and discussion, beginning to use the vocabulary involved in adding and subtracting. • Records, using marks that they can interpret and explain. • Begins to identify own mathematical problems based on own interests and fascinations. **Shape, space and measures** • Beginning to use mathematical names for 'solid' 3D shapes and 'flat' 2-D shapes, and mathematical terms to describe shapes. • Selects a particular named shape. • Can describe their relative position such as 'behind' or 'next to'. • Orders two or three items by length or height. • Orders two items by weight or capacity. • Uses familiar objects and common shapes to create and recreate patterns and build models. • Uses everyday language related to time. • Beginning to use everyday language related to money. • Orders and sequences familiar events. • Measures short periods of time in simple ways.

MATHS LONG TERM PLANNING – YEAR 1

Autumn Term	Spring Term	Summer Term
• Place Value (within 10) • Addition and Subtraction • Shape • Place Value (within 20)	• Addition and Subtraction • Place Value (within 50) • Measure • Multiplication	• Multiplication and Division • Fractions • Position and Direction • Place Value (within 100) • Money • Time

Number: Place Value	Number: Addition and Subtraction	Measure
• Count to ten, forwards and backwards, beginning with 0 or 1, or from any given number. • Count, read and write numbers to 10 in numerals and words. • Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least. • Given a number, identify one more or one less. • Count in multiples of twos. • Count, read and write numbers from 1 to 20 in numerals and words. • Count in multiples of twos and fives • Count to 40 forwards and backwards, beginning with 0 or 1, or from any number. • Identify and represent numbers using objects and pictorial representations.	• Represent and use number bonds and related subtraction facts (within 10) • Add and subtract one digit numbers (to 10), including zero. • Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs. • Represent and use number bonds and related subtraction facts within 20. • Add and subtract one digit and two digit numbers to 20, including zero. • Solve one step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as 7= ? – 9	• Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times. • Recognise and use language relating to dates, including days of the week, weeks, months and years. • Compare, describe and solve practical problems for time [for example, quicker, slower, earlier, later] and measure and begin to record time (hours, minutes, seconds) • Compare, describe and solve practical problems for: lengths and heights for example, long/short, longer/shorter, tall/short, double/half • Measure and begin to record lengths and heights. • Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening. • Recognise and know the value of different denominations of coins and notes. • Compare, describe and solve practical problems for mass/weight [for example, heavy/light, heavier than, lighter than]; capacity and volume [for example, full/empty, more than, less than, half, half full, quarter] • Measure and begin to record mass/weight, capacity and volume.

Geometry: Shape	**Number: Multiplication and Division**	**Number: Fractions**
• Recognise and name common 2D shapes, including rectangles, triangles, squares, circles • Recognise and name common 3D shapes, cuboids, pyramids and spheres. • Describe position, direction and movement, including whole, half, quarter and three quarter turns	• Count in multiples of twos (forwards and backwards) • Count in multiples of fives (forwards and backwards) • Count in multiples of tens (forwards and backwards) • Solve one step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	• 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.

MATHS LONG TERM PLANNING – YEAR 2

Autumn Term	Spring Term	Summer Term
• Place Value • Addition and Subtraction • Money • Multiplication and Division	• Multiplication and Division • Shape • Fractions • Statistics	• Fractions • Position and Direction • Money • Time • Multiplication and Division

Number – place value	**Number – addition and subtraction**	**Number – fractions**
• Count in steps of 2, 3 and 5 from 0 and in tens from any number, forward and backward. • Recognise the place value of each digit in a two digit number (tens, ones) • Identify, represent and estimate numbers to 100 using different representations including the number line. • Compare and order numbers from 0 up to 100; use <, > and = signs. • Read and write numbers to at least 100 in numerals and words. • Use place value and number facts to solve problems.	• Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100. • Show that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot. • Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two digit number and ones; a two digit number and tens; two two digit numbers; adding three one digit numbers. • Recognise and use the inverse relationship • Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods.	• Recognise, find, name and write fractions $1/3$, $1/4$, $2/4$ and $3/4$ of a length, shape, set of objects or quantity. • Write simple fractions for example, ½ of 6 = 3 • Recognise the equivalence of $2/4$ and $1/2$.

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<td><u>Multiplication and Division</u>
Recall and use multiplication and division facts for the 2, 5 and 10 times tables, including recognising odd and even numbers.
Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) sign.
Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.
Show that the multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot.</td>
<td><u>Statistics</u>
Interpret and construct simple pictograms, tally charts, block diagrams and simple tables.
Ask+ 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
<u>Geometry- properties of shape</u>
Identify and describe the properties of 2D shapes, including the number of sides and line symmetry in a vertical line.
Identify and describe the properties of 3D shapes, including the number of edges, vertices and faces.
Compare and sort common 2D and 3D shapes and everyday objects.
Order and arrange combinations of mathematical objects in patterns and sequences.
Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)</td>
<td><u>Measurement</u>
Choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) and mass (kg/g) to the nearest appropriate unit, using rulers and scales.
Compare and order length and mass and record the results using >, < and =.
Recognise and use symbols of pounds (£) and pence (p); combine amounts to make a particular value.
Find different combinations of coins that equal the same amounts of money.
Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.
Tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times.
Know the number of minutes in an hour and the number of hours in a day.
Compare and sequence intervals of time.
Choose and use appropriate standard units to estimate and measure capacity (litres/ml) and temperature (oC) to the nearest appropriate unit, using thermometers and measuring vessels.
Compare and order volume/capacity and record the results using >, < and =.</td>
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MATHS LONG TERM PLANNING – YEAR 3

Autumn Term	Spring Term	Summer Term
• Place Value • Addition and Subtraction • Multiplication and Division	• Multiplication and Division • Addition and Subtraction • Money • Statistics • Fractions	• Fractions • Time • Measure • Shape • Position and Direction

Number – place value	**Number – addition and subtraction**	**Number – multiplication and division**
• Identify, represent and estimate numbers using different representations. • Find 10 or 100 more or less than a given number; recognise the place value of each digit in a three digit number (hundreds, tens, ones). • Compare and order numbers up to 1000 • Read and write numbers up to 1000 in numerals and in words. • Solve number problems and practical problems involving these ideas. • Count from 0 in multiples of 50 and 100	• Add and subtract numbers mentally, including: a three-digit number and ones; a three-digit number and tens; a three digit number and hundreds. • Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction. • Estimate the answer to a calculation and use inverse operations to check answers. • Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. • Add and subtract amounts of money to give change, using both £ and p in practical contexts.	• Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables. • Calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (x), division (÷) and equals (=) signs. • Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in context. • Show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot. • Solve problems, including missing number problems, involving multiplication and division. • Write and calculate mathematical statements for multiplication and division using the multiplication tables they know.

Measurement	Number – fractions	Geometry
• Measure, compare, add and subtract: lengths (m/cm/mm). • Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction. • Measure the perimeter of simple 2D shapes. • Tell and write the time from an analogue clock, including using Roman numerals and 12-hour and 24-hour clocks. • Estimate and read time with increasing accuracy to the nearest minute. • Record and compare time in terms of seconds, minutes and hours. • Use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and midnight. • Know the number of seconds in a minute and the number of days in each month, year and leap year. • Compare durations of events (for example to calculate the time taken by particular events or tasks). • Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml).	• Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. • Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators. • 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 show, using diagrams, equivalent fractions with small denominators. • Add and subtract fractions with the same denominator within one whole. • Compare and order unit fractions, and fractions with the same denominators.	• Recognise angles as a property of shape or a description of a turn. • Identify right angles, recognise that two right angles make a half-term, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle. • Identify horizontal and vertical lines and pairs of perpendicular and parallel lines. • Draw 2-D shapes and make 3-D shapes using modelling materials. • Recognise 3-D shapes in different orientations and describe them. **Statistics** • Interpret and present data using bar charts, pictograms and tables. • Solve one-step and two-step questions (for example, 'How many more?' and 'How many fewer?') using information presented in scaled bar charts and pictograms and tables.

MATHS LONG TERM PLANNING – YEAR 4

Autumn Term	Spring Term	Summer Term
• Place Value • Addition and Subtraction • Multiplication and Division • Measure	• Multiplication and Division • Area • Fractions • Decimals	• Decimals • Time • Measure • Shape • Statistics • Position and Direction

Number – place value	**Number- addition and subtraction**	**Number – multiplication and division**
• Count in multiples of 6, 7, 9. 25 and 1000. • Find 1000 more or less than a given number. • Count backwards through zero to include negative numbers. • Recognise the place value of each digit in a four digit number (thousands, hundreds, tens and ones) • Order and compare numbers beyond 1000. • Identify, represent and estimate numbers using different representations. • Round any number to the nearest 10, 100 or 1000. • Solve number and practical problems that involve all of the above and with increasingly large positive numbers. • Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the	• Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate. • Estimate and use inverse operations to check answers to a calculation. • Solve addition and subtraction two step problems in context, deciding which operations and methods to use and why.	• 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; multiplying together three numbers. • Recognise and use factor pairs and commutativity in mental calculations. • Multiply two digit and three digit numbers by a one digit number using formal written layout. • Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Fractions	**Time**	**Decimals**
• Recognise and show, using diagrams, families of common equivalent fractions. • Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten. • 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. • Add and subtract fractions with the same denominator.	• Convert between different units of measure • Read, write & convert time between analogue and digital 12 and 14 hour clocks. • Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days	• Recognise and write decimal equivalents of any number of tenths or hundredths. • Recognise and write decimal equivalents to ¼, ½, ¾ • 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 • Round decimals with one decimal place to the nearest whole number. • Compare numbers with the same number of decimal places up to two decimal places.

Measurement	**Geometry**	**Statistics**
• Solve simple measure and money problems involving fractions and decimals to two decimal places. • Estimate, compare and calculate different measures, including money in pounds and pence. • Find the area of rectilinear shapes by counting squares. • Convert between different units of measure eg kilometre to metre. • Measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m	• Identify acute and obtuse angles and compare and order angles up to two right angles by size. • Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes. • Identify lines of symmetry in 2D shapes presented in different orientations. • Complete a simple symmetric figure with respect to a specific line of symmetry. • 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.	• 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.

MATHS LONG TERM PLANNING – YEAR 5

Autumn Term	Spring Term	Summer Term
• Place Value • Addition and Subtraction • Multiplication and Division • Area and Perimeter	• Multiplication and Division • Fractions and Percentages • Decimals • Statistics	• Decimals • Measure • Shape • Position and Direction

Number – place value	**Number- addition and subtraction**	**Number – multiplication and division**
• Read, write, order and compare numbers to at least 1000000 and determine the value of each digit. • Count forwards or backwards in steps of powers of 10 for any given number up to 1000000. • Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers including through zero. • Round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000 • Solve number problems and practical problems that involve all of the above. • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	• Add and subtract numbers mentally with increasingly large numbers. • Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. • Solve addition and subtraction multi-step problems in contexts deciding which operations and methods to use and why.	• Multiply and divide numbers mentally drawing upon known facts. • Multiply and divide whole numbers by 10, 100 and 1000. • Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for 2 digit numbers. • Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context. • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. • Recognise and use square numbers and cube numbers and the notation for squared (2) and cubed (3) • Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes. • Solve problems involving addition and subtraction, multiplication and division and a combination of these, including understanding the use of the equals sign.

Number: Fractions	Number: Decimals	Number: Percentages
• 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. • Read and write decimal numbers as fractions • Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	• Read, write, order and compare numbers with up to three decimal places. • Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents. • Round decimals with two decimal places to the nearest whole number and to one decimal place. • Solve problems involving number up to three decimal places. • Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.	• 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 , , , , and those fractions with a denominator of a multiple of 10 or 25. **Number- Prime Numbers** • Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. • Establish whether a number up to 100 is prime and recall prime numbers up to 19

Statistics	Geometry	Measurement
• Solve comparison, sum and difference problems using information presented in a line graph. • Complete, read and interpret information in tables including timetables.	• Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. • Draw given angles, and measure them in degrees • Identify: angles at a point and one whole turn (total 360o), angles at a point on a straight line and ½ a turn (total 180o) other multiples of 90o • Geometry- position and direction • Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed. • Identify 3D shapes, including cubes and other cuboids, from 2D 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.	• Convert between different units of metric measure (for example, km and m; cm and m; cm and mm; g and kg; l and ml) • Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints. • Solve problems involving converting between units of time. • Measure and calculate the perimeter of composite rectilinear shapes in cm and m. • Calculate and compare the area of rectangles (including squares), and including using standard units, cm2,m2 estimate the area of irregular shapes. • Estimate volume [for example using 1cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]

MATHS LONG TERM PLANNING – YEAR 6

Autumn Term	Spring Term	Summer Term
• Place Value • Four operations • Position and Direction • Fractions	• Decimals • Percentages • Algebra • Measure • Ratio	• Statistics • Shape

Number: Place Value	**Number- addition subtraction, multiplication + division**	**Fractions**
• 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. • Use negative numbers in context, and calculate intervals across zero. • Solve number and practical problems that involve all of the above.	• Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why. • Multiply multi-digit number up to 4 digits by a 2 digit number using the formal written method of long multiplication. • Divide numbers up to 4 digits by a 2 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 2 digit number using the formal written method of short division, interpreting remainders according to context. • Perform mental calculations, including with mixed operations and large numbers. • Identify common factors, common multiples and prime numbers. • Use their knowledge of the order of operations to carry out calculations involving the four operations. • Solve problems involving addition, subtraction, multiplication and division. • Use estimation to check answers to calculations and determine in the context of a problem	• 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 Associate a fraction with division and calculate decimal fraction equivalents, for a simple fraction • Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

Number: Decimals	Number: Percentages	Number: Algebra
• Identify the value of each digit in numbers given to three decimal places. • Multiply numbers by 10, 100 and 1000 giving answers up to 3dp. • Multiply one digit numbers with up to 2dp by whole numbers. • Use written division methods in cases where the answer has up to two decimal places. • Solve problems which require answers to be rounded to specified degrees of accuracy.	• 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 FDP including in different contexts.	• 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.

Measurement	Number: Algebra	Geometry and Statistics
• Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate. • Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3dp. • Convert between miles and kilometres. • 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 •	• 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.	• 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. • Draw 2D 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. • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. • Describe positions on the full coordinate grid (all four quadrants). • Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.