

Year 9 SOW - Middle

Y9 Middle -HT1					
Chapter	Lesson	Learning objective	R	A	G
Decimal numbers	Ordering decimals	Know the value of each digit in a whole number (including decimals) To be able to order decimal numbers according to size			
	Addition / subtraction	To carry out additions and subtractions with decimals (including problem solving)			
	Order of operations	To use BIDMAS to carry out calculations			
	Powers of 10	To understand and work with both positive and negative powers of ten			
	Multiplication/division of decimals	To consolidate multiplying decimal numbers			
		To consolidate dividing decimals			
	Rounding	To round numbers, where necessary, to a suitable degree of accuracy i.e decimal place and significant figures			
	Solving problems	To solve real-life problems involving multiplication or division			
	Standard form	To understand and work with standard form, using both positive and negative powers of ten			
Ratios and Proportion	Simplifying ratios	To write a ratio as simply as possible			
	Ratios and sharing	To use ratios to find totals or missing quantities			
	Solving problems	To use ratio to solve problems in a real life context (including recipes)			
Percentages	Simple interest	To understand what simple interest is To solve problems involving simple interest			
	Percentage increases and decreases	To calculate the result of a percentage increase or decrease			
		To calculate simple percentage change			
		To use the multiplier to calculate percentage increase/decrease			
	Compound Interest	To calculate compound interest/depreciation			
	<u>Repeated percentage changes</u>	<u>To calculate the result of repeated percentage changes</u>			
	Calculating the original value.	To calculate the original value(reverse percentage)			
Fractions	Adding and subtracting fractions	To add or subtract mixed numbers			
	Multiplying fractions	To multiply two fractions including mixed numbers			
	Dividing fractions and mixed numbers	To divide one fraction or mixed number by another			
	Problem solving with fractions	Solve problems involving fractions			
Y9 Middle -HT2					
Chapter	Lesson	Learning objective	R	A	G
Algebra	Like terms	To simplify algebraic expressions by combining like terms			
	Using index notation	To write algebraic expressions involving simple powers			
	Expanding brackets	To multiply out brackets			
	Factorising algebraic expressions	To factorise expressions			
	Expand and simplify	To expand expressions with two brackets and simplify e.g $2(5x+5) - 3(2x - 4)$ To expand double brackets			
Equations	Solving equations	To solve one step equations (recap)			
		To solve simple two step equations			
		To solve equations which include brackets			
		To solve equations with unknown on both To solve equations with fractional coefficients.			
Formulae	Using formulae	To substitute values into simple formulae			
		To change the subject of a formula			

Y9 Middle -HT3					
Chapter	Lesson	Learning objective	R	A	G
Solving equations graphically	Graphs from equations in the form $y=mx+c$	To draw a straight line graph from any linear equation using the table of values with and without calculator To solve a linear equation from a graph			
	Solving simultaneous equations by graphs	To solve a pair of simultaneous equations			
	Graphs from quadratic equations	To draw graphs from quadratic equations			
	Solving quadratic equations by drawing graphs	To solve a quadratic equation by drawing a graph			
	<u>Simultaneous equations</u>	<u>Solve two linear equations simultaneously using the elimination method</u>			
	<u>Exponential growth graphs</u>	<u>To interpret and draw exponential growth graphs</u>			
Circles	Circumference of a circle	To calculate the circumference of a circle			
	Area of a circle	To calculate the area of a circle			
	Mixed problems	To solve problems involving the circumference and area of a circle			
Surface area and volume of 3D shapes	Metric units for area and volume	To convert from one metric unit to another (1litre = 1000cm ³ and 1000 litre = 1m ³)			
	Volume of a prism	To calculate the volume of a prism (cuboid, triangular prisms etc...)			
	Surface area of a prism	To calculate the surface area of a prism			
	<u>Volume of a cylinder</u>	<u>To calculate the volume of a cylinder</u>			
	<u>Surface area of a cylinder</u>	<u>To calculate the curved surface area of a cylinder</u> <u>To calculate the total surface area of a cylinder</u>			
Y9 Middle -HT4					
Chapter	Lesson	Learning objective	R	A	G
Polygons	Polygons	To know the names of polygons To know the difference between an irregular polygon and a regular polygon			
	Angles in polygons	To work out the sum of the interior angles of a polygon			
	Interior angles of regular polygons	To work out the sizes of the interior angles in regular polygons To work out the sizes of the exterior angles in regular polygons			
Enlargements	Using Enlargements	To enlarge a 2D shape by a positive scale <u>To enlarge a 2D shape by a negative / fractional scale factor</u>			
Similar shapes	Similar shapes	To understand what similar shapes are <u>To use length / area / volume scale factor</u>			

Y9 Middle -HT5					
Chapter	Lesson	Learning objective	R	A	G
Using data	Scatter graphs and correlation	To describe correlation from two related scatter graphs To draw the line of best fit			
	Stem and leaf diagrams	To construct stem and leaf diagrams To use stem and leaf diagrams to find mode, median and range of a set of data			
	Two-way tables	To complete two-way tables			
	Comparing two or more sets of data	To compare two sets of data from statistical tables and diagrams			
	Time-series graphs	To use and interpret a variety of time-series graphs			
	Statistical investigations	To plan a statistical investigation			
Compound units	Distance	To work out the distance travelled in a certain time at a given speed To use and interpret distance–time graphs			
	Speed	To work out the speed of an object, given the distance travelled and the time taken			
	Time	To work out the time an object will take on a journey, given its speed and the distance travelled			
	Density	To understand and use density and other compound units			
Pythagoras' theorem	Calculating the length of the hypotenuse	To calculate the length of the hypotenuse in a right-angled triangle			
	Calculating the length of a shorter side	To calculate the length of a shorter side in a right-angled triangle			
	Using Pythagoras' theorem to solve problems	To use Pythagoras' theorem to solve problems			
Y9 Middle -HT6					
Chapter	Lesson	Learning objective	R	A	G
Trigonometry	Introduction of trigonometric ratios	To understand what the trigonometric ratios sine, cosine and tangent are			
	Using trigonometric ratios to find lengths	To find an unknown length of a right-angled triangle given one side and another angle			
	Using trigonometric ratios to find angles	To find the angle identified from a trigonometric ratio			
	<u>Using trigonometry in non-right angled triangle</u>	<u>To use the sine rule / cosine rule</u>			
Revision and GCSE preparation	Re-teach & revise	Help pupils practice and revise topics covered in their current course			
Review					