

YEAR 9		Edexcel GCSE (9-1) Mathematics		Higher Tier	
Wk.	TERM	UNIT / LESSON	STEPS (GRADES) FROM	STEPS (GRADES) FROM	LEARNING OUTCOME
	AUTUMN	1 Number	6th (grade 3)	12th (grade 9)	
1	04/09/2017	1.1 Number problems and notation	6th (grade 3)	9th (grade 6)	Work out the total number of ways of performing a series of tasks.
2	11/09/2017	1.2 Place value and estimating	6th (grade 3)	7th (grade 4)	Estimate an answer.
3	18/09/2017	1.3 HCF and LCM	7th (grade 4)	8th (grade 5)	Use place value to answer questions. Write a number of the product of its prime factors.
4	25/09/2017	1.4 Calculating with powers (indices)	6th (grade 3)	8th (grade 5)	Find the HCF and LCM of two numbers. Use powers and roots in calculations. Multiply and divide using index laws. Work out a power raised to a power. Use negative indices. Use fractional indices. (EXTN)
		1.5 Zero, negative and fractional indices	8th (grade 5)	12th (grade 9)	Use negative indices.
		1.6 Powers of 10 and standard form	7th (grade 4)	9th (grade 6)	Write a number in standard form. Calculate with numbers in standard form.
		1.7 Surds	10th (grade 7)	11th (grade 8)	Understand the difference between rational and irrational numbers. Simplify a surd.
		UNIT 1 TEST			Rationalise a denominator. (EXTN)
	AUTUMN	2 Algebra	6th (grade 3)	10th (grade 7)	
5	02/10/2017	2.1 Algebraic indices	7th (grade 4)	10th (grade 7)	Use the rules of indices to simplify algebraic expressions.
6	09/10/2017	2.2 Expanding and factorising	6th (grade 3)	10th (grade 7)	Expand brackets. Factorise algebraic expressions.
7	16/10/2017	2.3 Equations	6th (grade 3)	9th (grade 6)	Solve equations involving brackets and numerical fractions. Use equations to solve problems.
		2.4 Formulae	6th (grade 3)	9th (grade 6)	Substitute numbers into formulae. Rearrange formulae. Distinguish between expressions, equations, formulae and identities.
		2.5 Linear sequences	6th (grade 3)	8th (grade 5)	Find a general formula for the n th term of an arithmetic sequence. Determine whether a particular number is a term of a given arithmetic sequence. Solve problems using geometric sequences. Work out terms in Fibonacci-like sequences.
		2.6 Non-linear sequences	6th (grade 3)	9th (grade 6)	Find the n th term of a quadratic sequence.
		2.7 More expanding and factorising	7th (grade 4)	10th (grade 7)	Expand the product of two brackets. Use the difference of two squares. Factorise quadratics of the form $ax^2 + bx + c$.
		UNIT 2 TEST			
	23/10/2017	HALF TERM			
8	30/10/2017	REVISION & TEST	OFFICIAL COMBINED UNIT TESTS: 1 & 2		
		3 Interpreting and representing data	4th (grade 2)	8th (grade 5)	
9	06/11/2017	3.1 Statistical diagrams 1	4th (grade 2)	7th (grade 4)	Construct and use back-to-back stem and leaf diagrams.
10	13/11/2017	3.2 Time series	6th (grade 3)	6th (grade 3)	Construct and use frequency polygons and pie charts. Plot and interpret time series graphs. Use trends to predict what might happen in the future.
11	20/11/2017	3.3 Scatter graphs	6th (grade 3)	7th (grade 4)	Plot and interpret scatter graphs. Determine whether or not there is a linear relationship between two variables.
		3.4 Line of best fit	6th (grade 3)	7th (grade 4)	Draw a line of best fit on a scatter graph. Use the line of best fit to predict values.
		3.5 Averages and range	5th (grade 3)	8th (grade 5)	Decide which average is best for a set of data. Estimate the mean and range from a grouped frequency table. Find the modal class and the group containing the median.
		3.6 Statistical diagrams 2	5th (grade 3)	6th (grade 3)	Construct and use two-way tables. Choose appropriate diagrams to display data. Recognise misleading graphs.
		UNIT 3 TEST			
12	27/11/2017	PROBLEM-SOLVING ACTIVITIES			
13	04/12/2017	FINANCIAL PROJECT - CORE MATHEMATICS			
14	11/12/2017	FINANCIAL PROJECT - CORE MATHEMATICS			

EXTENSION LEARNING OUTCOMES IN BOLD					
TERM	UNIT / LESSON	STEPS (GRADES) FROM	STEPS (GRADES) FROM	LEARNING OUTCOME	
	SPRING	4 Fractions, ratio and percentages	6th (grade 3)	10th (grade 7)	
15	01/01/2018	4.1 Fractions	6th (grade 3)	8th (grade 5)	Add, subtract, multiply and divide fractions and mixed numbers. Find the reciprocal of an integer, decimal or fraction.
16	08/01/2018	4.2 Ratios	6th (grade 3)	7th (grade 4)	Write ratios in the form 1 : n or n : 1. Compare ratios. Find quantities using ratios. Solve problems involving ratios.
17	15/01/2018	4.3 Ratio and proportion	6th (grade 3)	8th (grade 5)	Convert between currencies and measures. Recognise and use direct proportions. Solve problems involving ratios and proportion.
		4.4 Percentages	6th (grade 3)	9th (grade 6)	Work out percentage increases and decreases. Solve real-life problems involving percentages.
		4.5 Fractions, decimals and percentages	6th (grade 3)	10th (grade 7)	Work out percentage increases and decreases. Solve real-life problems involving percentages.
		UNIT 4 TEST			
	SPRING	5 Angles and trigonometry	6th (grade 3)	9th (grade 6)	
18	22/01/2018	5.1 Angle properties of triangles and quadrilaterals	6th (grade 3)	6th (grade 3)	Derive and use the sum of angles in a triangle and in a quadrilateral. Derive and use the fact that the exterior angle of a triangle is equal to the sum of the two opposite interior angles. Calculate the sum of the interior angles of a polygon. Use the interior angles of polygons to solve problems.
19	29/01/2018	5.2 Interior angles of a polygon	6th (grade 3)	7th (grade 4)	
20	05/02/2018	5.3 Exterior angles of a polygon	6th (grade 3)	8th (grade 5)	Know the sum of the exterior angles of a polygon. Use the angles of polygons to solve problems.
		5.4 Pythagoras' theorem 1	7th (grade 4)	7th (grade 4)	Calculate the length of the hypotenuse in a right-angled triangle. Solve problems using Pythagoras' theorem.
		5.4 Pythagoras' theorem 1	8th (grade 5)	8th (grade 5)	Calculate the length of a shorter side in a right-angled triangle. Solve problems using Pythagoras' theorem.
		5.6 Trigonometry 1	6th (grade 3)	9th (grade 6)	Use trigonometric ratios to find lengths in a right-angled triangle. Use trigonometric ratios to solve problems.
		5.7 Trigonometry 2	6th (grade 3)	9th (grade 6)	Use trigonometric ratios to calculate an angle in a right-angled triangle. Find angles of elevation and angles of depression. Use trigonometric ratios to solve problems. Know the exact values of the sine, cosine and tangent of some angles.
		UNIT 5 TEST			
	12/02/2018	HALF TERM			
21	19/02/2018	REVISION & TEST	OFFICIAL COMBINED UNIT TESTS: 3, 4 & 5		
		6 Graphs	6th (grade 3)	10th (grade 7)	
22	26/02/2018	6.1 Linear graphs	6th (grade 3)	8th (grade 5)	Find the gradient and y-intercept from a linear equation. Rearrange an equation into the form $y = mx + c$. Compare two graphs from their equations. Plot graphs with equations $ax + b = c$.
23	05/03/2018	6.2 More linear graphs	7th (grade 4)	8th (grade 5)	Sketch graphs using the gradient and intercepts. Find the equation of a line, given its gradient and one point on the line. Find the gradient of a line through two points.
24	12/03/2018	6.3 Graphing rates of change	6th (grade 3)	10th (grade 7)	Draw and interpret distance-time graphs. Calculate average speed from a distance-time graph. Understand velocity-time graphs. Find acceleration and distance from velocity-time graphs.
25	19/03/2018	6.4 Real-life graphs	6th (grade 3)	8th (grade 5)	Draw and interpret real-life linear graphs. Recognise direct proportion. Draw and use a line of best fit.
		6.5 Line segments	6th (grade 3)	10th (grade 7)	Find the coordinates of the midpoint of a line segment. Find the gradient and length of a line segment. Find the equations of lines parallel or perpendicular to a given line.
		6.6 Quadratic graphs	7th (grade 4)	10th (grade 7)	Draw quadratic graphs. Solve quadratic equations using graphs. Identify the line of symmetry of a quadratic graph. Interpret quadratic graphs relating to real-life situations. Draw graphs of cubic functions.
		6.7 Cubic and reciprocal graphs	8th (grade 5)	10th (grade 7)	Solve cubic equations using graphs. Draw graphs of reciprocal functions. Recognise a graph from its shape. Interpret linear and non-linear real-life graphs. Draw the graph of a circle.
		6.8 More graphs	7th (grade 4)	9th (grade 6)	
		UNIT 6 TEST			
26	26/03/2018	PROBLEM-SOLVING ACTIVITIES			

STEPS REFER TO THE 12-STEP PEARSON MODEL					
TERM	UNIT / LESSON	STEPS (GRADES) FROM	STEPS (GRADES) FROM	LEARNING OUTCOME	
	SUMMER	7 Area and volume	6th (grade 3)	12th (grade 9)	
27	16/04/2018	7.1 Perimeter and area	6th (grade 3)	6th (grade 3)	Find the perimeter and area of compound shapes. Recall and use the formula for the area of a trapezium.
28	23/04/2018	7.2 Units and accuracy	6th (grade 3)	10th (grade 7)	Convert between metric units of area. Calculate the maximum and minimum possible values of a measurement.
29	30/04/2018	7.3 Prisms	7th (grade 4)	9th (grade 6)	Convert between metric units of volume. Calculate volumes and surface areas of prisms.
		7.4 Circles	6th (grade 3)	8th (grade 5)	Calculate the area and circumference of a circle. Calculate area and circumference in terms of π .
		7.5 Sectors of circles	8th (grade 5)	12th (grade 9)	Calculate the perimeter and area of semicircles and quarter circles. Calculate arc lengths, angles and areas of sectors of circles. (EXTN)
		7.6 Cylinders and spheres	7th (grade 4)	11th (grade 8)	Calculate volume and surface area of a cylinder and a sphere. Solve problems involving volumes and surface areas. (EXTN)
		7.7 Pyramids and cones	6th (grade 3)	12th (grade 9)	Calculate volume and surface area of pyramids and cones. Solve problems involving pyramids and cones. (EXTN)
		UNIT 7 TEST			
	SUMMER	8 Transformations and constructions	6th (grade 3)	10th (grade 7)	
30	07/05/2018	8.1 3D solids	6th (grade 3)	7th (grade 4)	Draw plans and elevations of 3D solids.
31	14/05/2018	8.2 Reflection and rotation	6th (grade 3)	7th (grade 4)	Reflect a 2D shape in a mirror line. Rotate a 2D shape about a centre of rotation. Describe reflections and rotations.
32	21/05/2018	8.3 Enlargement	6th (grade 3)	10th (grade 7)	Enlarge shapes by fractional and negative scale factors about a centre of enlargement. Translate a shape using a vector. Carry out and describe combinations of transformations.
		8.4 Transformations and combinations of transformations	7th (grade 4)	8th (grade 5)	Draw and use scales on maps and scale drawings. Solve problems involving bearings.
		8.5 Bearings and scale drawings	6th (grade 3)	7th (grade 4)	
		8.6 Constructions 1	6th (grade 3)	7th (grade 4)	Construct triangles using a ruler and compasses. Construct the perpendicular bisector of a line. Construct the shortest distance from a point to a line using a ruler and compasses.
		8.7 Constructions 2	7th (grade 4)	8th (grade 5)	Construct angles using a ruler and compasses. Construct shapes made from triangles using a ruler and compasses.
		8.8 Loci	7th (grade 4)	10th (grade 7)	Draw a locus. Use loci to solve problems.
		UNIT 8 TEST			
33	07/05/2018	REVISION & TEST	OFFICIAL COMBINED UNIT TESTS: 6, 7 & 8		
34	14/05/2018	REVISION FOR END OF YEAR TESTS			
35	21/05/2018	REVISION FOR END OF YEAR TESTS			
	18/05/2018	HALF TERM			
36	04/06/2018	REVISION FOR END OF YEAR TESTS			
37	11/06/2018	END OF YEAR TESTS: NON-CALCULATOR & CALCULATOR			
38	18/06/2018	18.1 Vectors and vector notation	9th (grade 6)	10th (grade 7)	Use vectors to describe translations. Recall and use Pythagoras' Theorem. Simplify surds.
39	25/06/2018	18.2 Vector arithmetic	10th (grade 7)	10th (grade 7)	Understand the components of a vector and use vectors to describe translations. Recall properties of triangles and quadrilaterals.
40	02/07/2018	18.3 More vector arithmetic	10th (grade 7)	11th (grade 8)	Use properties of a parallelogram to identify equal and parallel lines. Add two column vectors. Identify parallel column vectors. (EXTN) Add and subtract column vectors. (EXTN)
		18.4 Parallel vectors and collinear points	10th (grade 7)	12th (grade 9)	
		18.5 Solving geometric problems	12th (grade 9)	12th (grade 9)	Understand the relationship between ratio and fractional parts (EXTN) Identify parallel vectors (EXTN)
41	09/07/2018	UNIT 18 TEST (EXTN)			
42	16/07/2018	FEEDBACK FROM END OF YEAR TESTS			
43	23/07/2018	FEEDBACK FROM END OF YEAR TESTS			