



ACLE ACADEMY GCSE 9-1
2 YEAR FOUNDATION
MATHS CURRICULUM
MAP AND ROUTE MAP



GCSE 9-1 FOUNDATION MATHS CURRICULUM MAP AND ROUTE MAP

- This Scheme of Learning (SOL) shows the progression of our 2 year GCSE course which follows the AQA 2 year GCSE route map.
- The LAST presentation under this scheme will be for year 10 in the 2019-20 academic year.
- Please note, dates for presentation are approximate and are subject to change dependent on the needs of the students in any given class. However, all content will be covered appropriately.
- On the next slide is a table showing where tracking point assessments will take place. These will normally consist of a single GCSE paper except for year 11 PPE exams and end of year 10 exams, which will consist of a whole set of 3 papers.
- There will also be topic by topic pre-checks and progress check assessments.

**GCSE MATHS ASSESSMENT**

Assessment	Year	Exam Start Dates (approx)	Format
Tracking 1	10 and 11	28/10/2019	1 GCSE paper
Year 11 PPE 1	11	04/11/2019	3 GCSE papers
Tracking 2	10 and 11	9/2/2020	1 GCSE paper
Year 11 PPE 2	11	24/02/2020	3 GCSE papers
Tracking 3	10	15/06/2020	1 GCSE paper
Final Exams	11	May-20	3 GCSE papers
End of Year Exams	10	Jun-20	3 GCSE papers

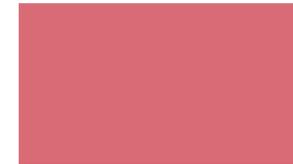
GCSE Mathematics 2 year Foundation Tier Route Map (First assessment in 2017 specification)



Number



Algebra



Ratio, proportion and
rates of change



Geometry and
measures



Probability



Statistics

GCSE Mathematics 2 year Foundation Tier Routemap (2015 specification)

Year 10

SEPTEMBER				OCTOBER				NOVEMBER	
<u>Wk1</u>	<u>Wk2</u>	<u>Wk3</u>	<u>Wk4</u>	<u>Wk5</u>	<u>Wk6</u>	<u>Wk7</u>	<u>Wk8</u>	<u>Wk9</u>	<u>Wk10</u>
Angles	Scale Diagrams and Bearings	Basic Number	Factors and Multiples	Basic Algebra	Basic Fractions	Coordinates and Linear Graphs	Holiday	Basic Decimals	Rounding
NOVEMBER			DECEMBER				JANUARY		
<u>Wk11</u>	<u>Wk12</u>	<u>Wk13</u>	<u>Wk14</u>	<u>Wk15</u>	<u>Wk16</u>	<u>Wk17</u>	<u>Wk18</u>	<u>Wk19</u>	<u>Wk20</u>
Collecting and Representing Data		Sequences	Year 10 Examinations and Revision	Year 10 Examinations and Revision	Holiday	Holiday	Basic Percentages	Perimeter and Area	
JANUARY		FEBRUARY				MARCH			
<u>Wk21</u>	<u>Wk22</u>	<u>Wk23</u>	<u>Wk24</u>	<u>Wk25</u>	<u>Wk26</u>	<u>Wk27</u>	<u>Wk28</u>	<u>Wk29</u>	<u>Wk30</u>
Circumference and Area		Real Life Graphs	Holiday	Ratio and Proportion	Properties of Polygons	Equations	Indices	Standard Form	
APRIL				MAY				JUNE	
<u>Wk31</u>	<u>Wk32</u>	<u>Wk33</u>	<u>Wk34</u>	<u>Wk35</u>	<u>Wk36</u>	<u>Wk37</u>	<u>Wk38</u>	<u>Wk39</u>	<u>Wk40</u>
Holiday	Holiday	Basic Probability	Transformations	Congruence and Similarity	2D Representations of 3D Shapes	Holiday	Calculating with Percentages	Measures	
JUNE			JULY						
<u>Wk41</u>	<u>Wk42</u>	<u>Wk43</u>	<u>Wk44</u>	<u>Wk45</u>					
Summer Examinations and Revision	Summer Examinations and Revision	Statistical Measures	Constructions and Loci						

GCSE Mathematics 2 year Foundation Tier Routemap (2015 specification)

Year 11

SEPTEMBER				OCTOBER				NOVEMBER	
Wk1	Wk2	Wk3	Wk4	Wk5	Wk6	Wk7	Wk8	Wk9	Wk10
Probability		Volume		Algebra: Quadratics, Rearranging Formulae and Identities		Scatter Graphs	Holiday	Inequalities	Pythagoras' Theorem
NOVEMBER			DECEMBER				JANUARY		
Wk11	Wk12	Wk13	Wk14	Wk15	Wk16	Wk17	Wk18	Wk19	Wk20
Simultaneous Equations		Algebra and Graphs	Mock Examinations and Revision	Mock Examinations and Revision	Holiday	Holiday	Algebra and Graphs (continued)	Sketching graphs	
JANUARY		FEBRUARY				MARCH			
Wk21	Wk22	Wk23	Wk24	Wk25	Wk26	Wk27	Wk28	Wk29	Wk30
Direct and Inverse Proportion		Holiday	Trigonometry		Solving Quadratic Equations		Quadratic Graphs		Holiday
APRIL				MAY				JUNE	
Wk31	Wk32	Wk33	Wk34	Wk35	Wk36	Wk37	Wk38	Wk39	Wk40
Holiday	Growth and Decay	Vectors		REVISION			Holiday	REVISION	
JUNE		JULY							
Wk41	Wk42	Wk43	Wk44	Wk45					
June Examinations	June Examinations								

	Specification content:	Specification notes:
G1	<ul style="list-style-type: none"> ➤ Use conventional terms and notations: points, lines, vertices, edges, planes, parallel lines, perpendicular lines, right 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 descriptions 	
G3	<ul style="list-style-type: none"> ➤ Apply the properties of: <ul style="list-style-type: none"> – angles at a point – angles at a point on a straight line – vertically opposite angles ➤ Understand and use alternate and corresponding angles on parallel lines 	<ul style="list-style-type: none"> ➤ colloquial terms such as Z angles are not acceptable and should not be used

Scale diagrams and bearings

	Specification content:	Specification Notes
R2	<ul style="list-style-type: none">➤ Use scale factors, scale diagrams and maps	<ul style="list-style-type: none">➤ including geometrical problems
G15	<ul style="list-style-type: none">➤ Measure line segments and angles in geometric figures, including interpreting maps and scale drawings and use of bearings	<ul style="list-style-type: none">➤ including the eight compass point bearings and three-figure bearings

	Specification content:	Specification notes:
N1	<ul style="list-style-type: none"> ➤ Order positive and negative integers ➤ Use the symbols =, ≠, <, >, ≤, ≥ 	<ul style="list-style-type: none"> ➤ including use of a number line. ➤ know the conventions of an open circle on a number line for a strict inequality and a closed circle for an included boundary
N2	<ul style="list-style-type: none"> ➤ Apply the four operations, including formal written methods, to integers – both positive and negative ➤ Understand and use place value (e.g. when working with very large or very small numbers, and when calculating with decimals) 	<ul style="list-style-type: none"> ➤ including questions set in context ➤ knowledge and understanding of terms used in household finance, for example profit, loss, cost price, selling price, debit, credit, balance, income tax, VAT and interest rate
N3	<ul style="list-style-type: none"> ➤ Recognise and use relationships between operations including inverse operations (e.g. cancellation to simplify calculations and expressions) 	
N14	<ul style="list-style-type: none"> ➤ Estimate answers ➤ Check calculations using approximation and estimation, including answers obtained using technology 	<ul style="list-style-type: none"> ➤ including evaluation of results obtained

Factors and Multiples

	Specification content:	Specification notes:
N4	<ul style="list-style-type: none">➤ Use the concepts and vocabulary of prime numbers, factors (divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation, and the unique factorisation theorem	<ul style="list-style-type: none">➤ prime factor decomposition including product of prime factors written in index form
N5	<ul style="list-style-type: none">➤ Apply systematic listing strategies	<ul style="list-style-type: none">➤ including using lists, tables and diagrams

	Specification content:	Specification notes:
A1	<ul style="list-style-type: none"> ➤ Use and interpret algebraic notation, including: <ul style="list-style-type: none"> - 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^2b in place of $a \times a \times b$ - $\frac{a}{b}$ in place of $a \div b$ - coefficients written as fractions rather than decimals - brackets 	<ul style="list-style-type: none"> ➤ it is expected that answers will be given in their simplest form without an explicit instruction given in the question
N3	<ul style="list-style-type: none"> ➤ Use conventional notation for priority of operations, including brackets, powers, roots and reciprocals 	
A3	<ul style="list-style-type: none"> ➤ Understand and use the concepts and vocabulary of expressions, equations, formulae, <u>identities</u>, inequalities, terms and factors 	<ul style="list-style-type: none"> ➤ this will be implicitly and explicitly assessed
A4	<ul style="list-style-type: none"> ➤ Simplify and manipulate algebraic expressions by: <ul style="list-style-type: none"> - collecting like terms - multiplying a single term over a bracket - taking out common factors 	

	Specification content:	Specification notes:
N1	<ul style="list-style-type: none">➤ Order positive and negative fractions	
N2	<ul style="list-style-type: none">➤ Apply the four operations, including formal written methods, to simple fractions (proper and improper) and mixed numbers - both positive and negative	
N8	<ul style="list-style-type: none">➤ Calculate exactly with fractions	

Coordinates and Linear Graphs

	Specification content:	Specification notes:
A8	<ul style="list-style-type: none"> ➤ Work with coordinates in all four quadrants 	
G11	<ul style="list-style-type: none"> ➤ Solve geometrical problems on coordinate axes 	
A9	<ul style="list-style-type: none"> ➤ Plot graphs of equations that correspond to straight-line graphs in the coordinate plane. ➤ <u>Use the form $y = mx + c$ to identify parallel lines</u> ➤ <u>Find the equation of the line through two given points, or through one point with a given gradient</u> 	
A10	<ul style="list-style-type: none"> ➤ Identify and interpret gradients and intercepts of linear functions graphically and algebraically 	

	Specification content:	Specification notes
N1	<ul style="list-style-type: none"> ➤ Order positive and negative decimals 	
N2	<ul style="list-style-type: none"> ➤ Apply the four operations, including formal written methods, to decimals – both positive and negative ➤ Understand and use place value (e.g. when calculating with decimals) 	
N10	<ul style="list-style-type: none"> ➤ Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and $\frac{7}{2}$ or 0.375 and $\frac{3}{8}$) 	<ul style="list-style-type: none"> ➤ including ordering

	Specification content:	Specification notes:
N15	<ul style="list-style-type: none"> ➤ Round numbers and measures to an appropriate degree of accuracy (eg to a specified number of decimal places or significant figures) ➤ <u>Use inequality notation to specify simple error intervals due to truncation or rounding</u> 	<ul style="list-style-type: none"> ➤ including appropriate rounding for questions set in context ➤ students should know not to round values during intermediate steps of a calculation
N16	<ul style="list-style-type: none"> ➤ <u>Apply and interpret limits of accuracy</u> 	

Collecting and Representing Data

	Specification content:	Specification notes:
S2	<ul style="list-style-type: none">➤ Interpret and construct tables, charts and diagrams, including:<ul style="list-style-type: none">– frequency tables, bar charts, pie charts and pictograms for categorical data– vertical line charts for ungrouped discrete numerical data– <u>tables and line graphs for time series data</u>➤ know their appropriate use	<ul style="list-style-type: none">➤ including choosing suitable statistical diagrams
S4	<ul style="list-style-type: none">➤ Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through appropriate graphical representation involving discrete, continuous and grouped data	<ul style="list-style-type: none">➤ know and understand the terms primary data, secondary data, discrete data and continuous data

	Specification content:	Specification notes:
A23	<ul style="list-style-type: none"> ➤ Generate terms of a sequence from either a term-to-term or a position-to-term rule 	<ul style="list-style-type: none"> ➤ including from patterns and diagrams
A24	<ul style="list-style-type: none"> ➤ Recognise and use: <ul style="list-style-type: none"> – sequences of triangular, square and cube numbers – simple arithmetic progression, – <u>Fibonacci-type sequences,</u> – <u>quadratic sequences,</u> – <u>and simple geometric progressions (r^n where n is an integer and r is a rational number > 0)</u> 	<ul style="list-style-type: none"> ➤ other recursive sequences will be defined in the question
A25	<ul style="list-style-type: none"> ➤ Deduce expressions to calculate the nth term of a linear sequence 	

	Specification content:	Specification notes:
R9	<ul style="list-style-type: none"> ➤ Define percentage as ‘number of parts per hundred’ ➤ Interpret percentages and percentage changes as a fraction or a decimal and interpret these multiplicatively ➤ Express one quantity as a percentage of another ➤ Compare two quantities using percentages ➤ Work with percentages greater than 100% 	
N12	<ul style="list-style-type: none"> ➤ Interpret fractions and percentages as operators 	<ul style="list-style-type: none"> ➤ including interpreting percentage problems using a multiplier

	Specification content:	Specification notes:
G12	<ul style="list-style-type: none">➤ Identify properties of the faces, surfaces, edges and vertices of: cubes, cuboids, prisms, cylinders, pyramids, cones and spheres	
G17	<ul style="list-style-type: none">➤ Calculate the perimeters of 2D shapes and composite shapes➤ Calculate the area of composite shapes➤ <u>Find the surface area of pyramids and composite solids</u>	
G16	<ul style="list-style-type: none">➤ Know and apply formulae to calculate area of:<ul style="list-style-type: none">– triangles– parallelograms– trapezia	

	Specification content:	Specification notes:
G9	<ul style="list-style-type: none"> ➤ Identify and apply circle definitions and properties, including centre, radius, chord, diameter, circumference, <u>tangent, arc, sector and segment</u> 	
G17	<ul style="list-style-type: none"> ➤ Know and use the formulae <ul style="list-style-type: none"> – Circumference of a circle = $2\pi r = \pi d$ – Area of a circle = πr^2 ➤ Calculate perimeters of 2D shapes including circles and composite shapes ➤ Calculate areas of circles and composite shapes ➤ <u>Calculate surface area of spheres, cones and composite solids</u> 	<ul style="list-style-type: none"> ➤ including frustums ➤ Solutions in terms of π may be asked for
G18	<ul style="list-style-type: none"> ➤ <u>Calculate arc lengths, angles and areas of sectors of circles</u> 	
N8	<ul style="list-style-type: none"> ➤ <u>Calculate exactly with multiples of π</u> 	

	Specification content:	Specification notes:
A14	<ul style="list-style-type: none">➤ Plot and interpret graphs (<u>including reciprocal graphs</u>) 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	<ul style="list-style-type: none">➤ including problems requiring a graphical solution
R14	<ul style="list-style-type: none">➤ <u>Interpret the gradient of a straight-line graph as a rate of change</u>	

	Specification content:	Specification notes:
N11	<ul style="list-style-type: none"> ➤ Identify and work with fractions in ratio problems 	
R3	<ul style="list-style-type: none"> ➤ Express one quantity as a fraction of another, where the fraction is less than 1 or greater than 1 	
R4	<ul style="list-style-type: none"> ➤ Use ratio notation, including reduction to simplest form 	
R5	<ul style="list-style-type: none"> ➤ 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 ➤ Apply ratio to real contexts and problems (such as those involving conversion, comparison, scaling, mixing and concentrations) 	<ul style="list-style-type: none"> ➤ including better value or best-buy problems
R6	<ul style="list-style-type: none"> ➤ Express a multiplicative relationship between two quantities as a ratio or a fraction 	
R7	<ul style="list-style-type: none"> ➤ Understand and use proportion as equality of ratios 	
R8	<ul style="list-style-type: none"> ➤ Relate ratios to fractions and to linear functions 	

	Specification content:	Specification notes
G3	<ul style="list-style-type: none"> ➤ Derive and use the sum of angles in a triangle (eg to deduce and use the angle sum in any polygon, and to derive properties of regular polygons) 	
G4	<ul style="list-style-type: none"> ➤ Derive and apply the properties and definitions of: <ul style="list-style-type: none"> – special types of quadrilaterals, including square, rectangle, parallelogram, trapezium, kite and rhombus – And triangles and other plane figures using appropriate language 	<ul style="list-style-type: none"> ➤ including knowing names and properties of isosceles, equilateral, scalene, right-angled, acute-angled, obtuse-angled triangles. ➤ including knowing names and using the polygons: pentagon, hexagon, octagon and decagon

	Specification content:	Specification notes:
A2	<ul style="list-style-type: none">➤ Substitute numerical values into formulae and expressions, including scientific formulae	<ul style="list-style-type: none">➤ unfamiliar formulae will be given in the question
A17	<ul style="list-style-type: none">➤ Solve linear equations in one unknown algebraically <u>including those with the unknown on both sides of the equation</u>	<ul style="list-style-type: none">➤ including use of brackets

	Specification content:	Specification notes:
N6	<ul style="list-style-type: none"> ➤ Use positive integer powers and associated real roots (square, cube and higher) ➤ Recognise powers of 2, 3, 4, 5 	<ul style="list-style-type: none"> ➤ including square numbers up to 15×15 ➤ know that $1000 = 10^3$ and 1 million = 10^6
N7	<ul style="list-style-type: none"> ➤ <u>Calculate with roots and with integer indices</u> 	

	Specification content:	Specification notes:
N2	<ul style="list-style-type: none"> ➤ Understand and use place value (eg when working with very large or very small numbers) 	
N9	<ul style="list-style-type: none"> ➤ Calculate with and interpret standard form $A \times 10^n$ where $1 \leq A < 10$ and n is an integer 	<ul style="list-style-type: none"> ➤ with and without a calculator ➤ interpret calculator displays

	Specification content:	Specification notes:
P1	<ul style="list-style-type: none">➤ Record, describe and analyse the frequency of outcomes of probability experiments using tables and frequency trees	<ul style="list-style-type: none">➤ Probabilities should be written as fractions, decimals or percentages
P4	<ul style="list-style-type: none">➤ Apply the property that the probabilities of an exhaustive set of outcomes sum to 1➤ Apply the property that the probabilities of an exhaustive set of mutually exclusive events sum to one	
P7	<ul style="list-style-type: none">➤ Construct theoretical possibility spaces for single and combined experiments with equally likely outcomes and use these to calculate theoretical probabilities	

	Specification content:	Specification notes:
G7	<ul style="list-style-type: none">➤ Identify, describe and construct congruent and similar shapes, on coordinate axes, by considering rotation, reflection, translation and enlargement (<u>including fractional scale factors</u>)	
G24	<ul style="list-style-type: none">➤ Describe translations as 2D vectors	

Congruence and Similarity

	Specification content:	Specification notes:
G5	<p>➤ <u>Use the basic congruence criteria for triangles (SSS, SAS, ASA, RHS)</u></p>	
G6	<p>➤ <u>Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to conjecture and derive results about angles and sides, including the fact that the base angles of an isosceles triangle are equal, and use known results to obtain simple proofs</u></p>	
G19	<p>➤ <u>Apply and use the concepts of congruence and similarity, including the relationships between lengths in similar figures</u></p>	

2D Representations of 3D Shapes

	Specification content:	Specification notes:
G13	<ul style="list-style-type: none"> ➤ <u>Construct and interpret plans and elevations of 3D shapes</u> 	

Calculating with Percentages

	Specification content:	Specification notes:
R9	<ul style="list-style-type: none"> ➤ Solve problems involving percentage change, including : <ul style="list-style-type: none"> – percentage increase/decrease problems – original value problems – simple interest, including in financial mathematics 	<ul style="list-style-type: none"> – problems may be set in context – using a multiplier

Measures

	Specification content:	Specification notes:
N16	<ul style="list-style-type: none"> ➤ <u>Apply and interpret limits of accuracy</u> 	
G14	<ul style="list-style-type: none"> ➤ Use standard units of measure and related concepts (length, area, volume/capacity, mass, time, money etc.) 	
N13	<ul style="list-style-type: none"> ➤ Use standard units of mass, length, time, money and other measures (including standard compound measures) using decimal quantities where appropriate 	<ul style="list-style-type: none"> ➤ know and use metric conversion factors for length, area, volume and capacity. ➤ imperial / metric conversions will be given in the question
R1	<ul style="list-style-type: none"> ➤ Change freely between related standard units (eg time, length, area, volume/capacity, mass) and compound units (eg speed, rates of pay, prices, <u>density</u>, <u>pressure</u>) in numerical <u>and algebraic</u> contexts 	
R11	<ul style="list-style-type: none"> ➤ Use compound units such as speed, rates of pay, unit pricing, <u>density and pressure</u> 	<ul style="list-style-type: none"> ➤ including making comparisons

	Specification content:	Specification notes:
S4	<ul style="list-style-type: none"> ➤ Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through : <ul style="list-style-type: none"> – appropriate measures of central tendency (median, mean, mode and modal class) – spread (range, including consideration of outliers) 	
S5	<ul style="list-style-type: none"> ➤ Apply statistics to describe a population 	
S1	<ul style="list-style-type: none"> ➤ <u>Infer properties of populations or distributions from a sample, whilst knowing the limitations of sampling</u> 	

	Specification content:	Specification notes:
G2	<ul style="list-style-type: none">➤ <u>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)</u>➤ <u>Know that the perpendicular distance from a point to a line is the shortest distance to the line</u>➤ <u>Use these to construct given figures and solve loci problems</u>	<ul style="list-style-type: none">➤ including constructing an angle of 60°

Probability

	Specification content:	Specification notes:
P2	<ul style="list-style-type: none"> ➤ Apply ideas of randomness, fairness and equally likely events to calculate expected outcomes or multiple future experiments 	
P3	<ul style="list-style-type: none"> ➤ Relate relative expected frequencies to theoretical probability, using appropriate language and the 0 to 1 probability scale 	
P5	<ul style="list-style-type: none"> ➤ <u>Understand that empirical unbiased samples tend towards theoretical probability distributions with increasing sample size</u> 	
P6	<ul style="list-style-type: none"> ➤ Enumerate sets and combinations of sets systematically using tables, grids, Venn diagrams <u>and tree diagrams</u> 	
P8	<ul style="list-style-type: none"> ➤ <u>Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions</u> 	<ul style="list-style-type: none"> ➤ <u>including knowing when to add and when to multiply two or more probabilities</u>

Volume

	Specification content:	Specification notes:
R12	<ul style="list-style-type: none"> ➤ Compare lengths, areas and volumes using ratio notation ➤ Scale factors ➤ <u>Make links to similarity</u> 	
G16	<ul style="list-style-type: none"> ➤ Know and apply formulae to calculate the volume of cuboids and other right prisms (including cylinders) 	
G17	<ul style="list-style-type: none"> ➤ <u>Calculate the volume of spheres, pyramids, cones and composite solids</u> 	
N8	<ul style="list-style-type: none"> ➤ <u>Calculate exactly with multiples of π</u> 	

Algebra: Quadratics, Rearranging Formulae and Identities

	Specification content:	Specification notes:
A4	<ul style="list-style-type: none"> ➤ Simplify and manipulate algebraic expressions (<u>including those involving surds</u>) by: <ul style="list-style-type: none"> – simplifying expressions involving sums, products and powers, including the laws of indices – <u>expanding products of two binomials</u> – <u>factorising quadratic expressions of the form $x^2 + bx + c$ including the difference of two squares</u> 	
A5	<ul style="list-style-type: none"> ➤ Understand and use standard mathematical formulae ➤ Rearrange formulae to change the subject 	<ul style="list-style-type: none"> ➤ including use of formulae from other subjects in words and using symbols
A6	<ul style="list-style-type: none"> ➤ <u>Know the difference between an equation and an identity</u> ➤ <u>Argue mathematically to show algebraic expressions are equivalent, and use algebra to support and construct arguments</u> 	
A7	<ul style="list-style-type: none"> ➤ Where appropriate, interpret simple expressions as functions with inputs and outputs 	

	Specification content:	Specification notes:
S6	<ul style="list-style-type: none">➤ Use and interpret scatter graphs of bivariate data➤ Recognise correlation <u>and know that it does not indicate causation</u>➤ <u>Draw estimated lines of best fit</u>➤ <u>Make predictions</u>➤ <u>Interpolate and extrapolate apparent trends whilst knowing the dangers of doing so</u>	<ul style="list-style-type: none">➤ know and understand the terms positive correlation, negative correlation, no correlation, weak correlation and strong correlation

	Specification content:	Specification notes:
A22	<ul style="list-style-type: none">➤ <u>Solve linear inequalities in one variable</u>➤ <u>Represent the solution set on a number line</u>	<ul style="list-style-type: none">➤ know the conventions of an open circle on a number line for a strict inequality and a closed circle for an included boundary

Pythagoras Theorem

	Specification content:	Specification notes:
G20	<ul style="list-style-type: none">➤ <u>Know the formula for Pythagoras' Theorem $a^2 + b^2 = c^2$</u>➤ <u>Apply it to find lengths in right angled triangles in two dimensional figures</u>	

Simultaneous Equations

	Specification content:	Specification notes:
A19	<ul style="list-style-type: none">➤ <u>Solve two simultaneous equations in two variables (linear/linear) algebraically</u>➤ <u>Find approximate solutions using a graph</u>	
A21	<ul style="list-style-type: none">➤ <u>Translate simple situations or procedures into algebraic expressions or formulae</u>➤ <u>Derive two simultaneous equations, solve the equations and interpret the solution</u>	<ul style="list-style-type: none">➤ including the solution of geometrical problems and problems set in context

	Specification content:	Specification notes:
A17	<ul style="list-style-type: none">➤ Solve linear equations in one unknown algebraically➤ <u>Including those with the unknown on both sides of the equation</u>➤ Find approximate solutions using a graph	<ul style="list-style-type: none">➤ including use of brackets
A21	<ul style="list-style-type: none">➤ <u>Translate simple situations or procedures into algebraic expressions or formulae</u>➤ <u>Derive an equation (or two simultaneous equations), solve the equation(s) and interpret the solution</u>	<ul style="list-style-type: none">➤ including the solution of geometrical problems and problems set in context

	Specification content:	Specification notes:
A12	<ul style="list-style-type: none">➤ Recognise, sketch and interpret graphs of linear functions, quadratic functions➤ <u>Simple cubic functions and the reciprocal function $y = \frac{1}{x}$ with $x \neq 0$</u>	

Direct and Inverse Proportion

	Specification content:	Specification notes:
R10	<ul style="list-style-type: none">➤ Solve problems involving direct and inverse proportion, including graphical and algebraic representations	
R13	<ul style="list-style-type: none">➤ <u>Understand that X is inversely proportional to Y is equivalent to X is proportional to $\frac{1}{Y}$</u>➤ <u>Interpret equations that describe direct and inverse proportion</u>	
R14	<ul style="list-style-type: none">➤ <u>Recognise and interpret graphs that illustrate direct and inverse proportion</u>	

	Specification content:	Specification notes:
G20	<ul style="list-style-type: none"> ➤ <u>Know and use the trigonometric ratios</u> $\sin \theta = \frac{\textit{opposite}}{\textit{hypotenuse}}, \cos \theta = \frac{\textit{adjacent}}{\textit{hypotenuse}}, \tan \theta = \frac{\textit{opposite}}{\textit{adjacent}}$ <hr/> <ul style="list-style-type: none"> ➤ <u>Apply them to find angles and lengths in right-angled triangles in two dimensional figures</u> 	
G21	<ul style="list-style-type: none"> ➤ <u>Know the exact values of $\sin\theta$ and $\cos\theta$ for $\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ$ and 90°</u> ➤ <u>Know the exact value of $\tan\theta$ for $\theta = 0^\circ, 30^\circ, 45^\circ, 60^\circ$</u> 	
R12	<ul style="list-style-type: none"> ➤ Compare lengths using ratio notation ➤ <u>Make links to trigonometric ratios</u> 	

Solving Quadratic Equations

	Specification content:	Specification notes:
A18	<ul style="list-style-type: none">➤ <u>Solve quadratic equations algebraically by factorising</u>➤ <u>Find approximate solutions using a graph</u>	

Quadratic Graphs

	Specification content:	Specification notes:
A12	<ul style="list-style-type: none"> ➤ Recognise, sketch and interpret graphs of quadratic functions 	
A11	<ul style="list-style-type: none"> ➤ <u>Identify and interpret roots, intercepts and turning points of quadratic functions graphically</u> ➤ <u>Deduce roots algebraically</u> 	<ul style="list-style-type: none"> ➤ <u>including the symmetrical property of a quadratic</u>

	Specification content:	Specification notes:
R16	<p>➤ <u>Set up, solve and interpret the answers in growth and decay problems, including compound interest</u></p>	

	Specification content:	Specification notes:
G25	<p>➤ <u>Apply addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representation of vectors</u></p>	