Year 7 ~ Curriculum Map for Maths

What are the intended aims for this year's curriculum? To ensure that students have at least a basic understanding of all the topics they are likely to encounter at GCSE and that they develop their problem solving skills

	Term 1	Aim of A&R	Term 2	Aim of A&R	Term 3	NO A&R	Term 4	Aim of A&R	Term 5	Aim of EOY exam	Term 6	
	Topic(s): Number		Topic(s): Expressions		Topic(s): Angles		Topic(s): Fractions and decimals		Topic(s): 2D shapes		Topic(s): Handling Data and Probability	
'Big idea(s)' / fundamental concepts	Understand Key vocabulary and notation in mathematics and how these can be used in calculations		To rearrange and manipulate algebraic expressions		To either measure or calculate angles using a variety of angle facts.		Being able to calculate fluently in both fractions and decimals and convert between the two		To Calculate the area and perimeter of different 2D shapes		To collect, organise and interpret data and start developing an understanding of the reliability of the data. To calculate the probability of an event and understand the difference between theoretical and experimental probability.	
Knowledge to be learnt	Product of Prime Factors LCM & HCF of two numbers Index Laws Find the reciprocal of a number Zero & Negative Powers Estimate roots & powers Rational & Irrational Numbers Simplify Surds Write numbers in Standard Form BIDMAS	BASELINE ASSESSMENT	Writing expressions Simplify expressions by collecting like terms Multiply and divide terms including indices Substitute into expressions including index notation Multiply a single term over a bracket Expand two single brackets & simplify the expression Factorise by taking out common factors Expand two brackets s Factorise into two brackets	Review of Term 1	Draw and measure angles and line segments Angles on lines and about a point Angles in triangles and quadrilaterals . Angles in parallel lines including vertically opposite, corresponding, alternate and co-interior angles Bearings. Exterior angles of polygons Interior angles of polygons		Use calculator keys for fractions – r Fractions of a quantity Express one quantity as a fraction of another Addition and subtraction including mixed numbers s Multiplication of fractions including mixed numbers Division of fractions including mixed numbers Solve problems with fractions Convert between fractions and terminating decimals Convert from fractions to recurring decimals Multiply and divide by decimals Round numbers to the nearest power of 10, decimal place or significant figure Estimate a calculation using significant figures	Review of Term 2 + 3 (40% each) and Term 1 (20%)	Revision area/perimeter of rectangle, triangle and parallelogram Calculate the area of a trapezium Circumference of a circle, inc in terms of pi Area of a circle Compound Area . Perimeters of 2D shapes involving circles Arc length Sector area Convert between units of area	Review of Term 1+2+3+4 + 5 (approx 20% each)	Construct and interpret bar charts, frequency tables, pictograms for categorical data Construct and interpret vertical line graphs or bar charts for ungrouped and grouped data Types of data including primary, secondary, qualitative, quantitative, continuous and discrete Averages and range from a list Identify an outlier and understand the impact this may have on different types of averages Find averages from a stem and leaf diagram Compare two sets of data using averages and range Understand the probability scale from 0-1 and associated words Understand that the probabilities of all possible outcomes sum to 1 To calculate the probability of an event and give the answer as a fraction To list outcomes To use sample space diagrams to calculate the probability of two mutually exclusive events To understand the difference between theoretical and experimental probability. To calculate relative frequency	
Key vocabulary	Rational, surds, indices, reciprocal, standard form, product, prime, HCF, LCM		Factorising, brackets, expression, indices, substitution, expand, like terms, simplify		Tangent, chord, alternate, corresponding, bearing, interior, exterior, polygon, parallel		Improper fraction, proper fraction, mixed number, recurring, terminating, significant figure, estimate, numerator, denominator		perimeter, area, circumference, pi, sector, arc, parallelogram, trapezium		Quantitative, qualitative, stratified sample, correlation, primary, secondary, outliers, extrapolations independent, mutually exclusive, relative frequency, sample space, outcome	
The role of reading and comprehension	Answering worded questions and real life problems involving LCm and HCF.		To write expressions based on interpreting the question		To identify different key vocabulary		To comprehend which operation a question requires even if it is not specifically named.		Interpreting worded problems such as working out the total cost to fertilise a garden		Interpreting data in context and making comparisons	

The role of independent extended writing	N/A		N/A		N/A		N/A		N/A		N/A	
The role of maths/ numeracy	All involves maths		All involves maths		All involves maths		All involves maths		All involves maths		All involves maths	
Links to careers/ aspirations	Cryptography, encryption, computer security, astronomy, Science, engineering		Modelling maximum and minimum problems, using real life formulae, computer programming		Bearing are use to avoid collision on ships/airplanes Architecture Tiling		Use of fractions in every day life (eg quarter of a tank of petrol, half a cake etc).		Building, architecture, carpet fitting, jewellery/clothing design, race engineering		Graphs are used in real life such as business, banking, newpapers etc Data Analyst, economist etc Risk assessment such as insurance or actuary. Weather forecast.	
Core skills	To be able to: Find factors and multiples of numbers To understand and use powers To understand place value and the effect of multiplying/dividing by multiples of 10		To be able to: Write expressions using correct algebraic notation. To be able to collect like terms To multiply and divide algebraic expressions and recognise common factors To substitute into expressions		To be able to: Use a protractor Use different angle facts in the correct context Measure and draw a bearing Identify different types of polygons. Use different formulas		To be able to: Carry out four operations with fractions and decimals Convert between fractions and decimals. Round numbers Estimate answers		To be able to: Remember different formula for areas of 2D shapes and substitute into them.		To be able to: Collect, organise and interpret data in different graphical formats To summarise data using the range or averages, understanding the limitations of each, and use these to make comparisons in context.	
Dept. enrichment activities									G&T club for year 7		Supporting year 5 G&T day Codebreaking with year 6	
Home learning opportunities	Research large/small numbers on the internet...can you find the distance to the moon in standard form? What is the length of a germ? Are there any important irrational numbers in maths?		Research Task: Where does the Fibonacci sequence exist in real life?		Naming different 3D shapes around the house or outdoors. Measuring angles around the house and identify which are acute/obtuse/reflex Measure the lengths of objects accurately using a ruler or tape.		Cut things into different size fractions, note any equivalence (eg one half is the same as two quarters) Estimate the cost of the shopping Add/Subtract money, calculate change.		Name different 2D shapes in the house. Calculate the area of different rooms. Walk around the perimeter of the garden.		Read and interpret graphs/tables in newspapers or other articles. Read bus/train timetables. Calculate the average time taken to do a repeated journey (such as the journey to school). Discuss the likelihood of different events happening. Play games involving cards/dice.	