Overview of the Marish Academy Trust Maths Curriculum

In teaching children Mathematics, our intent is that they become skilled mathematicians, numerate, thoroughly conversant with the basics of measure, geometry and statistics and able to problem solve in the real world. Moreover, we aim to instil a sense of awe and wonder, as each child discovers the pattern and predictability of mathematical understanding, which will enable many of our pupils to leave our schools with a life-long enthusiasm for Maths.

In EYFS in our trust schools children develop mathematical skills and understanding through exploration, play and adult directed teaching. The curriculum in EYFS is based upon Early learning Goals 11 and 12, Number and Shape, Space and Measure and the guidance provided in the Early Years and Foundation Stage Profile handbook as outlined in the extract below:

' Mathematics involves providing children with opportunities to:

• practise and improve their skills in counting numbers, calculating simple addition and subtraction problems

• describe shapes, spaces, and measures

ELG 11 Numbers:

• Children count reliably with numbers from 1 to 20, place them in order and say which number is one more or one less than a given number

• Using quantities and objects, they add and subtract 2 single-digit numbers and count on or back to find the answer

• They solve problems, including doubling, halving and sharing

ELG 12 Shape, space and measures:

• Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems

• They recognise, create and describe patterns

• They explore characteristics of everyday objects and shapes and use mathematical language to describe them'

Transition from EYFS to KS1

At the end of Reception we move on to transition work with the vast majority of children to consolidate their skills and prepare them for the Maths Curriculum in year 1 and beyond, which is based upon the revised national curriculum.

Mathematics Curriculum Design and Coverage in Year 1-6 at Marish Academy Trust

Our Mathematics Curriculum Design is divided into Bands of work and learning for each year group. Within each band are several strands of Mathematics learning. **In KS1 these are:**

Number – Number and place value

Number – Addition and subtraction

Number – Multiplication and division

Number – Fractions

Measurement

Geometry – Properties of shapes

Geometry – Position and direction

In Year 2, a further strand, *Statistics,* is added. From year 4 the strands are slightly reorganised as shown below:

Number – Number and place value

Number – part 1 four operations

Number – part 2 four operations

Number – Fractions part 1

Number- Fractions part 2- including decimals

Measurement

Geometry – Properties of shapes, position and direction

Statistics

This diversification of strands continues in year 5, as shown below:

Number – Number and place value

Number – Addition and subtraction,

Number - Multiplication and division part 1

Number - Multiplication and division part 2

Number – Fractions, decimals and percentages part 1

Number – Fractions, decimals and percentages part 2

Measurement

Geometry – Properties of shapes, position and direction

Statistics

Finally in Year 6 more advanced topics of algebra and ratio and proportion are introduced as separate strands in preparation for KS3.

The progression for each of these strands is shown on the following pages.

The entirety of the Maths curriculum for each Band is outlined in the separate Year Group Band coverage documents for Mathematics.

Bands are subdivided into steps which are taught over the course of the year and are not necessarily hierarchical.

The order in which steps are taught depends on the needs of the children and may change over time.

The curriculum described here, is the minimum entitlement for each child in a Trust school.

Year 7 Bands are shown for information and extension purposes.

Maths is also taught across and beyond the core curriculum and through rich extension opportunities.

Progression of Number and Place Value Strand- Mathematics Curriculum Marish Academy Trust 2019

Number and Place value	Step B	Step B+	Step W	Step W+	Step S	Step S+
Year 1	I can represent a number using objects, pictures and a number line *Autumn term target*	I can count to and across 100, forwards and backwards beginning from 0 or 1 or any given number. *Autumn term target*	Given a number, I can identify one more, and one less *Autumn term target*	I can read and write numbers from 1-20 in numerals and words. *Spring term target*	I can use the language: Equal to, more than, less than, most, least *Spring term target*	I can read and write numbers to 100 and count in multiples of 2s, 5s and 10s *Spring term target*
Year 2	I can compare and order numbers from 0 up to 10 and recognise the place value of each digit in a two-digit number (tens, ones) *Autumn term target*	I can count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward *Autumn term target*	I can identify, represent and estimate numbers using different representations, including the number line *Autumn term target*	I can use <, > and = signs *Spring term target*	I read and write numbers to at least 100 in numerals and in words *Spring term target*	I use place value and number facts to solve problems. *Spring term target*
Year 3	I can recognise the place value of each digit in a three-digit number (hundreds, tens, ones) and can compare and order numbers up to 1000 *autumn term target*	I can find 10 or 100 more or less than a given number *autumn term target*	I can count from 0 in multiples of 4, 8, 50 and 100. *spring term target*	I can identify, represent and estimate numbers using different representations *spring term target*	I read and write numbers up to 1000 in numerals and in words *autumn term target*	I can solve number problems and practical problems involving these ideas. *spring term target*
Year 4	I recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones) *Spring term target*	I order and compare numbers beyond 1000, including rounding any number to the nearest 10, 100 or 1000 *Autumn term target*	I can count in multiples of 6, 7, 9, 25 and 1000 and find 1000 more or less than a given number *Spring term target*	I can identify, represent and estimate numbers using different representations and count backwards through zero to include negative numbers *Spring term target*	I can solve number and practical problems that involve all of the above and with increasingly large positive numbers *Summer term target*	I 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. *Spring term target*
Year 5	I can read, write, order and compare numbers to at least 1 000 000 and am developing understanding with numbers up to 10,000,000 and can determine the value of each digit. *Autumn term target*	I can count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 *Spring term targets*	I can interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero *Spring term targets*	I can round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 *Autumn term target*	I can solve number problems and practical problems that involve all of the aside. *Summer term targets*	I can read Roman numerals to 1000 (M) and recognise years written in Roman numerals. *Spring term targets*
Year 6	I can read, write, order and compare numbers up to 10 000 000	I can determine the value of each digit in numbers up to 10 000 000	I can round any whole number to a required degree of accuracy	I can use negative numbers in context	I can calculate intervals between numbers including across zero *Spring term targets*	I can solve number and practical problems that involve whole numbers up to 10 000 000 and negative numbers *Autumn term targets*
Year 7	I understand and use place value for decimals, measures and integers of any size	I can order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols =, ≠, <, >, ≤, ≥	I can round numbers and measures to an appropriate degree of accuracy [for example, to a number of decimal places or significant figures	I can compare two quantities using percentages, and work with percentages greater than 100%	I can define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively and express one quantity as a percentage of another.	I can use conventional notation for the priority of operations, including brackets, powers and roots

Progression of Addition and Subtraction Strand, (becomes Number operations Part 1 in upper KS2)- Mathematics Curriculum Marish Academy Trust 2019

Number addition and subtraction	Step B	Step B+	Step W	Step W+	Step S	Step S+
Year 1	I can use pictures and objects to help me solve addition and subtraction problems *Autumn term target*	I can read, write and interpret maths statements involving + (addition) – (subtraction and = (equals) *Autumn term target*	I can add and subtract one digit and two digit numbers to 20, including zero *Autumn term target*	I know my number bonds to 20 and related subtraction facts *Spring term target*	I can solve one-step problems, that use addition and subtraction to 20 *Spring term target*	I can solve missing number problems such as: 7 + ? = 9 *Spring term target*
Year 2	I can solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures *Autumn term target*	I 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 and adding three one-digit numbers *Autumn term target*	I recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 *Spring term target*	I can apply my increasing knowledge of mental and written methods to problem solving *Summer term target*	I know that addition of two numbers can be done in any order (commutative) and that subtraction of one number from another cannot be done in any order *Spring term target*	I recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. *Summer term target*
Year 3	I can add and subtract numbers mentally, including a three-digit number and ones *autumn term target*	I can add and subtract numbers mentally, including a three-digit number and tens *autumn term target*	I can add and subtract numbers mentally, including a three-digit number and hundreds *autumn term target*	I add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction *spring term target*	I can use inverse operations to check answers and I can estimate the answer to a calculation *spring term target*	I solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction *summer term target*
Year 4	I can add and subtract numbers with up to 4 digits *Autumn term target*	I can use formal written methods of columnar addition and subtraction where appropriate *Autumn term target*	I can solve addition and subtraction two-step problems in contexts. *Autumn term target*	I can decide which operations and methods to use and why. . *Summer term target*	I can recall multiplication and division facts for multiplication tables up to 12 × 12 *Autumn term target*	I can 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 *Spring term target*
Year 5 Number operations Part 1	I can add and subtract whole numbers with more than 4 digits *Autumn term target*	I can use formal written methods (columnar addition and subtraction) *Spring term targets*	I can add and subtract numbers mentally with increasingly large numbers *Spring term targets*	I can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy *Summer term targets*	I can solve addition and subtraction multi-step problems in contexts. *Autumn term target*	When solving problems, I can decide which operations and methods to use and why. *Summer term targets*
Year 6 Number operations Part 1	I can solve addition and subtraction multi-step problems in contexts	I can use my knowledge of the order of operations to carry out calculations involving the four operations	I can solve problems involving addition, subtraction, multiplication and division	I can decide which operations and methods to use and why	I can use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	I can perform mental calculations, including with mixed operations and large numbers *Summer term targets*
Year 7	I can use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative	I can recognise and use relationships between operations including inverse operations	I can interpret fractions and percentages as operators	I can use standard units of mass, length, time, money and other measures, including with decimal quantities	I can use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple and prime factorisation	I can use a calculator and other technologies to calculate results accurately and then interpret them appropriately

Progression of Multiplication and Division Strand, (becomes Number operations Part 2 in upper KS2)- Mathematics Curriculum Marish Academy Trust 2019

Number multiplication and division	Step B	Step B+	Step W	Step W+	Step S	Step S+
Year 1	I can count in multiples of 2s, 5s and 10s *Autumn term target*	I can make connections between number patterns and arrays *Spring term target*	I can solve one step multiplication problems by using objects, pictures, or arrays with the help of a teacher *Spring term target*	I can solve one step division problems by using objects, pictures or arrays with the help of a teacher *Spring term target*	I can double a number and understand 'halving' as a way of undoing doubling. *Summer term target*	I can find a simple fraction of a number *Summer term target*
Year 2	I recognise odd and even numbers *Autumn term target*	I can write tables and division facts using the multiplication (×), division (÷) and equals (=) signs *Autumn term target*	I calculate mathematical statements for multiplication and division within the multiplication tables *Spring term target*	I recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables *Spring term target*	I can show that multiplication of two numbers can be done in any order (commutative) and that division of one number by another cannot be done any order. *Summer term target*	I solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts. *Summer term target*
Year 3	I recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables *autumn term target*	I write and calculate mathematical statements for multiplication and division using the multiplication tables that I know *autumn term target*	I can calculate answers to two-digit numbers times one-digit numbers, using mental and progressing to formal written methods *spring term target*	I solve problems including missing number problems and involving multiplication and division *autumn term target*	I solve problems including positive integer scaling problems *spring term target*	I solve correspondence problems in which n objects are connected to m objects. (for example, 3 hats and 4 coats, how many different outfits?; 12 sweets shared equally between 4 children; 4 cakes shared equally between 8 children). *summer term target*
Year 4	I estimate and use inverse operations to check answers to a calculation *Autumn term target*	I recognise and use factor pairs and commutativity in mental calculations *Autumn term target*	I multiply two-digit and three-digit numbers by a one-digit number using formal written layout *Spring term target*	I solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit *Spring term target*	I can solve, integer scaling problems, (for example 600 ÷ 3 = 200 can be derived from 2 x 3 = 6). *Summer term target*	I can solve harder correspondence problems such as n objects are connected to m objects, (for example numbers of choices of a meal on a menu, or three cakes shared equally between 10 children.) *Summer term target*

Year 5 multiplication and division Part 1	I can identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers *Autumn term target*	I know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers *Spring term targets*	I can establish whether a number up to 100 is prime and recall prime numbers up to 19 *Spring term targets*	I can 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 *Autumn term target*	I can 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 *Summer term targets*	I can multiply and divide whole numbers mentally drawing upon known facts and those involving decimals by 10, 100 and 1000 *Summer term targets*
Year 5 multiplication and division Part 2	I can recognise and use square numbers and cube numbers *Spring term targets*	I can use the notation for squared (^{2}) and cubed (^{3}) *Spring term targets*	I can solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes	I can solve problems involving addition, subtraction, multiplication and division *Summer term targets*	I can solve problems involving combinations of the four operations, including understanding the meaning of the equals sign *Summer term targets*	I can solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
Year 6 Number operations Part 2	I can identify common factors, common multiples and prime numbers	I can perform mental calculations, including with mixed operations and large numbers	I can multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	I can divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division,	I can 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 *Spring term targets*	I can interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context *Autumn term targets*
Year 7 Developing Fluency	I have consolidated my numerical and mathematical capability from key stage 2 and my their understanding of the number system and place value now includes decimals, fractions, powers and roots	I use algebra confidently to generalise the structure of arithmetic, including to formulate mathematical relationships.	I use language and properties precisely to analyse numbers, algebraic expressions, 2-D and 3-D shapes, probability and statistics.	I can confidently substitute values in expressions, rearrange and simplify expressions, and solve equations	I move freely between different numerical, algebraic, graphical and diagrammatic representations [for example, equivalent fractions, fractions and decimals, and equations and graphs]	**Developing Fluency**

Progression of Fractions Strand- Mathematics Curriculum Marish Academy Trust 2019

Number Fractions Strand	Step B	Step B+	Step W	Step W+	Step S	Step S+
Year 1	I can find half of a shape *Autumn term target*	I can recognise two equal parts of an object or several objects or a quantity as a half *Autumn term target*	I can find and name a quarter of an object or quantity or a shape. *Spring term target*	I can recognise a quarter as one of four equal parts *Summer term target*	I can combine halves and quarters to make a whole *Summer term target*	I can find a half, or a quarter of a given length *Summer term target*
Year 2	I recognise, find, name and write fractions *Autumn term target*	I can find ½, 1/3 ¼ and ¾ of a shape and of a set of objects *Spring term target*	I can write simple fractions for example, ½ of 6 = 3 *Spring term target*	I can find ½, 1/3 ¼ and ¾ of a quantity *Spring term target*	I can find ½, 1/3 ¼ and ¾ of a length *Spring term target*	I recognise the equivalence of 2/2 and ½ *Summer term target*
Year 3	I recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators. *autumn term target*	I compare and order unit fractions, and fractions with the same denominator. I recognise and show, using diagrams, equivalent fractions with small denominators *autumn term target*	I recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators *spring term target*	I 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 *summer term target*	I add and subtract fractions with the same denominator within one whole [for example, 5/7 + 1/7 = 6/7] *summer term target*	I solve problems that involve all of the aside. *summer term target*
Year 4 Fractions part	I recognise and show, using diagrams, families of common equivalent fractions *Autumn term target*	I count up and down in hundredths *Autumn term target*	I recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten *Summer term target*	I solve problems involving increasingly harder fractions to calculate quantities *Summer term target*	I solve problems using fractions to divide quantities, including non-unit fractions where the answer is a whole number *Summer term target*	I can add and subtract fractions with the same denominator *Summer term target*
Year 4 Fractions part 2	I recognise and write decimal equivalents of any number of tenths or hundredths *Summer term target*	I recognise and write decimal equivalents to ¼, ½, 1/3, 1/10, ¾, 1/5 *Spring term target*	I can divide a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths *Summer term target*	I can round decimals with one decimal place to the nearest whole number *Autumn term target*	I can compare numbers with the same number of decimal places up to two decimal places *Summer term target*	I solve simple measure and money problems involving fractions and decimals to two decimal places. *Spring term target*

Year 5 Fractions part 1	I can compare and order fractions whose denominators are all multiples of the same number	I can identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths *Autumn term target*	I recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, 2/5 + 4/5 = 6/5 or 1 1/5 *Spring term targets*	I can add and subtract fractions with the same denominator and denominators that are multiples of the same number	I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	I can read and write decimal numbers as fractions [for example, 0.71 = 71/100] *Summer term targets*
Year 5 Fractions part 2	I recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	I round decimals with two decimal places to the nearest whole number and to one decimal place *Autumn term target*	I can read, write, order and compare numbers with up to three decimal places	I can solve problems involving number up to three decimal places	I 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	I 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 *Summer term targets*
Year 6 Fractions Part 1	I can use common factors to simplify fractions *Autumn term targets*	I can use common multiples to express fractions in the same denomination *Autumn term targets*	I can compare and order fractions, including fractions > 1 *Autumn term targets*	I can add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	I can recall and use equivalences between simple fractions, decimals and percentages, including in different *Spring term targets* contexts.	I can solve problems which require answers to be rounded to specified degrees of accuracy *Summer term targets*
Year 6 Fractions Part 2	I can identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places	I can multiply one-digit numbers with up to two decimal places by whole numbers	I can divide proper fractions by whole numbers [for example	I can associate a fraction with division and calculate decimal fraction equivalents for a simple fraction	I can use written division methods in cases where the answer has up to two decimal places	I can multiply simple pairs of proper fractions, writing the answer in its simplest form *Summer term targets*
Year 7	**Reason Mathematically**	I consistently and confidently make connections between number relationships, and their algebraic and graphical representations		I have extended and formalised my knowledge of ratio and proportion in working with measures and geometry, and in formulating proportional relations algebraically	I make and test conjectures about patterns and relationships; look for proofs or counter-examples	I am beginning to reason deductively in geometry, number and algebra, including using geometrical constructions

Progression of Measurement Strand- Mathematics Curriculum Marish Academy Trust 2019

Measurement Strand	Step B	Step B+	Step W	Step W+	Step S	Step S+
Year 1	I can compare, describe, and solve problems involving lengths and heights using vocabulary such as long/short longer/shorter tall/short double/half *Autumn term target*	I can compare, describe and solve problems involving weight and mass using vocabulary such as heavy/light heavier than/lighter than *Autumn term target*	I can compare, describe, and solve problems involving capacity, using language such as full/empty more than/less than half, half full, quarter *Spring term target* I know the value of different denominations of coins and notes	I can measure and record the following: Lengths and highest Weight and mass Capacity and volume Time (hours, minutes, seconds) *Spring term target*	I can sequence events in chronological order: Before/after/next/earlier Today/ yesterday/tomorrow/ Afternoon/morning/ Evening and recognise language relating to dates, days of the week, weeks, months and years *Summer term target*	I can compare, describe and solve problems involving time, using language such as quicker/slower /earlier/later I can tell the time to the hour, and half past the hour and draw these hands on a clock face *Summer term target*
Year 2	I choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels. *Autumn term target*	I compare and order lengths, mass, volume/capacity and record the results using >, < and = *Autumn term target*	I recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value; including different combinations of coins that equal the same amounts of money. *Spring term target*	I solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change *Autumn term target*	I compare and order lengths, mass, volume/capacity and record the results using >, < and = *Spring term target*	I can 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 *Spring term target*
Year 3	I can measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) *autumn term target*	I measure the perimeter of simple 2-D shapes *autumn term target*	I add and subtract amounts of money to give change, using both £ and p in practical contexts *autumn term target*	I tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks *spring term target*	I 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 *summer term target*	I compare durations of events [for example to calculate the time taken by particular events or tasks]. I know the number of seconds in a minute and the number of days in each month, year and leap year *summer term target*
Year 4	I can convert between different units of measure [for example, kilometre to metre; hour to minute] *Autumn term target*	I can measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres *Autumn term target*	I can find the area of rectilinear shapes by counting squares *Autumn term target*	I estimate, compare and calculate different measures, including money in pounds and pence .*Spring term target*	I read, write and convert time between analogue and digital 12- and 24-hour clocks *Autumn term target*	I solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days. *Autumn term target*

Year 5	I can convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) *Autumn term target*	I understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints *Autumn term target*	I measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres *Spring term targets*	I calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes *Spring term targets*	I estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] *Spring term targets*	I can solve problems involving converting between units of time and use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling. *Spring term targets*
Year 6	I can solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate eg miles to kilometres and vice versa	I can use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places *Autumn term targets*	I can recognise that shapes with the same areas can have different perimeters and vice versa	I recognise when it is possible to use formulae for area and volume of shapes including calculating the area of parallelograms and triangles *Spring term targets*	I can calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3]. *Summer term targets*	I can use my knowledge of ratio and proportion in working with measures and geometry, and in formulating proportional relations algebraically *Summer term targets*
Year 7	**Problem Solving**	I have developed my mathematical knowledge, in part through solving problems and evaluating the outcomes, including multi-step problems		I can select appropriate concepts, methods and techniques to apply to unfamiliar and non-routine problems.	I am developing my use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics	I am beginning to model situations mathematically and express the results using a range of formal mathematical representations

Progression of Geometry Strand- Mathematics Curriculum Marish Academy Trust 2019

Geometry-Strand	Step B	Step B+	Step W	Step W+	Step S	Step S+
Year 1- Shape	I can recognise common 2D and 3D shapes including square, circle, rectangles, triangles, spheres, pyramids, cuboids and cubes *Autumn term target*	I can relate everyday objects to shapes, and name them fluently and I can recognise shapes in different orientations and sizes *Autumn term target*	I can describe the properties of shape including the number of sides and corners *Spring term target*	I can sort 2D and 3D shapes to a single criterion e.g. shapes that have 4 corners *Spring term target*	I can draw 2D shapes with a ruler *Summer term target*	I am beginning to understand the difference between 2 dimensional and 3 dimensional shapes *Summer term target*
Year 1 Position and Direction	I can describe position using the language in front of, on top of, behind, above, near, in between *Autumn term target*	I can describe the movement of shape using the language forwards, backwards, up and down. *Autumn term target*	I can describe direction using the language top, bottom, left and right *Spring term target*	I can recognise that a shape stays the same, even when it is held up in different orientations *Summer term target*	I can recognise right angles in turns and I understand half, quarter and three quarter turns *Summer term target*	I can give directions to meet a target destination and I understand turning clockwise *Summer term target*
Year 2- Shape	I can identify and describe the properties of 2-D shapes *Autumn term target*	I can describe the number of sides of 2D shapes and line symmetry in a vertical line. *Autumn term target*	I can identify and describe the properties of 3-D shapes including identifying edges, vertices and faces. *Autumn term target*	I can identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid) *Spring term target*	I can compare and sort common 2-D and 3-D shapes *Summer term target*	I can identify 2-D and 3-D shapes in everyday objects. *Summer term target*
Year 2 Position and Direction	I can order and arrange combinations of mathematical objects in patterns and sequences). *Autumn term target*		I can use mathematical vocabulary to describe position, direction and movement including in a straight line. *Autumn term target*		I can distinguish between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise) *Spring term target*	
Year 3- Shape. Position and Direction	I draw 2-D shapes and make 3-D shapes using modelling materials; *autumn term target*	I recognise 3-D shapes in different orientations and describe them *autumn term target*	I recognise angles as a property of shape or a description of a turn *spring term target*	I identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn *spring term target*	I identify whether angles are greater than or less than a right angle *spring term target*	I identify horizontal and vertical lines and pairs of perpendicular and parallel lines. *summer term target*

Year 4- Shape. Position and Direction	I can compare and classify geometric shapes, including quadrilaterals and triangles**,** based on their properties and sizes *Autumn term target*	I identify acute and obtuse angles and compare and order angles up to two right angles by size *Autumn term target*	I identify lines of symmetry in 2-D shapes presented in different orientations *Spring term target*	I complete a simple symmetric figure with respect to a specific line of symmetry *Spring term target*	I can describe positions on a 2-D grid as coordinates in the first quadrant and plot specified points and draw sides to complete a given polygon. *Summer term target*	I describe movements between positions as translations of a given unit to the left/right and up/down *Summer term target*
Year 5- Shape	I can identify 3-D shapes, including cubes and other cuboids, from 2-D representations *Summer term targets*	I know angles are measured in degrees and can estimate and compare acute, obtuse and reflex angles *Autumn term target*	I can draw given angles, and measure them in degrees (o) *Autumn term target*	I can identify: angles at a point and one whole turn (total 360o); angles at a point on a straight line and 1/2 a turn (total 180o) and other multiples of 90o *Summer term target*	I can use the properties of rectangles to deduce related facts and find missing lengths and angles *Spring term targets*	I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles *Spring term targets*
Year 5 – position and direction	I can 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. *Summer term target*			I recognise and use reflection in lines that are parallel to axes and translation in a variety of diagrams, including continuing to use a 2-D grid and coordinates in the first quadrant. *Autumn term target*		
Year 6 Shape and Position and direction	I can compare and classify geometric shapes based on their properties and size and find unknown angles in any triangles, quadrilaterals, and regular polygons	I can draw 2-D shapes using given dimensions and angles and I can recognise, describe and build simple 3-D shapes, including making nets *Autumn term targets*	I recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. *Spring term targets*	I can illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius *Summer term targets*	I can describe positions on the full coordinate grid (all four quadrants) *Spring term targets*	I can draw and translate simple shapes on the coordinate plane, and reflect them in the axes. *Spring term targets*
Year 7	I can apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles	I can calculate and solve problems involving: perimeters of 2-D shapes (including circles), areas of circles and composite shapes	I can draw and measure line segments and angles in geometric figures, including interpreting scale drawings	I can derive and illustrate properties of triangles, quadrilaterals, circles, and other plane figures [for example, equal lengths and angles] using appropriate language and technologies	I can describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right angles, regular polygons, and other polygons that are reflectively and rotationally symmetric	I can derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders)

Progression of Statistics Strand-(only starts from Year 2) Mathematics Curriculum Marish Academy Trust 2019

Statistics Strand	Step B	Step B+	Step W	Step W+	Step S	Step S+
Year 2	I can interpret and construct block diagrams, pictograms, tally charts and simple tables. *Spring term target*		I can ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. *Summer term target*		I can ask and answer questions about totalling and comparing categorical data. *Summer term target*	
Year 3	I can interpret and present data using tables. *autumn term target*	I can interpret and present data using bar charts and pictograms. *autumn term target*	I solve one-step problems for example, 'How many more?' and 'How many fewer?' using information presented in pictograms, tables and bar charts *autumn term target*	I can solve two-step questions using information presented in tables. *spring term target*	I can solve two-step questions using information presented in pictograms *spring term target*	I can solve two-step questions using information presented in scaled bar charts *summer term target*
Year 4	I can draw a pair of axes in one quadrant, with equal scales and integer labels. *Autumn term target*	I interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs. *Autumn term target*	I solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs. *Spring term target*	I understand and use a greater range of scales in different representations. *Spring term target*	I am beginning to relate the graphical representation of data to recording change over time. *Summer term target*	I am beginning to pose questions about data represented in graphs or charts *Summer term target*
Year 5	I can complete, read and interpret information in tables, including timetables. *Autumn term target*		I can solve comparison, sum and difference problems using information presented in a line graph *Spring term targets*		I make links between work on coordinates and scales to interpretation of time graphs. *Autumn term target*	I am beginning to decide which representations of data are most appropriate and why. *Spring term targets*
Year 6	I can interpret and construct pie charts and line graphs and use these to solve problems	I can calculate and interpret the mean, median and mode as averages and the range for any data series and use it to solve problems. *Autumn term targets*	I can record, describe and analyse the frequency of outcomes of simple probability experiments involving randomness, fairness, equally and unequally likely outcomes, using appropriate language and the 0-1 probability scale	I understand that the probabilities of all possible outcomes sum to 1	I can describe and interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data; and appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers)*Summer term targets*	I can construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data. *Summer term targets*
Year 7	I can describe, interpret and compare observed distributions of a single variable through: appropriate graphical representation involving discrete, continuous and grouped data	I understand and can calculate appropriate measures of central tendency (mean, mode, median) and spread (range, consideration of outliers.	I can construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data			I can describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs.

Progression of Algebra and Ratio and proportion Strands-(only starts from Year 6) Mathematics Curriculum Marish Academy Trust 2019

Algebra Strand	Step B	Step B+	Step W	Step W+	Step S	Step S+
Year 6	I can generate and describe linear number sequences and I can describe generalisations of number patterns in words *Autumn term targets*	I can express missing number (eg lengths, coordinates or angles) problems algebraically	I can use formulae in mathematics and science *Autumn term targets*	I can find pairs of numbers that satisfy an equation with two unknowns, such as equivalent expressions (for example, $a + b = b + a$)	I can enumerate possibilities of combinations of two variables, for example, what two numbers can add up to. *Summer term targets*	I can use and interpret algebraic notation, including: ab in place of $a \times b$; $3y$ in place of $y + y + y$ and $3 \times y$; a^2 in place of $a \times a$, a^3 in place of $a \times a \times a$; $a^2 b$ in place of $a \times a \times b$ and a/b in place of $a \div b$ *Summer term targets*
Year 7	I understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors	I can substitute numerical values into formulae and expressions, including scientific formulae.	I can simplify and manipulate algebraic expressions to maintain equivalence by: ▢ collecting like terms ▢ multiplying a single term over a bracket ▢ taking out common factors	I can understand and use coefficients written as fractions rather than as decimals.	I can understand and use standard mathematical formulae; rearrange formulae to change the subject	I can model situations or procedures by translating them into algebraic expressions or formulae and by using graphs
Ratio and Proportion Strand						
Year 6	I can solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts	I can solve problems involving the calculation of percentages for example, of measures	I can solve problems involving the use of percentages for comparison, for example, linking percentages or 360° to calculating angles of pie charts.	I can solve problems involving similar shapes where the scale factor is known or can be found . *Spring term targets*	I can recognise proportionality in contexts when the relations between quantities are in the same ratio (for example, similar shapes and recipes). *Spring term targets*	I can solve problems involving unequal sharing and grouping using knowledge of fractions and multiples
Year 7	I can change freely between related standard units [for example time, length, area, volume/capacity, mass]	I can use scale factors, scale diagrams and maps	I can express one quantity as a fraction of another, where the fraction is less than 1 and greater than 1	I can solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in	I understand that a multiplicative relationship between two quantities can be expressed as a ratio or a fraction	I can divide a given quantity into two parts in a given part:part or part:whole ratio; express the division of a quantity into two parts as a ratio

				financial mathematics		