

NAME		TEACHER				
My GCSE Target Grade is		End of Cycle Teacher Assessment Please circle				
		SAE	AE	E	BE	SBE
End of unit assessment type		Your end of topic assessment will be a written exam.				

YEAR 11 FOUNDATION	CYCLE 1: ALGEBRA & NUMBER
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	Knowledge	Prior knowledge	End of topic
Number	Fractions – I can carry out all 4 operations of fractions including multiply and divide mixed number fractions		
	Indices, powers and roots – I know and can use the laws of indices (multiplication and division rules)		
	Standard Form 1 – I can write large numbers in standard form and convert large numbers from standard form into ordinary numbers I can write small numbers in standard form and convert small numbers from standard form into ordinary numbers		
	Standard Form Calculations – I can multiply and divide numbers in standard form and add and subtract numbers in standard form		
	Prime Factors - I can use prime factor decomposition to list the prime factors of a number		
	Alternate and corresponding angles – I can identify Z and F angles and apply to problems involving triangles and parallel lines.		
Algebra	Expanding Brackets – I can expand single & double brackets and apply to problem solving questions involving shapes		
	Factorising – I can factorise linear and quadratic expressions and use to simplify simple algebraic fractions		
	Solving Quadratics - I can factorise to solve quadratic equations of the form $x^2 + bx + c = 0$		
	Solving Equations – I can solve equations involving brackets, unknowns on both sides and fractions and I am confident leaving my answer as a fraction		
	Rearranging Formulae – I can change the subject of a formula with one step as well as unknowns on both sides.		
	Algebraic Proof – I can prove simple algebraic methods such as the sum of 2 consecutive numbers always being an odd number		

LEARNING TOOLS			
MY KEY TOPICS	KEY TOPIC 1		
	KEY TOPIC 2		
KEY WORDS	Solve	Rearrange	Alternate Corresponding
KEY EQUATION	$x^2 + bx + c = 0$		
PRE-LEARNING	Y11 Foundation Cycle 1 HegartyMaths Videos: <ul style="list-style-type: none"> 66 (Add or subtract fractions: different denominator) 72 (Linking multiplying/dividing fractions & whole numbers) 122 (Ordinary to Standard Form) 28 (Prime Factors) 		
CAREERS	<ul style="list-style-type: none"> Food Industry: In the catering, for example, chefs/bakers may use these to work out the quantity of ingredients when cooking/baking using fractions Engineering: This looks at how variables in physical systems vary in proportion to each other. Therefore, engineers are full of fractions. Every engineering field uses fractions, from stress-to-strain ratios to chemical concentration ratios and reaction rates. 		

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YEAR 11 FOUNDATION	CYCLE 2: ALGEBRA & SHAPE
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	Knowledge	Prior knowledge	End of topic
Shape	Area and Perimeter of 2D Shapes – I can work out the area and perimeter of 2D shapes by form expression & I know the formulae for areas of 2D shapes (including trapezia)		
	Circles 1 – I can find the area and circumference of a circle, semi-circle and quarter circle and solve real problems involving circles		
	Circles 2 - I can solve problems involving circles without a calculator (answer in terms of π)		
	Volume – I can work out the volume of a cube, cuboids and prisms and apply to real problems		
	Volume of a Cylinder – I can work out the volume of a cylinder and apply to real problems		
	Surface Area – I can work out the total surface area of a cube, cuboids and prisms		
	Vectors 1 – I can add and subtract vectors both in a column and on a grid (write and draw)		
	Vectors 2 - I can find the resultant of two vectors and find multiples of a vector and represent both in a column vector and drawn on a grid		
	Cones & Spheres – I can work out the volume and surface area of a cone and sphere, given the formula		
Data	Averages – I can calculate the mode, median and mean of a set of a data from a list and a frequency table and compare 2 sets of data		
	Stem & Leaf Diagrams – I can construct and interpret stem and leaf diagrams including back-to-back stem and leaf diagrams		
	Bar Charts – I can draw and interpret comparative and composite bar charts		
	Pie Charts – I can draw and interpret pie charts		
	Scatter Graphs – I can plot and interpret scatter graphs and determine if there is a relationship between sets of data (using correlation)		
	Line of Best Fit – I can draw a line of best fit on a scatter graph and use this to estimate values		
Algebra	Sequences – I can generate terms in a sequence and draw the pattern of a sequence		
	Nth Term – I can identify the nth term of a linear sequence		
	Straight Line Graphs – I understand and can use $y = mx + c$ and I can plot straight line graphs from a table (including negatives)		
	Real Life Graphs – I can draw and interpret real life graphs including conversion and distance time graphs		

LEARNING TOOLS		
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MY KEY TOPICS	KEY TOPIC	
	π (pi)	π (pi) is the relationship between the _____ and _____ of a circle
KEY QUESTIONS	What does h represent in the formula below?	What does r represent in the formula below?
KEY EQUATION	Volume of a Cylinder = $\pi r^2 h$	
PRE-LEARNING	Y11 Foundation Cycle 2 HegartyMaths Videos: <ul style="list-style-type: none"> • 534 (Circumference of a Circle: 1) • 539 (Area of a Circle: 1) • 572 (Cylinder: 1) 	<ul style="list-style-type: none"> • 622 (Vectors: 1 – Vectors & Scalar) • 430: (Stem & Leaf Diagrams: 1) • 197: (Linear Sequences: term-to-term rule)
CAREERS	<ul style="list-style-type: none"> • Carpenters and architects need to be able to use the circumference of a circle when building or designing a physical object. • Stockbroker: They need to invest their client's money by buying and selling stocks. They will use line graphs to see patterns which will help reveal overall trends and help them make the best decision on where to invest their client's money. 	

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YEAR 11 FOUNDATION CYCLE 3: NUMBER, SHAPE & RATIO

Knowledge		Prior	End of topic
Number	Decimal manipulation – I can order decimals and fractions as well carry out the 4 operations using decimals and I can convert from decimals to fractions and percentages		
	Percentages – I can calculate a percentage of an amount and interpret a profit or loss		
	Percentage Change – I can express a given number as a percentage of another in more complex situations		
	Compound Interest – I can find an amount after a repeated percentage change (including depreciation)		
	Reverse Percentages – I can find the original amount given the final amount after a percentage increase or decrease		
Ratio	Ratio Problems – I can solve problems involving ratio (including with measures and shapes)		
	Ratios & Measures – I can use ratio to convert between units of measure and use for shapes and their enlargements		
	Sharing in a Ratio – I can divide a quantity into 2 and 3 parts in a given ratio and solve worded problems		
	Compound Measures 1 – I can solve problems involving Speed, Distance and Time		
	Compound Measures 2 – I can solve problems involving Density, Mass and Volume		
	Exchange Rates – I can calculate using exchange rates and decide which is better value		
	Best Buy Problems – I can calculate using the unitary method which item is best value in a 'Best Buy' problem		
Shape	Similar Shapes – I understand the properties of similar shapes and can find the scale factor of an enlargement between two shapes		
	Similar Shapes 2 – I can use similarity to find unknown lengths and missing angles and calculate perimeters of similar shapes		
	Congruence – I can recognise congruent shapes and use congruence to work out unknown angles and sides in shapes		

LEARNING TOOLS

MY KEY TOPICS	KEY TOPIC 1				
	KEY TOPIC 2				
KEY WORDS	Speed	Density	Mass	Similar	
KEY EQUATION		Volume = _____ / _____			
PRE-LEARNING	Y11 Foundation Cycle 3 HegartyMaths Videos: <ul style="list-style-type: none"> • 332 (Share in a given ratio: 1) • 759 (Profit & Loss: 1) • 94 (Compound Interest) • 763 (Best Buy: 1) • 608 (Similar Polygons: 1) 				
CAREERS	<ul style="list-style-type: none"> • Car Dealer: With car loans, you often pay monthly. This translates to a portion of the payment covering the loan balance on a monthly basis, while the rest is directed toward covering the interest payment. By reducing the outstanding loan balance every month, you reduce the payable interest, meaning, a greater portion of the monthly payment is directed toward principal repayment. • Textile Designer: Combining different similar shapes to create a pattern in the fabrics. 				

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YEAR 11 FOUNDATION	CYCLE 4: ALGEBRA & SHAPE
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Knowledge		Prior knowledge	End of topic
Algebra Recap	Simultaneous Equations - I can solve simultaneous equations where one or both equations need changing and apply to worded problems		
	Factorising Quadratics – I can factorise quadratic expressions of the form $x^2 + bx + c$		
	Solving Quadratics – I can solve a quadratic equation by factorising and know what the roots are on a graph		
	Quadratic Graphs – I can draw a quadratic curve when given a table by substituting points into a function and plotting on an axis		
	Drawing Non-Linear Graphs – I can draw and interpret graphs of $y = 1/x$ from a table of values. I can draw cubic functions from a table of values		
	Forming & Solving Equations – I can form expressions and solve equations from a worded problem, angles problem and area / perimeter problem		
	Inequalities – I can use the correct notation to show greater than, less than and equal to		
	Inequalities 2 – I can identify whole numbers which satisfy an inequality and represent inequalities on a number line		
	Solving Inequalities – I can solve linear inequalities and represent solutions on a number line		
	Algebraic Fractions – I can use factorisation to simplify simple algebraic fractions		
Shape	Angles - I can find unknown angles in special triangles and give reasons for my calculations		
	Angles in Polygons - I can calculate the interior and exterior angles of regular polygons		
	Angles in Parallel Lines – I can understand and use the angles properties in parallel lines and find missing angles using corresponding, alternate and supplementary angle rules		
	Bearings – I can find and use three figure bearings and use angles at parallel lines to work out bearings		
	Bearings 2 – I can solve problems involving bearings and scale diagrams		
	Loci – I can use a compass to draw the locus of a point and use to solve problems		
	Constructions – I can use a compass to complete angle and perpendicular bisectors		

LEARNING TOOLS					
MY KEY TOPICS	KEY TOPIC 1				
	Bearing	Used by planes and ships, must always include 3 digits, start from north and rotate clockwise			
KEY WORDS	Roots	Elimination	Locus	Intersection	
KEY EQUATIONS		Interior $(n-2) \times 180$	Exterior $360/n$	where n is the number of sides	
PRE-LEARNING	Y11 Foundation Cycle 4 HegartyMaths Videos: <ul style="list-style-type: none"> • 190 (Simultaneous Equations by Elimination: 1) • 194 (Simultaneous Equations by Substitution) • 251 (Drawing Quadratic Graphs from a Table) • 560 (Interior Angles in Polygons) • 492 (Bearings: 1) 				
CAREERS	<ul style="list-style-type: none"> • Health Care Professional: The health care field, including doctors and nurses, often use equations to calculate medical doses. Equations are also used to determine how different medications may interact with each other and how to determine correct dosage amounts to prevent overdose with patients using multiple medications. Doctors also use equations to calculate doses based on a patient's weight. • City Planner: They use loci to create the sense of continuity and authenticity of a particular location, making sure that stores, residential buildings, medical facilities, etc are at appropriate intervals from each other. 				

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YEAR 11 FOUNDATION	POST MOCK
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Number / Ratio / Shape Recap	Knowledge	Prior knowledge	End of topic
	21 Exam Papers – First 4 questions from each		
	Probability 1 – I can calculate the probability of a single event happening		
	Probability 2 – I can list all the outcomes of an event systematically		
	Data – I can work out the averages from a set of data as well as tables. Identifying the modal class. I can complete a frequency polygons		
	Prime Factors – Use a factor tree to write a number as a product of its primes		
	Angles – Triangles / Polygons. Angles in Parallel Lines		
	Bearings – I can use the 3 rules of bearings and use to solve problems		
	Pythagoras Theorem - I can solve problems involving right angled triangles and Pythagoras theorem		
	Trigonometry – I can confidently how to label a triangle and find unknown lengths and angles.		
	Problem Solving – I can work out Area and Perimeter of 2D shapes and problem solve using algebra. I can also make expressions.		
	Ratio – I can Simplify and compare ratio. I use ratios in problem solving questions		
	Transformations – I can complete questions on Rotation, Reflection, Translation and enlargement.		
	Number – Ordering Integers / FDP, Ordering Fractions, Long Multiplication and Division		
	Best buy - I can identify, work out and prove best buy offers using decimals		
	Speed, distance and time – I can work out the speed, distance and time of exam questions as well as density, mass and volume.		

LEARNING TOOLS

MY KEY TOPICS	KEY TOPIC 1	
	KEY TOPIC 2	

KEY WORDS	Rotate	Enlarge	Anti -Clockwise	Prime Factor
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KEY EQUATION	SOH CAH TOA
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PRE-LEARNING	Y11 Foundation Cycle 4 HegartyMaths Videos: <ul style="list-style-type: none"> • 351 (Probability of Single Events: 1) • 498 (Pythagoras: longer side) • 499 (Pythagoras: shorter side) • 656 (Combined Transformations: 1)
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CAREERS	<ul style="list-style-type: none"> • Construction Workers: People involved with constructing houses and buildings need to know lots of geometry, including trigonometry. Components like walls need to be kept straight and aligned, with triangle shapes added to give the required strength. • Flight engineers have to take in account their speed, distance, and direction along with the speed and direction of the wind. The wind plays an important role in how and when a plane will arrive where ever needed this is solved using vectors to create a triangle using trigonometry to solve.
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