Mathematics – Age Related Milestones Year 8

QUEEN'S PARK HIGH SCHOOL

	WORKING TOWARDS		MEETING		EXCEEDING	
HANDLING DATA Collecting data	Collect data		Design data collection		Introduce idea of a sample. Consider bias	
Processing & Analysing data	Construct frequency tables, bar charts and pictograms. Calculate Mean, Mode, Median and Range (MMMR)		Draw and interpret pie charts and scatter graphs Calculate Compare MMMR		Draw line of best fit and make predictions	
ALGBERA Manipulation	Use and interpret algebraic notation Substitute numerical values into simple formulae and expressions Simplify algebraic expressions by collecting like terms Expand single bracket 2(x +8)		Use and interpret algebraic notation Expand and simplify brackets Factorise into single brackets Understand and use simple mathematical formulae Rearrange formulae to change the subject		Expand double brackets Factorise a quadratic Substitute numerical values into scientific formulae	
Equations	Solve linear equations with one unknown algebraically		Solve multi-step linear equations with unknowns on both sides including brackets		Derive equations Solve multi-step linear equations with unknowns on both sides including fractions	
Sequences	Generate terms of sequence from a term-to-term rule Recognise simple arithmetic progressions		Generate terms of a sequence from term-to-term or position-to-term rule. Deduce expressions to calculate the nth term		Recognise and use Fibonacci type and quadratic sequences	
NUMBER Basic skills	Understand and use place value for decimals, measures and integers Order positive and negative integers and decimals Round to nearest 10, 100, 1000		Order positive and negative fractions Round numbers and measures to several dp		Round numbers and measures to several sf	
Calculations	Use formal written methods for addition, subtraction, multiplication and division of integers Multiply and divide by 10, 100, 1000 Understand the order of operations with basic calculations Understand negative numbers in context		Use formal written methods for addition, subtraction, multiplication and division of decimals Understand the order of operations (BIDMAS) Use the four operations with negative numbers		Understand the order of operations with negative numbers (BIDMAS)	
Fractions/decimal / %	Represent fractions using diagrams and on a number line Identify and use equivalent fractions Simplify fractions Add and subtract fractions with same denominators Find a fraction of an amount (unit fractions) Multiply fractions Define percentages as number of parts per hundred Calculate percentages of quantities using non-calculator and calculator methods (50%, 25% etc)		Convert between mixed and improper fractions Compare equivalent fractions Convert between fractions and decimals Add and subtract fractions with different denominators Find a fraction of an amount (non-unit fractions) Divide fractions Calculate percentages of quantities using non-calculator and calculator methods (15%, 22% etc) Interpret percentages as fractions and decimals Express one quantity as a fraction of another		Find a fraction of an amount (involving decimal amounts) Calculate percentages of quantities using non-calculator and calculator methods (involving decimals 0.2%) Express one quantity as a fraction of another	
Ratio /Proportion	Use ratio notation including reduction to simplest form		Divide a given quantity into two or more parts Understand the relationship between ratio and fractions Solve simple problems involving proportion		Divide a given quantity into two or more parts including worded/reverse problems Solve problems involving proportion	
SHAPE Measure/Drawg	Use a protractor to measure and draw angles					
Properties of angles	Use standard notation when labelling and referring to parts of a triangle		Apply the properties of angles at a point, on a straight line and vertically opposite		Understand and use alternate and corresponding angles on parallel lines	