Queen Elizabeth High School

Scheme of Work	SUBJECT: Mathematics		YEAR: 10 Foundation ~ Autumn term 1	
	Algebra recap and extension	**Measures**	**Standard form**	**Calculating with percentages**
Key concepts	1) Understand and use the concepts and vocabulary of expressions, equations, formulae, identities, inequalities, terms and factors (review of Year 9) 2) Simplify and manipulate algebraic expressions (including those involving surds) by: • collecting like terms • multiplying a single term over a bracket • taking out common factors	1) Use standard units of measure and related concepts (length, area, volume / capacity, mass, time, money etc) 2) Use standard units of mass, length, time, money and other measures (including standard compound measures) using decimal quantities where appropriate 3) Change freely between related standard units (e.g. time, length, area, volume / capacity, mass) and compound units (e.g. speed,	1) Understand and use place value (e.g. when working with very large or very small numbers) 2) Convert number between standard form and ordinary form 3) Calculate with and interpret standard form $A \times 10^n$ where $1 \leqslant A < 10$ and `n` is an integer • with and without a calculator • interpret calculator displays	Solve problems involving percentage change, including: 1) Percentage increase / decrease problems 2) Original value problems 3) Simple interest, including in financial mathematics

	3) Deduce expressions to calculate the nth term of a linear sequence 4) Solve linear equations in one unknown algebraically including those with the unknown on both sides of the equation (review of Year 9) including use of brackets	rates of pay, prices, density, pressure) in numerical and algebraic contexts 4) Use compound units such as speed, rates of pay, unit pricing, density and pressure 5) Apply and interpret limits of accuracy		
Themes	**Recap algebraic methods covered in year 9**	**Recap metric units of measure and converting between**	**Converting between and calculating with numbers written in standard form**	**More complex percentages**
Challenge	2) Simplify expressions involving powers 2) Expand over a single bracket involving powers 2) Expand and simplify several brackets 2) Creating expressions by expanding and simplifying	3) Convert between mm and m, cm and km, mm and km, grams to tonnes etc 3) Convert between units of area and volume 3) Convert between compound units of measure, i.e. speed, density and pressure 4) Use the triangles to help remember for formulas for compound measures	2) Order numbers written in standard index form 2) Apply and interpret standard form in everyday situations 2) Convert numbers such as, 23×10^3 into standard form 3) Understand there is no short cut method for adding and subtracting numbers in standard form	1) Recap multiplier method for calculating percentage of a quantity, focusing on calculator methods 1) Calculate percentage change using the multiplier method. 2) Real life situations involving reverse percentages 3) Introduction to compound interest, by calculating

	brackets, such as perimeter of 2D shapes 2) Factorise expressions involving powers and indices 2) Understand the link between expanding brackets and factorising 3) Use nth term of linear sequences to solve multi-step problems 4) Solve equations with unknowns and brackets on both sides 4) Create equations to solve worded and multi-step problems. Make links with other areas of mathematics, such as area and angles	5) Identify upper and lower bounds when values have been rounded to decimal places and significant figures. 5) Identify error intervals, written using inequalities	3) Students make links with rules of indices for multiplying and dividing numbers written in standard form 3) Substitute numbers written in standard form into mathematical formulae and formulas from other subject areas 3) Complete multi-step questions involving standard form. 3) Link to other areas of maths, such as, compound measures, area and volume	successive years (not using the formula) Multi-step questions which can use more than 1 type of percentage questions and link into other areas of mathematics.
Support	2) Recap over the algebraic notation	1) Identify appropriate units for measuring length, mass and capacity of everyday objects.	1) Recap power notation	1) Recap methods for calculating percentage of a

	2) Simplify simple expressions involving only one letter 2) Multiply a single term over a bracket simple cases, no powers 2) Recapping identifying the highest common factor of 2 or more terms 3) understand what terms of a sequence are 3) Identify the term to term rule of linear sequence 4) Recap and use inverse operations 4) Solve one step equations	2) Estimating measurements of length, mass and capacity of everyday objects 2) Reading scales 3) Know and apply the conversions for adjacent metric units 3) Convert between units of time 4) Focus on using the triangle for identifying formulae for speed, distance and time 5) Identify the largest and smallest numbers that will round to a given value	1) Recap powers of 10 2) Convert between ordinary and standard form for numbers greater than 1 where 'A' is rounded to 1 sf 2) Convert between ordinary and standard form for numbers less than 1 where 'A' is rounded to 1 sf 3) Add and subtract numbers in standard form using the place value grid to help 3) Know how to enter standard form numbers into a calculator 3) Interpret calculator displays when answer is in standard form.	quantity, focusing on calculator methods 1) Calculate percentage increase and decrease by working out the percentage given then adding or subtracting from original amount 2) Recap methods for finding 10% or 1% and use this to find original amount, reinforcing that original is always 100% 3) Ensure students understand the concept of interest
Literacy focus	Key words: Expressions, equations, formulae, identities, inequalities, terms, factors,	Key words: Length, mass, capacity, area, volume, compound, Measures, millimetres,	Key words: Standard form, ordinary form, convert, power, index	Key words: Percentage, increase, decrease, multiplier,

	simplify, expand, like terms, brackets, unknown, balance, factorise, linear, sequence, nth term,	centimetres, metres, kilometres, grams, kilograms, litres, centilitres, litres, speed, time, distance, density, pressure, weight, error interval, bounds		fraction, interest, simple, compound, original
Cross-curricular links		Design and technology, Art, Science, Geography,	Science, Geography, Business	Science, Geography, Business
SMSC & MBV				
ASSESSMENTS	Assessment 1 ~ October	Assessment 1 ~ October	Assessment 1 ~ October	Assessment 1 ~ October
Out of school learning	Weekly homework based on work covered in class	Weekly homework based on work covered in class	Weekly homework based on work covered in class	Weekly homework based on work covered in class

Queen Elizabeth High School

Scheme of Work	SUBJECT: Mathematics		YEAR: 10 Foundation ~ Autumn term 2	
	Statistical measures	**Indices**	**Construction and loci**	**Graphs recap and extension**
Key concepts	Interpret, analyse and compare the distributions of data sets from univariate empirical distributions through: 1) Appropriate measures of central tendency (median, mean, mode and modal class) 2) Spread (range, including consideration of outliers) 3) Students should know and understand the terms: primary data, secondary data, discrete	1) Use positive integer powers and associated real roots (square, cube and higher) • Recognise powers of 2, 3, 4, 5 • including square numbers up to 15x15 • know that `1000 = 10^3` and 1 million = `10^6` 2) Calculate with roots and with integer indices	Use the standard ruler and compass constructions: 1) perpendicular bisector of a line segment 2) constructing a perpendicular to a given line from / at a given point 3) bisecting a given angle 4) Know that the perpendicular distance from a point to a line is the shortest distance to the line	1) Solve geometrical problems on co-ordinate axes 2) Use the form $y = mx + c$ to identify parallel lines 3) Find the equation of the line through two given points, or through one point with a given gradient 4) Identify and interpret gradients and intercepts of linear functions graphically and algebraically

	data and continuous data 4) Apply statistics to describe a population 5) Infer properties of populations or distributions from a sample, whilst knowing the limitations of sampling		5) Use these to construct given figures and solve loci problems 6) constructing a 60° angle	
Themes	**Collecting and interpreting data**	**Indices ~ Powers and roots**	**Construction and loci**	**Graphs and algebra**
Challenge	1) Calculate mean from grouped and ungrouped frequency tables. 1) Calculate the median from grouped and ungrouped frequency tables 2) Calculate interquartile range from raw data	1) Know square numbers up to 15 x 15 1) Know cube numbers to 10 x 10 x 10 1) Know that square and cube roots are the inverses to squaring and cubing. 1) When asked to identify powers of 2, students know what this means and can calculate them.	2) Draw a perpendicular bisector from a point or at a point on the line. 3) Construct a 45° angle 4) Introduce the term equidistant, ensure students understand that all the points on the bisector are equal distances from the two ends of the line segment	1) Find the midpoint between two coordinates 1) Complete a selection of exam questions which use coordinates 2) recap the significance of m and c in the form $y = mc + c$

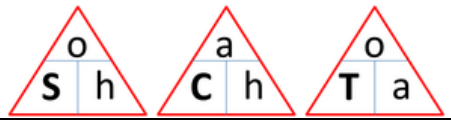
	2) Interpret interquartile range of raw data 2) Understand what is meant by the term outlier 2) Can identify outliers on a scatter diagram and give a reason for why they may exist. 3) Identify sources of primary and secondary data 3) Identify types of diagrams which could be used to represent discrete and continuous data 4) Understand what is meant by the term population 4) Calculate averages to compare and make	1) Can use a calculator to calculate the nth root of a value. 1) Can convert between powers of 10 written in index form and ordinary form 2) Simplify expressions using the basic rules of indices. $a^m \times a^n = a^{m+n}$ $a^m \div a^n = a^{m-n}$ $(a^m)^n = a^{mn}$ Then simplify expressions involving multiples of a. 3) Understand the effects of a negative indice.	5) Introduce the idea of loci – a set of points which satisfy a given rule and the four types of loci, as set below in the Support section 5) Apply combinations of these rules to solve more complex problems 5) Identify the region that satisfies more than one condition 6) Construct 30°, 60°, 90° angles	3) Calculate the gradient between two points by $\frac{Difference\ in\ y\ coordinates}{Difference\ in\ x\ coordinates}$ 3) Find the equation of a line given the gradient and one coordinate 3) Find the equation of a line given two coordinates 4) Construct straight line graphs using the gradient and y-intercept

	inferences between two or more data sets. 5) Know that the sample mean is an unbiased estimator of its population mean.			
Support	1) Recapping students' knowledge of different types of average; Mode = occurs the most Median = Middle number when ordered Mean = add and divide 2) Recapping students' knowledge of measures of spread; Range = largest value – smallest value 3) Know the difference between primary and secondary data 3) From a list, be able to identify discrete and continuous data 4) Understand that averages and range can be	1) Recap using powers to simplify expressions $5 \times 5 \times 5 \times 5 = 5^4$ $a \times a \times a = a^3$ 1) Know square numbers to 10 x 10 1) Understand that square roots are the inverse to squaring. Calculate square roots using a calculator 1) Know cube numbers to 5 x 5 x 5 1) Understand that cube roots are the inverse to cubing. Calculate cube roots using a calculator	1) Recap the meaning of 'perpendicular' 1) Focus on basic perpendicular bisectors of a line segment. It helps to give the students a list of instructions on how to carry this out. 3) Construct an angle bisector, creating a list of instructions for students on how to carry this out. 5) Introduce the idea of loci – a set of points which satisfy a given rule and the four types of loci • The locus of points which are 'a fixed	1) Recap coordinates on all four quadrants 1) Finding missing coordinates of geometric shapes 1) Looking for patterns and sequences in coordinates 2) Recap constructing straight line graphs, by constructing a table of values 2) Recap parallel lines and link into their equations, what do they notice.

	used to compare two data sets. Calculate averages and range of two simple data sets and make a simple comparison	1) Using a calculator can calculate powers of 2, 3, 4, and 5 1) Know that; • $100 = 10^2$ • $1000 = 10^3$ 2) Ensure students know the basic rules listed below; $a^m \times a^n = a^{m+n}$ $a^m \div a^n = a^{m-n}$ $(a^m)^n = a^{mn}$	distance from a given point' • The locus of points which are 'a fixed distance from a line' • The locus of points which are 'equidistant from two given lines' • The locus of points which are 'equidistant from two given points'	3) Calculating gradient of a straight line, by drawing on triangle. 3) Find the equation of a line given on axes.
Literacy focus	Key words: Mode, Median, Mean, Range, interquartile range, outlier, raw data, frequency table, Primary data, secondary data, discrete, continuous	Key words: indices, power, square, cube, roots,	Key words: Perpendicular, bisector, angle, loci, locus, equidistant, compass, region	Key words: axes, coordinates, gradient, y-intercept, equation, midpoint
Cross-curricular links	Geography, Business studies, sciences		Design technology	
SMSC & MBV				
ASSESSMENTS	Assessment 2 ~ December	Assessment 2 ~ December	Assessment 2 ~ December	Assessment 2 ~ December
Out of school learning	Weekly homework based on work covered in class	Weekly homework based on work covered in class	Weekly homework based on work covered in class	Weekly homework based on work covered in class

Queen Elizabeth High School

Scheme of Work	SUBJECT: Mathematics	YEAR: 10 Foundation ~ Spring term 1	
	Introduction to trigonometry	**Simultaneous equations**	**Further perimeter and area (review of year 9)**
Key concepts	1) Know and use the trigonometric ratios $\sin\theta = \frac{opposite}{hypotenuse}$, $\cos\theta = \frac{adjacent}{hypotenuse}$ and $tan\,\theta = \frac{opposite}{adjacent}$ 2) Apply them to find angles and lengths in right-angled triangles in two dimensional figures	1) Solve two simultaneous equations in two variables (linear / linear) algebraically 2) Find approximate solutions using a graph 3) Translate simple situations or procedures into algebraic expressions or formulae 4) Derive two simultaneous equations 5) Solve the equations and interpret the solution	1) Identify properties of the faces, surfaces, edges and vertices of: cubes, cuboids, prisms, cylinders, pyramids, cones and spheres 2) Calculate the perimeter of a 2D shape and composite shapes 3) Calculate the area of composite shapes 4) Find the surface area of pyramids and composite solids

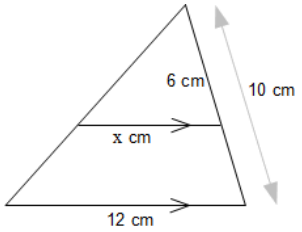
		6) Including the solution of geometrical problems and problems set in context	5) Know and apply formulae to calculate area of: ○ triangles ○ parallelograms ○ trapezia
Themes	**Introduction to trigonometry**	**Introduction to simultaneous equations**	**Recapping properties and area of shapes covered in year 9**
Challenge	1) Either use the triangles below or SOHCAHTOA to help learn the ratios 2) Find the height of isosceles or equilateral triangles 2) Apply methods to multi-step questions which involve other areas of mathematics to solve	1) Mix different types of simultaneous equations (as listed below) 2) Draw graphs of equation using the gradient and y-intercept method and using the cover up method, to solve simultaneous equations graphically. 4) Create simultaneous equations from situations and solve	1) Identifying a 3D shape from its description 4) Surface area of composite shapes and pyramids 5) Calculate area of composite shapes made from triangles, parallelograms and trapeziums 5) Multi-step questions involving area of 2D shapes with other areas of mathematics
Support	1) Labelling the sides of the triangles 1) Make use of triangles to help students learn the ratios 	1) Slowly build up the three different types of simultaneous equations, no multiplying needed, multiplying one equation then multiplying both equations	1) Naming the 2D and 3D shapes 2) Recap perimeter of rectangles 3) Recap area of rectangles

	1) Stress the importance of showing all workings out to help learn the methods and procedures required. 2) missing sides and angles in right angled triangles only	2) Recap drawing equations by drawing tables to solve simultaneous equations graphically 4) Create linear equations from situations and solve	4) Surface area of cubes and cuboids 5) Focus on learning the formulas for area of triangles and parallelograms
Literacy focus	Key words: Right angled triangle, isosceles, equilateral, ratio, sine, cosine, tangent, adjacent, opposite, hypotenuse	Key words: equation, simultaneous, graph, axes, coordinates	Key words: Faces, edges, vertices, cubes, cuboids, prisms, pyramid, cone, sphere, triangle, rectangle, composite shapes, parallelogram, trapezium, area, surface area
Cross-curricular links	Design and technology		Design technology, Art and design
SMSC & MBV			
ASSESSMENTS	Assessment 3 ~ February	Assessment 3 ~ February	Assessment 3 ~ February
Out of school learning	Weekly homework based on work covered in class	Weekly homework based on work covered in class	Weekly homework based on work covered in class

Queen Elizabeth High School

Scheme of Work	SUBJECT: Mathematics		YEAR: 10 Foundation ~ Spring term 2
	Congruence and similarity	**Review of basic probability (Recap of year 9)**	**Properties of polygons**
Key concepts	1) Use the basic congruence criteria for triangles (SSS, SAS, ASA, RHS) 2) 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 3) Apply and use the concepts of congruence and similarity, including the relationships between lengths in similar figures	1) Record, describe and analyse the frequency of outcomes of probability experiments using tables and frequency trees (review of Year 9) probabilities should be written as fractions, decimals or percentages 2) Apply the property that the probabilities of an exhaustive set of outcomes sum to one (review of Year 9) 3) Apply the property that the probabilities of an exhaustive set of mutually exclusive events sum to one (review of Year 9)	1) Derive and apply the properties and definitions of: • special types of quadrilaterals, including square, rectangle, parallelogram, trapezium, kite and rhombus • triangles and other plane figures using appropriate language, including knowing names and properties of isosceles, equilateral, scalene, right-angled, acute-angled, obtuse-angled triangles • know the names and using the polygons: pentagon,

		4) Construct theoretical possibility spaces for single and combined experiments with equally likely outcomes and use these to calculate theoretical probabilities (review of Year 9	hexagon, octagon and decagon 2) Derive and use the sum of angles in a triangle to deduce and use the angle sum in any polygon, and to derive properties of regular polygons
Themes	**Congruence and similarity**	**Basic probability**	**Properties of polygons**
Challenge	1) Use the SSS/ASA/SAS/RHS criteria to justify if two or more shapes are congruent 2) Discuss the idea that reflections, rotations and translations all produce congruent shapes whereas enlargement produces similar shapes 2) Recap Pythagoras theorem 2) Use prior mathematical knowledge discussed to help prove/show what missing angles and lengths are in geometric shapes	1) Solve multi-step problems involving relative frequency 1) Understand that the more times an experiment is repeated the closer the relative frequency comes to the theoretical probability 1) Calculate expected number of outcomes from relative frequency 2) Use the term 'exhaustive events' and know that their probabilities add to one 2) Know and apply the rule for the probability of something not happening	2) Split polygons into triangles to help identify the number of triangles in each polygon, hence using this to calculate the sum of the angles in a polygon (as below)   = 4 x 180 = 720° = 6 x 180 = 1080° 2) Derive algebraic formula for calculating missing angles in any polygon.

	3) Calculate missing sides of more complex shapes using similarity. 3) Calculate missing sides of triangles as below  	2) Find the probability of an outcome from knowing the probability of all other outcomes 3) Use the term 'Mutually exclusive' correctly in a given context 4) Identify the outcomes of a more complex experiment and represent these in a list or possibility space 4) Produce a two-way table from written information. 4) Produce a frequency tree from given information	2) calculate exterior angles of polygons 2) Know the relationship between the interior and exterior angles of any polygon 2) Apply these rules to more complex problems, including setting up and solving equations
Support	1) Recap the meaning of congruence and identify congruent shapes. 2) Recap angle properties of triangles and quadrilaterals 3) Understand the difference between congruent and similar shapes 3) Calculate missing sides in similar shapes by using the idea of enlargement, i.e. find the scale factor first then use this to calculate missing lengths	1) Recap converting between basic fractions, decimals and percentages 1) Understand and use probability scales and that probability lies between 0 and 1 1) Understand the probability estimated from an experiment is called the 'relative frequency'	1) Know the definition of a quadrilateral. 1) Can describe a quadrilaterals and triangles using their side and angle properties 1) Can identify the number of sides of each of the polygons listed. 2) Split polygons into triangles to help identify the number of triangles in each polygon, hence using this to

		2) Identify all the possible outcomes for an event and understand that their probabilities add up to 1 2) Know that the probability of something happening + probability of it not happening adds up to 1 3) Identify pairs of outcomes which cannot happen at the same time 4) List outcomes for simple probability experiments 4) Complete a partially completed two-way table 4) Produce a possibility space for a simple probability experiment 4) Complete a frequency tree with the correct numbers from given information.	calculate the sum of the angles in a polygon (as below)   = 4 x 180 = 720° = 6 x 180 = 1080°
Literacy focus	Key words: Congruent, similar, similarity, triangles, angles, lengths, SSS, ASA, SAS, RHS, quadrilaterals,	Key words: probability, two-way table, possibility space, frequency table, frequency tree, exhaustive, mutually exclusive, events, outcomes, relative frequency, theoretical probability, systematic,	Key words: Polygons, triangles, quadrilaterals, pentagon, hexagon, septagon, heptagon, octagon, nonagon, decagon, henagon, dodecagon, angle, degrees, parallel, perpendicular,

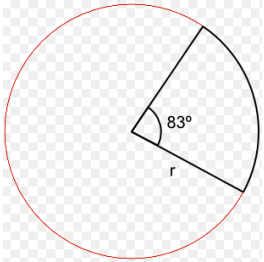
	Pythagoras, proofs, scale factor, enlargement	equally likely outcomes, impossible, certain, unlikely, likely.	opposite, adjacent, sides, equilateral, isosceles, scalene, right angled, square, rectangle, kite, parallelogram, trapezium, arrow head
Cross-curricular links	Design and technology		
SMSC & MBV			
ASSESSMENTS	Assessment 4 ~ Easter	Assessment 4 ~ Easter	Assessment 4 ~ Easter
Out of school learning	Weekly homework based on work covered in class	Weekly homework based on work covered in class	Weekly homework based on work covered in class

Queen Elizabeth High School

Scheme of Work	SUBJECT: Mathematics		YEAR: 10 Foundation ~Summer term 1
	Further circumference and area	**Probability**	**Algebra : quadratics, rearranging formulae and identities**
Key concepts	1) Identify and apply circle definitions and properties, including centre, radius, chord, diameter, circumference, tangent, arc, sector and segment (review of Year 9) 2) Know and use the formulae: • Circumference of a circle $C = 2\pi r \quad or \quad C = \pi d$ • Area of a circle $A = \pi r^2$ 3) Calculate the perimeter of 2D shapes including circles and composite shapes	1) Apply ideas of randomness, fairness and equally likely events to calculate expected outcomes or multiple future experiments 2) Relate relative expected frequencies to theoretical probability, using appropriate language and the 0 – 1 probability scale 3) Understand that empirical unbiased samples tend towards theoretical probability distributions with increasing sample size 4) Enumerate sets and combinations of sets systematically using tables, grids, Venn diagrams and tree diagrams 5) Calculate the probability of independent and dependent combined events, including using tree diagrams	1) Simplify and manipulate algebraic expressions by: • expanding products of two binomials • factorising quadratic expressions of the form `$x^2$ + bx + c` including the difference of two squares • simplifying expressions involving sums, products and powers, including the laws of indices 2) Understand and use standard mathematical formulae 3) Rearrange formulae to change the subject, including use of formulae

	4) Calculate areas of circles and composite shapes (review of Year 9) 5) <u>Calculate surface area of spheres, cones and composite solids</u> $Sphere = 4\pi r^2$ $Cone = \pi rl + \pi r^2$ $(l = slanted\ height)$ • Including frustums • Solutions in terms of π may be asked for 6) <u>Calculate arc lengths, angles and areas of sectors of circles</u> <u>Calculate exactly with multiples of π</u>	<u>and other representations, and know the underlying assumptions</u> 6) know when to add and when to multiply two or more probabilities	from other subjects in words and using symbols 4) <u>Know the difference between an equation and an identity</u> 5) <u>Argue mathematically to show algebraic expressions are equivalent, and use algebra to support and construct arguments</u> 6) Where appropriate, interpret simple expressions as functions with inputs and outputs
Themes	**Area and circumference of circles**	**Probability**	**Algebra ~ quadratics and rearranging formulae**
Challenge	1) Ensure students are aware of the terms tangent, chord, arc, segment and sector 3 & 4) Calculating area and circumference of more complex compound shapes involving circles	2 & 3) Make the connection between expected relative frequencies and theoretical probabilities (the more trials carried out the closer they become to the theoretical probabilities)	1) Include $(x + 2)^2$ 2) Substitute into formulae from different subjects (ensure students use BIDMAS while evaluating their answers)

	and other 2D shapes such as triangles. Giving answers both as a decimal and in terms of pi 5) Formulas for surface area of cones and spheres will be provided in the question. 5) When calculating the surface area of a cone ensure students do not forget to add the area of the base 5) Use Pythagoras theorem to calculate the slanted height 6) Students confidently calculate using the formula for the area of a sector and the length of an arc 6) Students complete the reverse to calculate the missing angle in a sector using both an arc length or its area. Give answers in terms of π	5) create a tree diagram to represent a problem 5) Use a tree diagram to calculate the probability of dependent events 6) Know that the multiply as the progress across the tree diagram and then add the probabilities when there is more than one outcome which satisfies the question.	5) Solve algebraic problems involving identities, such as Find a solution for a and b by equating the coefficients. $(2x-4)(x+3)+5 \equiv 2x^2+ax+b$
Support	1) Recap the parts of a circle focusing on radius and diameter. 2) To help students remember the formulas it is worthwhile getting them to write out the formula as the first	1) Ensure students understand the importance of randomness, fairness and equally likely events when calculating probabilities.	1) Ensure students can expand out over a single bracket first, 3(2x + 4) and 2(2x – 3) + 4(x + 2) etc 1) Recap single bracket factorisation

	step of their workings out for each question. 3 & 4) Ensure students are confident with calculating area and circumference of whole circles before moving on to semi and quarter circles. Giving answers both as a decimal and in terms of pi 5) Formulas for surface area of cones and spheres will be provided in the question, so for weaker students treat it as substitute into formulae. 6) Ensure sure students know that a sector is fraction of a circle, hence its area is the same fraction of the whole circle, draw the sector as part of a whole circle  Same for arc length	1) Calculating expected outcomes by multiplying the probability by the number of trials. 4) Use sample space diagrams to record outcomes of combined events 5) Be able to complete a partially completed tree diagram for independent events	2) Recap rules for substitution into simple expressions 4) know the difference between an expression, equation, identity and a formula 6) Function machines
Literacy focus	Key words: centre, radius, chord, diameter, circumference, tangent, arc, sector, segment, pi	Key words: Probability, equally likely events, relative frequency, outcomes,	Key words: Equation, expression, identity, formula, expand, binomial, factorise,

		theoretical, expected, tree diagrams, Venn diagrams, independent, dependent	brackets, substitute, simplify, rearrange, change subject,
Cross-curricular links			
SMSC & MBV			
ASSESSMENTS	Assessment 5 ~ Year 10 mocks	Assessment 5 ~ Year 10 mocks	Assessment 5 ~ Year 10 mocks
Out of school learning	Weekly homework based on work covered in class	Weekly homework based on work covered in class	Weekly homework based on work covered in class

Queen Elizabeth High School

Scheme of Work	SUBJECT: Mathematics	YEAR: 10 Foundation ~ Summer term 2
	Real life graphs	**Revision and recap**
Key concepts	1) Plot and interpret; • Graphs, straight line graphs, quadratic graphs, cubic graphs (including reciprocal graphs) • graphs of non-standard functions in real contexts (time-distance graphs) • to find approximate solutions to problems such as simple kinematic problems involving distance, speed and acceleration • Students need to be able to identify the different types of graphs 2) Interpret the gradient of a straight-line graph as a rate of change	Revision for the end of year 10 exams, topics are chosen through discussion between pupils and teacher.
Themes	**Real life graphs**	
Challenge	1) recap drawing straight line graphs by using 'the gradient and y-intercept method' and the 'cover up method'	

Support	1) recap drawing straight line graphs by draw out a table of values 1) When calculating the values for the quadratic, cubic and reciprocal graphs encourage students to use a calculator, remembering to put any negative numbers in brackets. 1) Gradient = Speed, recap how to calculate gradient	
Literacy focus	Key words: Straight line, linear, quadratic, cubic, reciprocal, graphs, speed, time, distance, gradient, y-intercept	Key words:
Cross-curricular links		
SMSC & MBV		
ASSESSMENTS	Assessment 5 ~ Year 10 mocks	Assessment 5 ~ Year 10 mocks
Out of school learning	Weekly homework based on work covered in class	Weekly homework based on work covered in class