



MacIntyre Academies Quest Academy

Whole School Long Term Mathematics Plans 2022 – 2023

Long Term Planning Year 3

Subject: Maths Year Group: 3

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number of weeks	7	7	6	6	5	7.5
National Curriculum Topic	Number Geometry Problem Solving	Number Geometry and Measure Problem Solving	Number Algebra Statistics	Number Ratio rates of change Geometry and Measure	Number Statistics Algebra	Number Geometry and Measure Ratio and Proportion
Odyssey Strands	MAS Mental addition and subtraction; PRA Problem solving, reasoning and algebra NPV Number and place value; MAS Mental addition and subtraction; PRA Problem solving, reasoning and algebra MMD Mental multiplication and division; PRA Problem solving, reasoning and algebra MEA Measurement; GPS Geometry: properties of shapes NPV Number and place value; MAS Mental addition and subtraction; PRA Problem solving, reasoning and algebra MEAS Measurement; GPS Geometry: properties of shapes STA Statistics NPV Number and place value; MAS Mental addition and subtraction; PRA Problem solving, reasoning and algebra	MMD Mental multiplication and division; FRP Fractions, ratio and proportion; PRA Problem solving, reasoning and algebra MEA Measurement; PRA Problem solving, reasoning and algebra; MAS Mental addition and subtraction GPS Geometry: properties of shapes NPV Number and place value; MAS Mental addition and subtraction; PRA Problem solving, reasoning and algebra MMD Mental multiplication and division; PRA Problem solving, reasoning and algebra; MAS Mental addition and subtraction	NPV Number and place value; MAS Mental addition and subtraction; PRA Problem solving, reasoning and algebra MAS Mental addition and subtraction; MMD Mental multiplication and division; STA Statistics; PRA Problem solving, reasoning and algebra FRP Fractions, ratio and proportion; PRA Problem solving, reasoning and algebra GPS Geometry: properties of shapes; GPD Geometry: position and direction; MEAS Measurement NPV Number and place value; MAS Mental addition and subtraction	NPV Number and place value; PRA Problem solving, reasoning and algebra; WAS Written addition and subtraction MAS Mental addition and subtraction; WAS Written addition and subtraction; PRA Problem solving, reasoning and algebra MEA Measurement NPV Number and place value; MAS Mental addition and subtraction; PRA Problem solving, reasoning and algebra MMD Mental multiplication and division; WMD Written multiplication and division; PRA Problem solving, reasoning and algebra	MAS Mental addition and subtraction; PRA Problem solving, reasoning and algebra; FRP Fractions, ratio and proportion MMD Mental multiplication and division; PRA Problem solving, reasoning and algebra; WMD Written multiplication and division STA Statistics; PRA Problem solving, reasoning and algebra; MEAS Measurement MAS Mental addition and subtraction; WAS Written addition and subtraction; PRA Problem solving, reasoning and algebra	WAS Written addition and subtraction; MAS Mental addition and subtraction WAS Written addition and subtraction; MEAS Measurement; MAS Mental addition and subtraction; PRA Problem solving, reasoning and algebra GPS Geometry: properties of shapes; MEAS Measurement WMD Written multiplication and division; PRA Problem solving, reasoning and algebra; MMD Mental multiplication and division; FRP Fractions, ratio and proportion; DPE Decimals, percentages and their equivalence to fractions MAS Mental addition and subtraction; WAS Written addition and subtraction; PRA Problem solving, reasoning and algebra; WMD Written multiplication and division; MMD Mental multiplication and division

Key Curriculum Strands	Literacy Communication skills	Community contribution Effective contributor	Resilience Motivation Understanding emotions Self – expression	ICT Communication	Working with others Understanding laws	Rule of law Exercise, resilience
Criteria	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.
	Enquiry based Learning Practical Problem solving.	Enquiry based Learning Shape investigation Active Maths	Enquiry based Learning Fraction investigation using practical resources.	Enquiry based Learning Practical measuring with units of measure through forest school.	Enquiry based Learning Analyse some basic real-life stats.	Enquiry based Learning Creating problems for peers make your own dominos Measure distance on treadmill / rowing machine.
	Cross Curricular English Science	Cross Curricular Art Science Life Skills	Cross Curricular Food Technology PE Science	Cross Curricular Computing Forest school	Cross Curricular English Science Life Skills	Cross Curricular Science Computing Life Skills English PE
	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High

Long Term Planning Year 4

Subject: Maths Year Group: 4						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number of weeks	7	7	6	6	5	7.5
National Curriculum Topic	Number F D P	Number Geometry and Measure Statistics Algebra	Number Algebra Geometry and Measure	Number Algebra	Number Geometry and Measure Ratio and Proportion.	Number Geometry and Measure Algebra Ratio and proportion

<p>Odyssey Strands</p>	<p>MAS Mental addition and subtraction; PRA Problem solving, reasoning and algebra NPV Number and place value; MAS Mental addition and subtraction MMD Mental multiplication and division; PRA Problem solving, reasoning and algebra; WMD Written multiplication and division; FRP Fractions, ratio and proportion MEA Measurement; DPE Decimals, percentages and their equivalence to fractions WAS Written addition and subtraction</p>	<p>MMD Mental multiplication and division; PRA Problem solving, reasoning and algebra; FRP Fractions, ratio and proportion DPE Decimals, percentages and their equivalence to fractions; NPV Number and place value; WAS Written addition and subtraction; MAS Mental addition and subtraction DPE Decimals, percentages and their equivalence to fractions; MEA Measurement; STA Statistics; PRA Problem solving, reasoning and algebra NPV Number and place value; WAS Written addition and subtraction; MAS Mental addition and subtraction MMD Mental multiplication and division; WMD Written multiplication and division; PRA Problem solving, reasoning and algebra</p>	<p>NPV Number and place value; PRA Problem solving, reasoning and algebra WAS Written addition and subtraction; MMD Mental multiplication and division; WMD Written multiplication and division; PRA Problem solving, reasoning and algebra; MEA Measurement MMD Mental multiplication and division; FRP Fractions, ratio and proportion; PRA Problem solving, reasoning and algebra GPS Geometry: properties of shapes; PRA Problem solving, reasoning and algebra MMD Mental multiplication and division; WMD Written multiplication and division; MAS Mental addition and subtraction; PRA Problem solving, reasoning and algebra</p>	<p>DPE Decimals, percentages and their equivalence to fractions; NPV Number and place value; PRA Problem solving, reasoning and algebra; WAS Written addition and subtraction; MAS Mental addition and subtraction; MEA Measurement; PRA Problem solving, reasoning and algebra MEA Measurement; PRA Problem solving, reasoning and algebra NPV Number and place value; WAS Written addition and subtraction; MAS Mental addition and subtraction WMD Written multiplication and division; PRA Problem solving, reasoning and algebra; MAS Mental addition and subtraction; WAS Written addition and subtraction</p>	<p>NPV Number and place value; PRA Problem solving, reasoning and algebra MAS Mental addition and subtraction; DPE Decimals, percentages and their equivalence to fractions MMD Mental multiplication and division; PRA Problem solving, reasoning and algebra; NPV Number and place value; WMD Written multiplication and division; MEA Measurement NPV Number and place value; MEA Measurement; GPS Geometry: properties of shapes DPE Decimals, percentages and their equivalence to fractions; PRA Problem solving, reasoning and algebra; FRP Fractions, ratio and proportion</p>	<p>MAS Mental addition and subtraction; MMD Mental multiplication and division; WMD Written multiplication and division; PRA Problem solving, reasoning and algebra WAS Written addition and subtraction; PRA Problem solving, reasoning and algebra; MAS Mental addition and subtraction GPD Geometry: position and direction; STA Statistics WMD Written multiplication and division; PRA Problem solving, reasoning and algebra; MMD Mental multiplication and division; FRP Fractions, ratio and proportion; DPE Decimals, percentages and their equivalence to fractions MMD Mental multiplication and division; PRA Problem solving, reasoning and algebra; WMD Written multiplication and division; FRP Fractions, ratio and proportion</p>
<p>Key Curriculum Strands</p>	<p>Literacy Communication skills</p>	<p>Community contribution Effective contributor</p>	<p>Resilience Motivation Understanding emotions Self – expression</p>	<p>ICT Communication</p>	<p>Working with others Understanding laws</p>	<p>Rule of law Exercise, resilience</p>
<p>Criteria</p>	<p>Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.</p>	<p>Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.</p>	<p>Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.</p>	<p>Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.</p>	<p>Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.</p>	<p>Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.</p>

	Enquiry based Learning How do we measure travel? Look at distances and multiplication.	Enquiry based Learning What are the relationships between Science and Maths using decimals?	Enquiry based Learning Create a collage using 'tessellating' shapes. Why do they tessellate?	Enquiry based Learning No pens problem solving in real life situations	Enquiry based Learning Make a cake and divide it and ingredient's into to set fractions	Enquiry based Learning Shape investigation, which artist used shape as their main pieces?
	Cross Curricular English Science Geography	Cross Curricular Science English Food Technology PE	Cross Curricular Science Art	Cross Curricular English Science Life Skills	Cross Curricular English Science Food Technology PE	Cross Curricular Science Life Skills Art
	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High

Long Term Planning Year 5

Subject: Maths Year Group: 5						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number of weeks	7	7	6	6	5	7.5
National Curriculum Topic	Number Mental Arithmetic Measure Decimals, Fractions and Percentage	Number Mental Arithmetic Geometry and Measure	Number Mental Arithmetic Geometry and Measure Statistics.	Number Geometry Measure Decimals, Fractions and Percentage	Number Geometry and Measure Algebra Mental Arithmetic	Mental Arithmetic Algebra Statistics Number Decimals, Fractions and Percentage
Odyssey Strands	NPV Number and place value; WAS Written addition and subtraction; PRA Problem solving, reasoning and algebra MAS Mental addition and subtraction; NPV Number and place value DPE Decimals, percentages and their equivalence to fractions; PRA Problem solving, reasoning and algebra;	MMD Mental multiplication and division; FRP Fractions, ratio and proportion MMD Mental multiplication and division; WMD Written multiplication and division; PRA Problem solving, reasoning and algebra GPS Geometry: properties of shapes;	NPV Number and place value; DPE Decimals, percentages and their equivalence to fractions; PRA Problem solving, reasoning and algebra MAS Mental addition and subtraction; PRA Problem solving, reasoning and algebra; WAS Written addition and subtraction	WMD Written multiplication and division WMD Written multiplication and division; FRP Fractions, ratio and proportion GPS Geometry: properties of shapes; PRA Problem solving, reasoning and algebra; MEA Measurement	MAS Mental addition and subtraction; DPE Decimals, percentages and their equivalence to fractions; PRA Problem solving, reasoning and algebra FRP Fractions, ratio and proportion; PRA Problem solving, reasoning and algebra; WMD Written multiplication and division	MMD Mental multiplication and division; PRA Problem solving, reasoning and algebra; FRP Fractions, ratio and proportion WMD Written multiplication and division PRA Problem solving, reasoning and algebra; MEA Measurement

	MMD Mental multiplication and division MEA Measurement WAS Written addition and subtraction; MAS Mental addition and subtraction	PRA Problem solving, reasoning and algebra NPV Number and place value; DPE Decimals, percentages and their equivalence to fractions; FRP Fractions, ratio and proportion MAS Mental addition and subtraction; WAS Written addition and subtraction; MMD Mental multiplication and division; WMD Written multiplication and division; PRA Problem solving, reasoning and algebra	MMD Mental multiplication and division; NPV Number and place value; PRA Problem solving, reasoning and algebra PRA Problem solving, reasoning and algebra GPS Geometry: properties of shapes; MEA Measurement; STA Statistics WAS Written addition and subtraction; PRA Problem solving, reasoning and algebra; MEA Measurement	FRP Fractions, ratio and proportion; PRA Problem solving, reasoning and algebra WAS Written addition and subtraction; PRA Problem solving, reasoning and algebra	DPE Decimals, percentages and their equivalence to fractions; PRA Problem solving, reasoning and algebra; NPV Number and place value GPD Geometry: position and direction; PRA Problem solving, reasoning and algebra; GPS Geometry: properties of shapes WAS Written addition and subtraction; PRA Problem solving, reasoning and algebra	DPE Decimals, percentages and their equivalence to fractions; FRP Fractions, ratio and proportion; NPV Number and place value NPV Number and place value GPD Geometry: position and direction; PRA Problem solving, reasoning and algebra; MEA Measurement; WMD Written multiplication and division; PRA Problem solving, reasoning and algebra; MMD Mental multiplication and division
Key Curriculum Strands	Literacy Communication skills	Community contribution Effective contributor	Resilience Motivation Understanding emotions Self – expression	ICT Communication	Working with others Understanding laws	Rule of law Exercise, resilience
Criteria	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.
	Enquiry based Learning Active maths outdoors looking at timings of events and decimals.	Enquiry based Learning Read and create personalised problems using written multiplication.	Enquiry based Learning Statistical investigation on real life issues I.e climate change.	Enquiry based Learning Practical fractions in food technology.	Enquiry based Learning Problem solving, map reading and art projects investigating shape	Enquiry based Learning Look at measure and travel and maps in forest schools
	Cross Curricular English Science Geography	Cross Curricular Science English Food Technology PE	Cross Curricular Science Art	Cross Curricular Food technology Science Life Skills	Cross Curricular Life Skills Resilience English reading	Cross Curricular Science PE Forest Schools

	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High
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Long Term Planning Year 6

Subject: Maths Year Group: 6						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number of weeks	7	7	6	6	5	7.5
National Curriculum Topic	Number Ratio and Proportion Geometry and Measure. Algebra	Number Geometry and Measure Algebra Ratio and Proportion	Number Algebra Geometry and Measure	Number Statistics Algebra Geometry and Measure.	Number Ratio and proportion Algebra Geometry and measure	Number Geometry and Measure Statistics Algebra
Odyssey Strands	NPV Number and place value; MMD Mental multiplication and division; DPE Decimals, percentages and their equivalence to fractions; FRP Fractions, ratio and proportion MAS Mental addition and subtraction; NPV Number and place value; WAS Written addition and subtraction; DPE Decimals, percentages and their equivalence to fractions; PRA Problem solving, reasoning and algebra PRA Problem solving, reasoning and algebra; MAS Mental addition and subtraction MEA Measurement; PRA Problem solving, reasoning and algebra; NPV Number and place value	NPV Number and place value; PRA Problem solving, reasoning and algebra; FRP Fractions, ratio and proportion MEA Measurement; GPS Geometry: properties of shapes, co-ordinates and translation. MMD Mental multiplication and division; FRP Fractions, ratio and proportion; WMD Written multiplication and division; PRA Problem solving, reasoning and algebra FRP Fractions, ratio and proportion; PRA Problem solving, reasoning and algebra; DPE Decimals, percentages and their equivalence to fractions FRP Fractions, ratio and proportion	NPV Number and place value; WAS Written addition and subtraction DPE Decimals, percentages and their equivalence to fractions; FRP Fractions, ratio and proportion MMD Mental multiplication and division; WMD Written multiplication and division; PRA Problem solving, reasoning and algebra; NPV Number and place value GPS Geometry: properties of shapes; PRA Problem solving, reasoning and algebra MAS Mental addition and subtraction; NPV Number and place value; WAS Written addition and subtraction; PRA Problem solving, reasoning and algebra	MAS Mental addition and subtraction; WAS Written addition and subtraction; PRA Problem solving, reasoning and algebra STA Statistics; DPE Decimals, percentages and their equivalence to fractions GPD Geometry: position and direction; NPV Number and place value; PRA Problem solving, reasoning and algebra; GPS Geometry: properties of shapes WMD Written multiplication and division; PRA Problem solving, reasoning and algebra PRA Problem solving, reasoning and algebra; FRP Fractions, ratio and proportion	NPV Number and place value; DPE Decimals, percentages and their equivalence to fractions NPV Number and place value; MAS Mental addition and subtraction; WAS Written addition and subtraction; DPE Decimals, percentages and their equivalence to fractions; FRP Fractions, ratio and proportion; PRA Problem solving, reasoning and algebra; GPS Geometry: properties of shapes MAS Mental addition and subtraction; FRP Fractions, ratio and proportion; WMD Written multiplication and division; MMD Mental multiplication and division; PRA Problem solving, reasoning and algebra; NPV Number and place value	NPV Number and place value; FRP Fractions, ratio and proportion; MEA Measurement GPS Geometry: properties of shapes; MEA Measurement; STA Statistics NPV Number and place value; PRA Problem solving, reasoning and algebra; GPD Geometry: position and direction; WMD Written multiplication and division NPV Number and place value; PRA Problem solving, reasoning and algebra; GPS Geometry: properties of shapes.

Long Term Planning Year 7

Subject: Maths Year Group: 7

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number of weeks	7	7	6	6	5	7.5
National Curriculum	<p>Number and the number system</p> <p>Calculating</p>	<p>Checking</p> <p>Counting and comparing</p> <p>Visualising</p>	<p>Assess and enrich</p> <p>Properties of shapes</p> <p>Algebraic proficiency: tinkering</p> <p>Exploring FDP</p>	<p>Proportional reasoning</p> <p>Patterns</p> <p>Measuring space</p>	<p>Angle</p> <p>Calculating FDP cont'd</p> <p>Solving equations</p> <p>Calculating space</p>	<p>Mathematical movement</p> <p>Presentation of data</p> <p>Measuring data</p> <p>Assessment</p>
Odyssey Strands	<p>Numbers and the number system:</p> <p>Find prime numbers and test numbers to see if they are prime</p> <p>Find common factors of numbers</p> <p>Find the highest common factor of numbers in simple cases, including co-prime examples</p> <p>Find common multiples of numbers</p> <p>Recognise and solve problems involving the lowest common multiple</p> <p>Use linear (arithmetic) number patterns to solve problems</p> <p>Recognise and use triangular numbers</p> <p>Recognise and use square and cube numbers</p> <p>Read, write and evaluate powers</p> <p>Define and find square roots (including using the $\sqrt{\quad}$ symbol)</p> <p>Define and find cube roots (including using the $\sqrt[3]{\quad}$ symbol), including the use of a scientific calculator</p> <p>Define and find other roots (including using the $\sqrt{\quad}$ symbol), including the use of a scientific calculator</p>	<p>Checking</p> <p>round numbers and measures to an appropriate degree of accuracy (e.g. to a specified number of decimal places or significant figures)</p> <p>estimate answers; check calculations using approximation and estimation, including answers obtained using technology</p> <p>recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions)</p> <p>Counting and comparing</p> <p>order positive and negative integers, decimals and fractions</p> <p>use the symbols =, \neq, $<$, $>$, \leq, \geq</p> <p>Visualising</p> <p>use conventional terms and notations: points, lines, vertices, edges, planes, parallel lines, perpendicular lines, right</p>	<p>Assess and enrich</p> <p>Properties of shapes</p> <p>Identify properties of the faces, surfaces, edges and vertices of: cubes, cuboids, prisms, cylinders, pyramids, cones and spheres</p> <p>Derive and apply the properties and definitions of: special types of quadrilaterals, including square, rectangle, parallelogram, trapezium, kite and rhombus; and triangles and other plane figures</p> <p>using appropriate language</p> <p>Algebraic proficiency: tinkering</p> <p>express one quantity as a percentage of another</p> <p>understand and use the concepts and vocabulary of expressions, equations, formulae and terms</p> <p>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</p>	<p>Prop'l reasoning</p> <p>use ratio notation, including reduction to simplest form</p> <p>divide a given quantity into two parts in a given part: part or part: whole ratio</p> <p>Patterns</p> <p>generate terms of a sequence from a term-to-term rule</p> <p>Measuring space</p> <p>Use standard units of measure and related concepts (length, area, volume/capacity, mass, time, money, etc.)</p> <p>use standard units of mass, length, time, money and other measures (including standard compound measures) using decimal quantities where appropriate</p> <p>change freely between related standard units (e.g. time, length, area, volume/capacity, mass) in numerical contexts</p> <p>measure line segments and angles in geometric figures</p>	<p>Angles</p> <p>Apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles</p> <p>Calculating FDP cont'd</p> <p>apply the four operations, including formal written methods, to simple fractions (proper and improper), and mixed numbers</p> <p>interpret percentages and percentage changes as a fraction or a decimal, and interpret these multiplicatively</p> <p>compare two quantities using percentages</p> <p>solve problems involving percentage change, including percentage increase/decrease</p> <p>Solving equations</p> <p>recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions)</p> <p>solve linear equations in one unknown algebraically</p>	<p>Mathematical movement</p> <p>work with coordinates in all four quadrants</p> <p><i>understand and use lines parallel to the axes, $y = x$ and $y = -x$</i></p> <p>solve geometrical problems on coordinate axes</p> <p>identify, describe and construct congruent shapes including on coordinate axes, by considering rotation, reflection and translation</p> <p>describe translations as 2D vectors</p> <p>Presentation of data</p> <p>interpret and construct tables, charts and diagrams, including frequency tables, bar charts, pie charts and pictograms for categorical data, vertical line charts for ungrouped discrete numerical data and know their appropriate use</p> <p>Measuring data</p> <p>interpret, analyse and compare the</p>

	<p>Calculating: Understand and use place value (e.g. when working with very large or very small numbers, and when calculating with decimals) Apply the four operations, including formal written methods, to integers and decimals Use conventional notation for priority of operations, including brackets Recognise and use relationships between operations, including inverse operations (e.g. cancellation to simplify calculations and expressions)</p>	<p>angles, polygons, regular polygons and polygons with reflection and/or rotation symmetries use the standard conventions for labelling and referring to the sides and angles of triangles draw diagrams from written description</p>	<p>$\times a \times a$, a/b in place of $\div b$, brackets simplify and manipulate algebraic expressions by collecting like terms and multiplying a single term over a bracket where appropriate, interpret simple expressions as functions with inputs and outputs substitute numerical values into formulae and expressions use conventional notation for priority of operations, including brackets Exploring FDP express one quantity as a fraction of another, where the fraction is less than 1 or greater than 1 Define percentage as 'number of parts per hundred'</p>		<p>Calculating space use standard units of measure and related concepts (length, area, volume/capacity) calculate perimeters of 2D shapes know and apply formulae to calculate area of triangles, parallelograms, trapezia <i>calculate surface area of cuboids</i> know and apply formulae to calculate volume of cuboids understand and use standard mathematical formulae</p>	<p>distributions of data sets from univariate empirical distributions through appropriate measures of central tendency (median, mean and mode) and spread (range)</p> <p>Assessment</p>
Key Curriculum Strands	Literacy Communication skills	Community contribution Effective contributor	Resilience Motivation Understanding emotions Self – expression	ICT Communication	Working with others Understanding laws	Rule of law Exercise Resilience
Criteria	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.
	Enquiry based Learning Maze making using Prime numbers. Relationships between food, can the process be inversed?	Enquiry based Learning Shape and rotation project (ART) Recognising symbols and map reading, forest schools.	Enquiry based Learning Investigation on input and output, look at factories.	Enquiry based Learning Design a bedroom or garden using shape and measure.	Enquiry based Learning Converting between FDP project and how we use these in real life i.e shopping.	Enquiry based Learning Data research project on area of interest.

	Cross Curricular Science Cooking	Cross Curricular Science Art Forest schools Geography	Cross Curricular Science Life Skills Food Technology	Cross Curricular Life Skills Science Art-ratio	Cross Curricular Science Food Tech	Cross Curricular Life skills Science.
	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High

Long Term Planning Year 8

Subject: Maths Year Group: 8						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number of weeks	7	7	6	6	5	7.5
National Curriculum Topic	Numbers and the Number System. Calculating.	Visualising and constructing Understanding risk Algebraic Proficiency	Exploring FDP Proportional reasoning Patterns	Investigating Angles Calculating FDP Solving Equations	Calculating Space Algebra	Understanding risk Presenting data Measuring Data
Odyssey Strands	<ul style="list-style-type: none"> use the concepts and vocabulary of prime numbers, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation theorem round numbers and measures to an appropriate degree of accuracy (e.g. to a specified number of decimal places or significant figures) interpret standard form $A \times 10^n$, where $1 \leq A < 10$ and n is an integer.	<ul style="list-style-type: none"> measure line segments and angles in geometric figures, including interpreting maps and scale drawings and use of bearings identify, describe and construct similar shapes, including on coordinate axes, by considering enlargement interpret plans and elevations of 3D shapes use scale factors, scale diagrams and maps relate relative expected frequencies to theoretical probability, using 	<ul style="list-style-type: none"> work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and $7/2$ or 0.375 or $3/8$) express the division of a quantity into two parts as a ratio; apply ratio to real contexts and problems (such as those involving conversion, comparison, scaling, mixing, concentrations) identify and work with fractions in ratio problems 	<ul style="list-style-type: none"> understand and use alternate and corresponding angles on parallel lines derive and use the sum of angles in a triangle (e.g. to deduce and use the angle sum in any polygon, and to derive properties of regular polygons) interpret fractions and percentages as operators work with percentages greater than 100% solve problems involving percentage change, including original value 	<ul style="list-style-type: none"> compare lengths, areas and volumes using ratio notation calculate perimeters of 2D shapes, including circles identify and apply circle definitions and properties, including: centre, radius, chord, diameter, circumference know the formulae: circumference of a circle = $2\pi r = \pi d$, area of a circle = πr^2 calculate areas of circles and composite shapes know and apply formulae to calculate	<ul style="list-style-type: none"> apply systematic listing strategies record describe and analyse the frequency of outcomes of probability experiments using frequency trees enumerate sets and combinations of sets systematically, using tables, grids and Venn diagrams construct theoretical possibility spaces for combined experiments with equally likely outcomes and use these to calculate

	<ul style="list-style-type: none"> • apply the four operations, including formal written methods, to integers, decimals and simple fractions (proper and improper), and mixed numbers – all both positive and negative • use conventional notation for priority of operations, including brackets, powers, roots and reciprocals. 	<p>appropriate language and the 0 - 1 probability scale</p> <ul style="list-style-type: none"> • record describe and analyse the frequency of outcomes of probability experiments using tables • construct theoretical possibility spaces for single experiments with equally likely outcomes and use these to calculate theoretical probabilities <p>apply the property that the probabilities of an exhaustive set of outcomes sum to one</p> <ul style="list-style-type: none"> • use and interpret algebraic notation, including: a^2b in place of $a \times a \times b$, coefficients written as fractions rather than as decimals • understand and use the concepts and vocabulary of factors • simplify and manipulate algebraic expressions by taking out common factors and simplifying expressions involving sums, products and powers, including the laws of indices • substitute numerical values into scientific formulae rearrange formulae to change the subject 	<ul style="list-style-type: none"> • understand and use proportion as equality of ratios • express a multiplicative relationship between two quantities as a ratio or a fraction • use compound units (such as speed, rates of pay, unit pricing) • change freely between compound units (e.g. speed, rates of pay, prices) in numerical contexts • relate ratios to fractions and to linear functions • generate terms of a sequence from either a term-to-term or a position-to-term rule • deduce expressions to calculate the nth term of linear sequences 	<p>problems, and simple interest including in financial mathematics</p> <ul style="list-style-type: none"> • calculate exactly with fractions • solve linear equations with the unknown on both sides of the equation • find approximate solutions to linear equations using a graph 	<p>volume of right prisms (including cylinders)</p> <ul style="list-style-type: none"> • plot graphs of equations that correspond to straight-line graphs in the coordinate plane • identify and interpret gradients and intercepts of linear functions graphically • recognise, sketch and interpret graphs of linear functions and simple quadratic functions <p>plot and interpret graphs and graphs of non-standard (<i>piece-wise linear</i>) functions in real contexts, to find approximate solutions to problems such as simple kinematic problems involving distance and speed</p>	<p>theoretical probabilities</p> <ul style="list-style-type: none"> • apply ideas of randomness, fairness and equally likely events to calculate expected outcomes of multiple future experiments • interpret, analyse and compare the distributions of data sets from univariate empirical distributions through appropriate graphical representation involving discrete, continuous and grouped data • use and interpret scatter graphs of bivariate data • recognise correlation • interpret, analyse and compare the distributions of data sets from univariate empirical distributions through appropriate measures of central tendency (median, mean, mode and modal class) and spread (range, including consideration of outliers) • apply statistics to describe a population
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Key Curriculum Strands	Literacy Communication skills	Community contribution Effective contributor	Resilience Motivation Understanding emotions Self - expression	ICT Communication	Working with others Understanding laws	Rule of law Exercise, resilience
Criteria	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths. Gym work	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.
	Enquiry based Learning Computer based interactive learning activities.	Enquiry based Learning Map reading Shape Investigation	Enquiry based Learning Practical food-based investigation. Active Maths	Enquiry based Learning Research project looking at % and how as consumers we use it.	Enquiry based Learning Circle investigation Active Maths	Enquiry based Learning Statistical research investigation on chosen topic. Practical Probability Investigation.
	Cross Curricular Science Life Skills	Cross Curricular Forest schools Art Science	Cross Curricular Science Food Technology Life Skills	Cross Curricular Life Skills Computing Science	Cross Curricular Art Science Forest Schools	Cross Curricular Life Skills Science
	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High

Long Term Planning Year 9

Subject: Maths Year Group: 9						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number of weeks	7	7	6	6	5	7.5
National Curriculum Topic	Calculating Visualising and constructing.	Algebraic Proficiency Proportional reasoning	Patterns, Solving equations and equalities Calculating Space	Conjecturing Algebra	Algebra continued Solving equations and inequalities 2	Understanding Risk Presentation of data

Odyssey Strands	<ul style="list-style-type: none"> calculate with roots, and with integer indices calculate with standard form $A \times 10^n$, where $1 \leq A < 10$ and n is an integer use inequality notation to specify simple error intervals due to truncation or rounding <p>apply and interpret limits of accuracy</p> <ul style="list-style-type: none"> use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle) use these to construct given figures and solve loci problems; know that the perpendicular distance from a point to a line is the shortest distance to the line <p>construct plans and elevations of 3D shapes</p>	<ul style="list-style-type: none"> understand and use the concepts and vocabulary of identities know the difference between an equation and an identity simplify and manipulate algebraic expressions by expanding products of two binomials and factorising quadratic expressions of the form $x^2 + bx + c$ argue mathematically to show algebraic expressions are equivalent, and use algebra to support and construct arguments <p>translate simple situations or procedures into algebraic expressions or formulae</p> <ul style="list-style-type: none"> solve problems involving direct and inverse proportion including graphical and algebraic representations apply the concepts of congruence and similarity, including the relationships between lengths in similar figures change freely between compound units (e.g. density, pressure) in numerical and algebraic contexts <p>use compound units such as density and pressure</p>	<ul style="list-style-type: none"> recognise and use Fibonacci type sequences, quadratic sequences understand and use the concepts and vocabulary of inequalities solve linear inequalities in one variable represent the solution set to an inequality on a number line identify and apply circle definitions and properties, including: tangent, arc, sector and segment calculate arc lengths, angles and areas of sectors of circles calculate surface area of right prisms (including cylinders) calculate exactly with multiples of π know the formulae for: Pythagoras' theorem, $a^2 + b^2 = c^2$, and apply it to find lengths in right-angled triangles in two dimensional figures 	<ul style="list-style-type: none"> use the basic congruence criteria for triangles (SSS, SAS, ASA, RHS) <p>apply angle facts, triangle congruence, similarity and properties of quadrilaterals to conjecture and derive results about angles and sides, including Pythagoras' Theorem and the fact that the base angles of an isosceles triangle are equal, and use known results to obtain simple proofs.</p> <ul style="list-style-type: none"> identify and interpret gradients and intercepts of linear functions algebraically use the form $y = mx + c$ to identify parallel lines find the equation of the line through two given points, or through one point with a given gradient interpret the gradient of a straight-line graph as a rate of change recognise, sketch and interpret graphs of quadratic functions 	<p>recognise, sketch and interpret graphs of simple cubic functions and the reciprocal function $y = 1/x$ with $x \neq 0$</p> <ul style="list-style-type: none"> plot and interpret graphs (including reciprocal graphs) and graphs of non-standard functions in real contexts, to find approximate solutions to problems such as simple kinematic problems involving distance, speed and acceleration. solve, in simple cases, two linear simultaneous equations in two variables algebraically derive an equation (or two simultaneous equations), solve the equation(s) and interpret the solution find approximate solutions to simultaneous equations using a graph 	<ul style="list-style-type: none"> calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions enumerate sets and combinations of sets systematically, using tree diagrams understand that empirical unbiased samples tend towards theoretical probability distributions, with increasing sample size. interpret and construct tables, charts and diagrams, including tables and line graphs for time series data and know their appropriate use draw estimated lines of best fit; make predictions. Know correlation does not indicate causation; interpolate and extrapolate apparent trends whilst knowing the dangers of so doing.

Key Curriculum Strands	Literacy Communication skills	Community contribution Effective contributor	Resilience Motivation Understanding emotions Self - expression	ICT Communication	Working with others Understanding laws	Rule of law Exercise, resilience
Criteria	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.
	Enquiry based Learning Explorative learning trial and error golf.	Enquiry based Learning Speed project in gym Measurement investigation	Enquiry based Learning Who was Fibonacci? Who was Pythagoras?	Enquiry based Learning Interactive computing project. Exploring triangles.	Enquiry based Learning Problem solving and setting.	Enquiry based Learning Research project on biased and un biased sources.
	Cross Curricular Science Life Skills PE	Cross Curricular PE Science Life Skills	Cross Curricular Art Science History.	Cross Curricular Science Art	Cross Curricular Science Life Skills	Cross Curricular Science Computing Life Skills
	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High

Long Term Planning Year 10

Subject: Maths Year Group: 9						
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number of weeks	7	7	6	6	5	7.5
National Curriculum Topic	Calculating Visualising and constructing.	Algebraic Proficiency Proportional reasoning	Patterns Solving equations and equalities Calculating Space	Conjecturing Algebra	Algebra continued Solving equations and inequalities 2	Understanding Risk Presentation of data
Odyssey Strands	<ul style="list-style-type: none"> calculate with roots, and with integer indices calculate with standard form $A \times 10^n$, where $1 \leq A < 10$ and n is an integer 	<ul style="list-style-type: none"> understand and use the concepts and vocabulary of identities know the difference between an equation and an identity 	<ul style="list-style-type: none"> recognise and use Fibonacci type sequences, quadratic sequences understand and use the concepts and vocabulary of inequalities 	<ul style="list-style-type: none"> use the basic congruence criteria for triangles (SSS, SAS, ASA, RHS) apply angle facts, triangle congruence, similarity and properties of quadrilaterals to 	<ul style="list-style-type: none"> recognise, sketch and interpret graphs of simple cubic functions and the reciprocal function $y = 1/x$ with $x \neq 0$ plot and interpret graphs (including 	<ul style="list-style-type: none"> calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and

	<ul style="list-style-type: none"> use inequality notation to specify simple error intervals due to truncation or rounding apply and interpret limits of accuracy use the standard ruler and compass constructions (perpendicular bisector of a line segment, constructing a perpendicular to a given line from/at a given point, bisecting a given angle) use these to construct given figures and solve loci problems; know that the perpendicular distance from a point to a line is the shortest distance to the line construct plans and elevations of 3D shapes 	<ul style="list-style-type: none"> simplify and manipulate algebraic expressions by expanding products of two binomials and factorising quadratic expressions of the form $x^2 + bx + c$ argue mathematically to show algebraic expressions are equivalent, and use algebra to support and construct arguments translate simple situations or procedures into algebraic expressions or formulae solve problems involving direct and inverse proportion including graphical and algebraic representations apply the concepts of congruence and similarity, including the relationships between lengths in similar figures change freely between compound units (e.g. density, pressure) in numerical and algebraic contexts use compound units such as density and pressure 	<ul style="list-style-type: none"> solve linear inequalities in one variable represent the solution set to an inequality on a number line identify and apply circle definitions and properties, including: tangent, arc, sector and segment calculate arc lengths, angles and areas of sectors of circles calculate surface area of right prisms (including cylinders) calculate exactly with multiples of π know the formulae for: Pythagoras' theorem, $a^2 + b^2 = c^2$, and apply it to find lengths in right-angled triangles in two dimensional figures 	<p>conjecture and derive results about angles and sides, including Pythagoras' Theorem and the fact that the base angles of an isosceles triangle are equal, and use known results to obtain simple proofs.</p> <ul style="list-style-type: none"> identify and interpret gradients and intercepts of linear functions algebraically use the form $y = mx + c$ to identify parallel lines find the equation of the line through two given points, or through one point with a given gradient interpret the gradient of a straight-line graph as a rate of change recognise, sketch and interpret graphs of quadratic functions 	<p>reciprocal graphs) and graphs of non-standard functions in real contexts, to find approximate solutions to problems such as simple kinematic problems involving distance, speed and acceleration.</p> <ul style="list-style-type: none"> solve, in simple cases, two linear simultaneous equations in two variables algebraically derive an equation (or two simultaneous equations), solve the equation(s) and interpret the solution find approximate solutions to simultaneous equations using a graph 	<p>know the underlying assumptions</p> <ul style="list-style-type: none"> enumerate sets and combinations of sets systematically, using tree diagrams understand that empirical unbiased samples tend towards theoretical probability distributions, with increasing sample size. interpret and construct tables, charts and diagrams, including tables and line graphs for time series data and know their appropriate use draw estimated lines of best fit; make predictions. Know correlation does not indicate causation; interpolate and extrapolate apparent trends whilst knowing the dangers of so doing.
Key Curriculum Strands	Literacy Communication skills	Community contribution Effective contributor	Resilience Motivation Understanding emotions Self - expression	ICT Communication	Working with others Understanding laws	Rule of law Exercise Resilience

Criteria	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.	Engagement Factors Interactive Media Board. Mathematical resources. Active Maths.
	Enquiry based Learning Explorative learning trial and error golf.	Enquiry based Learning Speed project in gym Measurement investigation	Enquiry based Learning Who was Fibonacci? Who was Pythagoras?	Enquiry based Learning Interactive computing project. Exploring triangles.	Enquiry based Learning Problem solving and setting.	Enquiry based Learning Research project on biased and un biased sources.
	Cross Curricular Science Life Skills PE	Cross Curricular PE Science Life Skills	Cross Curricular Art Science History	Cross Curricular Science Art	Cross Curricular Science Life Skills	Cross Curricular Science Computing Life Skills
	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High	Pupil led learning Extension Tasks Research Group activities Manga High

Long Term Planning Year 11						
Subject: Maths		Year Group: 11				
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Number of weeks	7	7	6	6	5	7.5
National Curriculum Topic	AQA Entry Level Certificate. Assessment prep and assessment completion (X8)	Properties of Shape Calculating	Entry Level Functional Skills Mathematics (Level 1) Using numbers and the number system - whole numbers, fractions, decimals and percentages. Using common measures, shape and space.	Entry Level Functional Skills Mathematics (Level 1) Handling information and data. Common misconceptions.	Exam Preparation	Exam Preparation

<p>Odyssey Strands</p>	<p>Properties of Number The four operations. Ratio. Money. Calendar and time. Measures. Geometry. Statistics.</p>	<p>Enlargement Enlargement through the centre. Trigonometry Scale factor. Estimate powers and roots of any given positive number Calculate with roots, and with integer and fractional indices Calculate exactly with surds Apply and interpret limits of accuracy, including upper and lower bounds.</p>	<p>Multiply and divide whole numbers and decimals by 10, 100, 1000 Use multiplication facts and make connections with division facts Use simple formulae expressed in words for one or two-step operations Calculate the squares of one-digit and two-digit numbers Follow the order of precedence of operators Read, write, order and compare common fractions and mixed numbers Find fractions of whole number quantities or measurements Read, write, order and compare decimals up to three decimal places Add, subtract, multiply and divide decimals up to two decimal places Approximate by rounding to a whole number or to one or two decimal places Read, write, order and compare percentages in whole numbers Convert between units of length, weight, capacity, money and time, in the same system</p>	<p>Represent discrete data in tables, diagrams and charts including pie charts, bar charts and line graphs Group discrete data and represent grouped data graphically Find the mean and range of a set of quantities Understand probability on a scale from 0 (impossible) to 1 (certain) and use probabilities to compare the likelihood of events Use equally likely outcomes to find the probabilities of simple events and express them as fractions. Miscounting or misunderstanding the value the position of the numeral gives it Misplacing the value a digit represents in large numbers which have "0" in the middle, e.g. considering 10148 to be one thousand one hundred and forty-eight</p>	<p>Consolidation of knowledge learnt and preparation for exams.</p>	<p>Consolidation of knowledge learnt and preparation for exams.</p>
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