Year 8 SOW - Middle

Chapter	Lesson	Learning objective	R	A	G
		Y8 Middle- HT1			
Working with decimals	Ordering decimals and operations	To be able to order decimal numbers according to size To use the four operatios with deciamals To be able to multiply and divide by 10, 100 and 1000 (including decimals) To carry out calculations from information given in tables			
	Calculations with measurements	To convert between common metric units To use measurements in calculations			
	Order of operations	To use the rules of BIDMAS to carry out calculations			
Rounding and Estimation	Significant figures	To round a number to 1 dp /2 dp/3 dp (revision)			
		To round a number to 1 sf etc			
	Estimating answers	To use rounding to estimate rough answers to calculations			
Negative numbers	Adding and subtracting with negative numbers	To carry out additions and subtractions involving negative numbers			
	Multiplying and dividing negative numbers	To carry out multiplications and divisions involving negative numbers.			
Standard form	Powers of 10	How to multiply and divide by positive / negative powers of 10			
	Standard form with large / small	To write large / small numbers in standard form			
		To write a number in standard form as an ordinary number			
	Multiplying / dividing with numbers in standard form	To multiply / divide with numbers in standard form			
	Addition / subraction with numbers in standard form	**To add / subract with numbers in standard form**			
Multiples / Factors and primes	Squares, cubes and roots	To understand and use squares and square roots			
		To understand and use cubes and cube roots			
		To estimate the square root and of a number			
	Factors, multiples and prime number	To be able to list factors / mutiples of a number			
		To be able to list prime numbers up to a 100			
	HCF and LCM	To write a number as a product of its prime factors with or without a calculator			
		To be able to find HCF and LCM by listing factors / multiples			
		To be able to find HCF and LCM using factor tree			
Review					

Y8 Middle- HT2					
Chapter	**Lesson**	**Learning objective**	**R**	**A**	**G**
Area and volume	Area of a triangle	To work out the area of a rectangle			
		To work out the area of a triangle			
	Area of a parallelogram	To work out the area of a parallelogram			
	Area of a trapezium	To work out the area of a trapezium			
	Circumference / Area of a circle	To know the definition of a circle and the names of its parts			
		To calculate the circumference / area of a circle			
	Surface areas of cubes and cuboids	**To find the surface areas of cubes and cuboids**			
	Volume of a cuboid	To work out the volume of a cuboid			
Expressions	Simplify Expressions	To simplify algebraic expressions			
		To write algebraic expressions involving powers			
	Expanding brackets	To multiply out brackets **(including double brackets)**			
	Using algebraic expressions	To use algebraic expressions in different contexts (including perimeter, area and angles)			
		To identify equivalent expressions			
Sequences	Special sequences	To know and understand the Fibonacci sequence			
		Investigate other sequences such as square and triangle number			
		To use function machines to generate sequences			
	The nth term of a sequence	To use the term-to-term rule			
		To use the nth term rule to generate sequence			
		To find the nth term of a sequence			
Review					
Y8 Middle- HT3					
Chapter	**Lesson**	**Learning objective**	**R**	**A**	**G**
Graphs	Coordinates	To plot more complex coordinates in all four quadrants			
	Graphs from a table	To draw a graph from a table of values with/without calculator			
	Gradient (steepness) of a straight line	To work out the gradient in a graph from a simple linear equation			
		To work out an equation of the form $y = mx + c$ from the graph			
	Graphs from simple quadratic equations	To recognise and draw the graph from a simple quadratic equation using calculator			
Equations	Equations	To solve one step equations			
		To solve two step equations			
		To solve equations which include brackets			
		To solve equations with the variable on both sides			
		To solve equations with fractional coefficients.			
Formulae	Substituting into formulae / rearranging	To use algebra to write formulae			
		To substitute values into formulae			
		To change the subject of simple formulae			
Review					

Y8 Middle- HT4					
Chapter	**Lesson**	**Learning objective**	**R**	**A**	**G**
Fractions	Adding and subtracting	To convert a fraction into a decimal/percentage			
		To add and subtract fractions including mixed numbers			
	Multiplying fractions and integers	To multiply a fraction and an integer			
		To multiply 2 fractions			
	Dividing with integers and fractions	To divide a fraction or a mixed number by an integer			
		To divide an integer by a unit fraction			
		To divide 2 fractions			
Percentages	Calculating percentages	To write a percenatge as a fraction/decimals			
		To write one quantity as a percentage of another			
	Percentage increase/decrease	To calculate the result of a percentage increase or decrease with a calculator			
		To calculate the result of a percentage increase or decrease without a calculator			
		To use a multiplier to calculate a percentage increase / decrease			
		To understand the difference between simple and compound interest			
	Problem solving with percentages	To solve simple percentage problems (including real life context)			
	Calculating a change as a	**To work out a change in value as a percentage increase or decrease**			
Ratio 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)			
	Scale Drawing and ratios	To understand and use scale drawings including map ratios			
	Direct proportion	To understand the meaning of direct proportion			
		To find missing values in simple problems involving proportion (value for money)			
		To represent direct proportion graphically			
	Inverse proportion	To understand what is meant by inverse proportion			
		To solve problems using basic inverse proportion			
		To use graphical and algebraic representations of inverse proportion			
Review					

Y8 Middle- HT5					
Chapter	**Lesson**	**Learning objective**	**R**	**A**	**G**
Angles	Properties of triangles and quadrilaterals	To understand all types of triangles			
		To understand all types of quadrilaterals			
		To know the names of other polygons			
	Measuring and drawing angles	To consolidate on using a protractor to measure / draw an angle			
		To understand parallel/perpendicular lines			
	Calculating angles	To calculate angles at a point (including problem solving such as solving equations)			
		To calculate angles on a straight line (including problem solving such as solving equations)			
		To calculate vertically opposite angles (including problem solving such as solving equations)			
		To know that the sum of the angles in a triangle is 180° including isosceles and equilateral triangle (including problem solving)			
		To know that the sum of the angles in a quadrilateral is 360°			
	Angles in parallel lines	**To calculate angles in parallel lines**			
	Angles on a polygon	**To calculate interior and exterior angle of a polygon**			
Transformations	Rotations	To understand how to translate a shape (mentioning object and image are congruent shapes)			
	Translations	To understand how to rotate a shape (mentioning object and image are congruent shapes)			
	Reflections	To understand how to reflect a shape (mentioning object and image are congruent shapes)			
		To use a coordinate grid to reflect shapes			
	Enlargements	**To understand how to enlarge a shape by a positive scale factor (mentioning object and image are similar shapes)**			
	Describing transformation	**To be able to describe simple transformations**			
Review					

Y8 Middle- HT6					
Chapter	**Lesson**	**Learning objective**	**R**	**A**	**G**
Probability	Probability scales	To use a probability scale to represent a chance			
		Probability of equally likely outcomes / Probability of events not occuring			
	Sample space	To use sample spaces to calculate probabilities			
	Experimental probability	To calculate probabilities from experiments			
Interpreting / Representing data	Pie charts	To create and interpret simple pie charts			
	Scatter graphs and correlation	To read and plot scatter graphs			
		To describe correlation			
	Grouped frequency tables	To create a grouped frequency table from continous/discrete data			
	Averages	To understand and calculate the mean, mode and median			
		To use the mean and range to compare data from two sources			
		To understand when each different type of average is most useful			
Constructions	Constructions	To construct the mid-point and the perpendicular bisector of a line			
		To construct an angle bisector			
		To construct triangles accurately			
Review					