Year 8 SOW - Higher

Y8 Higher- HT1					
Chapter	**Lesson**	**Learning objective**	**R**	**A**	**G**
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 numbers	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 Higher- HT2					
Chapter	**Lesson**	**Learning objective**	**R**	**A**	**G**
Area and Volume	Recap- Area	To work out the area of triangle / parallelogram / 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			
	Circles and Sectors	**To be able to calculate the length of an arc and area of a sector**			
	Surface areas of cubes and cuboids	To find the surface areas of cubes and cuboids			
	Volume of prisms	**To calculate the volume of basic prisms**			
Expressions	Like terms	To simplify algebraic expressions			
	Using basic index rules	Use the rules of indices to simplify expressions			
	Expanding brackets	To expand brackets			
		To expand and simplify 2 single brackets e.g 2(x+1) - 3(2x-1)			
		To multiply out double brackets and simplify			
	Factorising Expression	To factorise expressions			
		Factorise expressions with more than one variable			
	Quadratic expressions	**To be able to factorise simple quadratic 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			
	Working out the *n* th term of a sequence	To use the *n* th term rule to generate sequence			
		To work out the *n* th term of a sequence			
	Working out the *n* th term of simple quadratic sequences	**To Work out the *n* th term of simple quadratic sequences**			
Review					

Y8 Higher- HT3					
Chapter	**Lesson**	**Learning objective**	**R**	**A**	**G**
Equations	Solving Equations	To solve one and two step equations (Recap)			
		To solve equations involving brackets			
		To solve equations with unkown on both sides			
		To solve equations with brackets and **fractional coefficients**			
		To solve equations in different context (area, perimeter, angles etc...)			
		To solve simple equations involving squares			
		To form equations from worded problem			
Formula	Rearranging formulae	To use algebra to write formulae			
		To substitute values into a formula			
		To change the subject of a formula			
		To change the subject of a formula involving squares			
Challenge cards	**Using graphs to solve equations**				
Linear Graphs	Graphs from linear equations	To recognise and draw the graph of a linear equation using table of values / using a calculator			
	Gradient (steepness) of a straight line	To work out the gradient / y-intercept of a graph from a linear equation			
		To work out an equation of the form $y = mx + c$ from its graph			
		To work out the equation of a linear graph that is parallel to another line			
		Work out the equation of perpendicular lines			
	Graphs from simple quadratic equations	To recognise and draw the graph from a simple quadratic equation using calculator			
Challenge cards					
Review					

Y8 Higher- HT4					
Chapter	**Lesson**	**Learning objective**	**R**	**A**	**G**
Fractions	Adding and subtracting fractions	To add or subtract fractions and mixed numbers			
	Multiplying / dividing fractions	To multiply / divide fractions including mixed numbers			
		To solve problems involving fractions (area, perimeter etc..)			
Percentages	Calculating percentages	To write a percenatge as a fraction/decimals			
		To write one quantity as a percentage of another			
	Calculating percentage increases and decreases	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			
	Calculating a percentage change	To work out a change in value as a percentage increase or decrease			
	Repeated percentage change	To solve problems involving repeated percentage change			
	Reverse percentages	To work out the original amount after a percentage increase / decrease			
Challenge cards					
Ratio and Proportion	Ratios and sharing	To write a ratio as simply as possible			
		To use ratios to find totals or missing quantities			
		To use ratio to solve problems in a real life context (including recipes)			
	Direct and inverse proportion	To understand the meaning of direct proportion			
		To find missing values in problems involving direct proportion			
		To understand what inverse proportion is			
		To find missing values in problems involving inverse proportion			
		To use abgebraic **representations of direct / inverse proportion**			
		To recognise direct and inverse proportion and work out missing values			
		To represent direct / **inverse** proportion graphically			
		To use ratio to compare lengths, areas and volumes of 2D			
		To convert metric units for area and volume			
Challenge cards					
Review					

Y8 Higher- HT5					
Chapter	**Lesson**	**Learning objective**	**R**	**A**	**G**
Angles	Parallel lines	To calculate angles in parallel lines			
	The geometric properties of quadrilaterals	To know the geometric properties of quadrilaterals			
	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)			
		To be able to describe rotation			
	Translations	To understand how to rotate a shape (mentioning object and image are congruent shapes)			
		To be able to describe translation			
	Reflections	To understand how to reflect a shape (mentioning object and image are congruent shapes)			
		To use a coordinate grid to reflect shapes			
		To be able to describe reflections			
	Enlargements	To understand how to enlarge a shape by a positive scale factor (mentioning object and image are similar shapes)			
		To understand how to enlarge a shape by a **negative scale factor**			
		To be able to describe enlargement			
	Combined transformation	To be able to use combined transformations			
		To be able to describe combined transformations			
Challenge cards					
Review					
Y8 Higher- 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			
	Estimates of probability	To use relative frequency to estimate probabilities			
	Probability tree diagrams	**To use probability tree to work out probabilities**			
Challenge cards					
Interpreting / Representing data	Pie charts	To draw pie charts relative to data size			
	Scatter graphs and correlation	To read and plot scatter graphs			
		To describe correlation			
		To draw the line of best fit and estimate values			
	Interpreting graphs and diagrams	To interpret different charts seen in the media			
	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			
		To estimate the mean from grouped data			
Challenge cards					
Constructions	Constructions	To construct the mid-point and the perpendicular bisector of a line			
		To construct an angle bisector			
		To construct a perpendicular to a line from a given point			
		To construct a right-angled triangle			
Challenge cards					
Review					