Year 11 Revision Schedule 2023_24

Subject/Course:		**GCSE Maths Higher (Edexcel)**		
Student Name:		**GCSE Year 11 students**		
		Topic	**Key knowledge/skills/questions**	**Resources/activities/links**
Week 1	**Monday 15 January 2024**	1.1 Simple interest 1.2 Percentage increase and decrease 1.4 Compound interest and depreciation 1.3 Calculating the original value 2.1 Multiplying out brackets (single brackets (revision) and two sets of single brackets with simplification) Y8 HT3 2.4 Equations with fractions 3.1 Properties of polygons 3.2 Interior and exterior angles of regular polygons 8.1 Expanding the product of two brackets 8.2 Expanding expressions with more than two brackets	• To know what is meant by simple interest • To solve problems involving simple interest • Introduce use of multpliers to find percentages • To use the multiplier method to calculate the result of a percentage increase or decrease • To calculate the percentage change in a value • To calculate the result of repeated percentage changes • To calculate the original value, given a percentage change • To expand brackets and simplify more complex expressions • To solve equations where the variable is in the denominator of a fraction (lower sets: recap standard linear equations) • To work out the sum of the interior angles of a polygon • To work out the exterior angles of polygons • To calculate the interior and exterior angles of regular polygons • To multiply out (or expand) two brackets • To multiply out three or more brackets	Class notes and exam questions provided Past papers (all exam boards online) Tuesday after-school Maths Support 15.00 - 16.00 Websites: SPARX Maths Maths Genie Corbett Maths – 5 a day OnMaths Pixi Maths 1st Class Maths Boss Maths Access Maths BBC Bitesize

Week 2	**Monday 22 January 2024**	4.2 Two-way tables 4.3 Estimation of a mean from grouped data 4.4 Cumulative frequency diagrams 5.2 Time graphs 5.3 Exponential growth graphs 6.2 Using Pythagoras' theorem to solve problems	• To interpret a variety of two-way tables Focus on when table needs to be drawn from scratch • To calculate mean from ungrouped data in a frequency table To estimate mean from grouped data • To draw a cumulative frequency diagram • To find the interquartile range • To interpret and draw time graphs - For example, sales over time, • To draw exponential growth graphs • To use Pythagoras' theorem to calculate missing sides in right- angled triangles • To use Pythagoras' theorem to solve problems in context • To use the converse of Pythagoras' theorem to establish whether or not a triangle is a right-angled triangle	As above
Week 3	**Monday 29 January 2024**	2.2 Factorising algebraic expressions (single brackets) 2.3 Expressions with several variables 7.4 Algebraic fractions 8.3 Factorising quadratic expressions (a=1) 8.5 The difference of two squares 9.3 Multiplying numbers in standard form 9.4 Dividing with numbers in standard form 9.5 Upper and lower bounds 16.6 Problems involving limits of accuracy 16.7 Error intervals	• To factorise more complex expressions • To expand and factorise expressions with more than one variable • To add, subtract, multiply or divide fractions containing a variable (recap of numerical methods may be required in advance of the algebra) • To factorise quadratic expressions • To recognise and use the difference of two squares to solve an equation Converting in and out of standard form • To multiply numbers in standard form • To divide numbers in standard form • To use limits of accuracy when rounding data • Combine limits of two or more variables together to solve problems and create error intervals	As above
Week 4	**Monday 5 February**	10.1 Volume of a cylinder 10.2 Surface area of a cylinder 10.3 Composite shapes 11.1 Graphs from equations of the form ay ± bx = c	• To calculate the volume of a cylinder • To calculate the curved surface area of a cylinder • To calculate the total surface area of a cylinder	As above

		10.2 Gradient of a line 10.3 Drawing graphs by gradient-intercept and cover-up methods 10.4 Finding the equation of a line from its graph 10.5 Real-life uses of graphs	• To calculate the volumes and surface areas of composite shapes • To draw any linear graph from its equation • To solve a linear equation graphically • Rates of change • To work out the gradient of a straight line • To know that the gradient of a line is the coefficient of x (m) in y = mx + c, the general equation for a straight line. • To draw graphs using the gradient / intercept method • To find the equation of a line, given its gradient and y-axis intercept • To solve problems in practical contexts using graphs	
Week 5	**Half Term Monday 12 February**	12.1 Speed - Denisty - Pressure 13.1 Introduction to trigonometric ratios 13.2 How to find trigonometric ratios of angles 13.3 Using trigonometric ratios to find angles 13.4 Using trigonometric ratios to find lengths	• To solve distance/time/speed problems • To solve problems involving density/mass/volume • To understand what trigonometric ratios are • To understand what the trigonometric ratios sine, cosine and tangent are • To find the angle identified from a trigonometric ratio • To find an unknown length of a right-angled triangle, give one side and another angle	As above
Week 6	**Monday 19 February**	14.7 Geometric Proofs 13.2 Probability of Independent and combined events 4.4 Generating non-linear sequences Probability: Addition rules for outcomes of events Probability: Combined events Probability: Tree diagrams Probability: Independent events Probability: Conditional probability	• Use known geometric results to obtain simple proofs • To calculate the probability of independent and combined events using a tree diagram • To generate and identify non-linear sequences from either a term-to term or a postion-to-term rule To work out the probability of two events such as P(A) or P(B) To work out the probability of two events occurring at the same time To use and construct sample space diagrams and tree diagrams to work out the probability of combined events To calculate using the ‘and’ and the ‘or’ rule to find the probality of combined events	As above

			To work out the probability of combined events when the probabilities change after each event	
Week 7	**Monday 26 February**	4.1 Patterns in number 4.2 Number sequences 4.3 Finding the nth term of a linear sequence 4.4 Special sequences 4.5 General rules from given patterns 4.7 Finding the nth term for quadratic sequences 5.1 Ratio 5.2 Direct proportion problems 5.4 Compound measures 6.3 Angles in a polygon 6.5 Angles: Parallel lines 6.7 Scale drawings and bearings	• To extend and identify number patterns • To identify simple linear rules • To generate sequences, given the rule • To generalise and find the nth term of a linear sequence • To recognise and continue some special number sequences such as square numbers or a simple geometric progression • To find the nth term from a sequence of patterns • To continue a quadratic sequence, given the rule • To find the nth term of a quadratic sequence from second differences • To simplfy a given ratio • To express a ratio as a fraction • To divide amounts into given ratios • To complete calculations from a given ratio and partial information Combining ratios and taking things out to create a new ratio • To recognise and solve problems using direct proportion • To solve problems involving density/ mass/volume (pressure/force/area) • To work out the sum of the interior angles in a polygon • To be able to calculate the size of the interior and exterior angles of any regular polygon • To solve problems involving alternate, corresponding, allied and opposite angles • To be able to calculate the size of angles in special quadrilaterals using their geometric properties • To be able to make a scale drawing to a given scale	As above

			• To be able to convert measurements to calculate actual distances • To be able to read, interpret and draw bearings diagrams • To use the geometrical properties of a diagram to calculate a bearing	
Week 8	**Monday 4 March**	7.1 Congruent triangles 7.2 Rotational symmetry 7.3 Transformations 7.4 Combinations of transformations 7.5 Bisectors 7.6 Defining a locus 7.7 Loci problems 7.8 Plans and elevations 8.6 Quadratic factorisation 8.7 Factorising ax2 + bx + c 8.8 Changing the subject of a formula 9.4 Sectors 9.5 Volume of a prism 9.6 Cylinders 9.7 Volume of a pyramid 9.8 Cones 9.9 Spheres	• To identify two congruent triangles • To justify why two triangles are congruent • To identify and describe the rotational symmetry of a shape • To translate a 2D shape, using vectors to describe the transformation • To draw and describe the image of one or more reflections • To draw and describe a rotation that will take an object onto its image • To enlarge a 2D shape by a positive or negative integer or fraction scale factor and describe the transformation • To combine transformations • To describe a sequence of transformations to map an object onto its image • To construct the bisectors of lines and angles • To draw a locus for a given rule • To solve loci problems in practical contexts • To draw 2D representations of 3D objects from different views • To factorise quadratic expressions with the coefficient of x2 not equal to 1 • Be able to rearrange formulae - where the subject appears more than once • To calculate the length of an arc and the area of a sector • To calculate the volume of a prism • To calculate the volume and surface area of a cylinder • To calculate the volume of a pyramid • To calculate the volume and surface area of a cone	As above

			• To calculate the volume and surface area of a sphere	
Week 9	**Monday 11 March**	17.2 Solving quadratic equations by factorisation 17.3 Solving a quadratic equation by using the quadratic formula 17.3 Solving a quadratic equation by using the quadratic formula 11.2 Solving simultaneous equations by drawing graphs 11.3 Solving quadratic equations by drawing graphs 11.4 Solving cubic equations by drawing graphs 10.1 Drawing linear graphs from points 10.7 Gradients of Parallel and perpendicular lines 11.4 Pythagoras' theorem and isosceles triangles 11.5 Pythagoras' theorem in three dimensions 11.12 Trigonometry and bearings 12.1 Similar triangles 12.2 Areas and volumes of similar shapes	• To solve a quadratic equation by factorisation • To use the quadratic formula to solve a quadratic equation where factorisation is not possible • To solve a pair of simultaneous equations graphically • To solve a quadratic equation by drawing a graph • To solve cubic equations graphically • To draw a line graphs using three points (x, y) • To know that parallel lines have the same gradient • To know that the product of the gradients of perpendicular lines is always -1 • To calculate the length of the hypotenuse in a right-angled triangle • To calculate the length of a shorter side in a right-angled triangle • To solve real-life problems involving Pythagoras' theorem • To use the geometry of isosceles triangles and Pythagoras' theorem to solve angle problems • To use Pythagoras' theorem in problems involving three dimensions • To solve bearings problems using trigonometry • To show that two triangles are similar To work out the scale factor between similar triangles • To solve problems involving the area and volume of similar shapes	As above

Week 10	**Monday 18 March**	13.5 Probability and Venn diagrams 15.2 Elimination method for simultaneous equations 15.3 Substitution method for simultaneous equations 15.4 Balancing coefficients to solve simultaneous equations 15.5 Using simultaneous equations to solve problems 15.5 Using simultaneous equations to solve problems 15.6 Linear inequalities 15.7 Graphical inequalities 16.2 Estimating powers and roots 16.3 Negative and fractional powers	• To construct and read Venn diagrams to represent probability • To use the elimination method to solve simultaneous equations • To use the substitution method to solve simultaneous equations • To use the method of balancing coefficients to solve simultaneous equations • To solve problems, using simultaneous linear equations with two variables • To solve problems using linear and non-linear simultaneous equations • To solve a simple linear inequality • To show a graphical inequality • To use known facts and trial and improvement to estimate the value of powers and roots • To represent roots and decimal numbers as indices	As above
Week 11	**Monday 25 March**	16.1 Rational numbers, reciprocals, terminating and recurring decimals 16.4 Surds 16.7 Choices and outcomes 17.4 Solving quadratic equations by completing the square 17.5 The significant points of a quadratic curve 17.6 Solving equations, one linear and one nonlinear using graphs 17.7 Solving quadratic equations by the method of intersection 17.8 Solving linear and non-linear simultaneous equations algebraically 17.9 Quadratic inequalities 18.1 Sampling data 18.2 Frequency polygons 18.3 Cumulative frequency graphs 18.4 Box plots 18.5 Histograms 18.6 stem and leaf 18.7 Pie charts	• To recognise rational numbers, reciprocals,terminating and recurring decimals • To convert terminal decimals to fractions • To convert fractions to recurring decimals • To find reciprocals of integers or fractions • To simplify surds • To calculate with and manipulate surds, including rationalising a denominator • To work out the number of choices, arrangements or outcomes when choosing from lists or sets • To solve quadratic equations by completing the square • To identify and interpret roots, intercepts and turning points of quadratic functions graphically • To deduce roots algebraically and turning points by completing the square • To use this information to sketch the curve • To solve a pair of simultaneous equations where one is linear and one is non-linear, using graphs and where they intersect	As above

			• To solve quadratic equations using intersection points between graphs or at axes • To use algebraic techniques, including substitution and rearranging, to solve a pair of equations • To solve a quadratic inequality algebraically • To show a graphical quadratic inequality • To know how to find regions that satisfy more than one graphical inequality • To know the range of methods of sampling and decide which method is best when collecting reliable, unbiased data • To draw frequency polygons for discrete and continuous data • To find a measure of dispersion (the interquartile range) and a measure of location (the median) using a graph • To draw and read box plots • To draw and read histograms where the bars are of unequal width To read and interpret stem and leaf diagrams • To find the median, quartiles and interquartile range from a histogram	
Week 12	**Easter Monday 1 April**	Estimating powers and roots Equation of a circle Cubic, exponential and reciporcal graphs Transformations of the graph y = f(x)	To use known facts and trial and improvement to estimate the value of powers and roots To recognise and plot the equation of a circle To use this equation to identify the centre and radius of the circle To find the equation of a tangent to a circle at a given point To recognise and plot cubic, exponential and reciprocal graphs To sketch translations and reflections of the graph of a given function To be able to transform graphs and identify the effect of transformations on functions such as y = 2f(x); y = f(2x); y = f(x) + 2 and y = f(x + 2)	As above

Week 13	**Easter** **Monday 8 April**	Circle theorems Cyclic quadrilaterals Tangents and chords Alternate segment theorem Direct proportion Inverse proportion	To use circle theorems to find the size of angles in circles To find the size of angles in cyclic quadrilaterals To use tangents and chords to find the size of angles in circles To use the alternate segment theorem to find the size of angles in circles To solve problems where two variables have a directly proportional relationship (direct variation) To work out the constant and equation of proportionality To solve problems where two variables have an inversely proportional relationship (inverse variation) To work out the constant and equation of proportionality	As above
Week 14	**Monday 15 April**	Trigonometry - Solving any triangle Using sine to calculate the area of a triangle Distance–time graphs Velocity–time graphs Estimating the area under a curve Rates of change Functions Composite functions Iteration	To use the sine rule and the cosine rule to find sides and angles in non-right-angled triangles To use the sine rule to work out the area of any triangle, given two sides and the included angle To draw and interpret distance–time graphs To know that the gradient represents the speed of the object To draw and interpret velocity–time graphs To know that the gradient represents the acceleration of the object To know that the area under the graph represents the distance travelled To estimate the area under a curve by using rectangular strips To interpret the gradient at a point on a curve as the instantaneous rate of change To apply the concept of rates of change in numerical, algebraic and graphical contexts To interpret simple expressions as functions with inputs and outputs To interpret the reverse process as the inverse function	As above

			To use function notation to draw graphs and identify values by substitution To interpret the succession of two functions as a composite function and be able to find output values from given input values To find approximate solutions to equations numerically using iteration To set up, solve and interpret the answers in growth and decay problems, including compound interest, working with general iterative processes	
Week 15	**Monday 22 April**	Properties of vectors Vectors in geometry	To add and subtract vectors To multiply vectors by a scalar To represent a vector in diagrammatic and column form To use vectors to solve geometric problems To use vectors to construct geometric arguments and proofs	As above
Week 16	**Monday 29 April**	Exam Practice		As above
Week 17	**Monday 6 May**	Exam Practice		As above
Week 18	**Monday 13 May**	Exam Practice		As above
Week 19	**Monday 20 May**	Exam Practice		As above
Week 20	**Half Term Monday 27 May**	Exam Practice		As above

Week 21	**Monday 3 June**	Exam Practice		As above
Week 22	**Monday 10 June**			