

Curriculum Content Map												
Subject: Year 8 Maths												
Month		Term 1				Term 2				Term 3		
		September	October	November	December	January	February	March	April	May	June	July
		Number	Geometry and Measures		Statistics	Algebra	Statistics	Number	Geometry and Measures	Number	Statistics	Number
	Units of Work	Maths Progress 2 Number	Maths Progress 2 Area and volume	Gap Filling	Maths Progress 2 Statistics, graphs and charts	Maths Progress 2 Expressions and equations	Maths Progress 2 Real-life graphs	Maths Progress 2 Decimals and ratio	Maths Progress 2 Lines and angles	Maths Progress 2 Calculating with fractions	Maths Progress 2 Straight line graphs	Maths Progress 2 Percentages, decimals and fractions
Cultural Transmission	National Curriculum area – KS4	Number	Geometry and Measures		Statistics	Algebra	Statistics	Number	Geometry and Measures	Number	Statistics	Number
	Substantive Knowledge	The What! Calculations Divisibility and division Calculating with negative integers Powers and roots Powers, roots and brackets Powers, multiples and factors	Area of a triangle Area of a parallelogram and a trapezium Volume of cubes and cuboids 2D representations of 3D solids Surface area of cubes and cuboids Measures		Pie charts Using tables Stem and leaf diagrams Comparing data Scatter graphs Misleading graphs	Algebraic powers Expressions and brackets Factorising expressions One-step equations Two-step equations The balancing method	Conversion graphs Distance-time graphs Line graphs More line graphs Real-life graphs Curved graphs	Ordering decimals and rounding Place value calculations Calculations with decimals Ratio and proportion with decimals	Quadrilaterals Alternate angles and proof Angles in parallel line Exterior and interior angles Solving geometric problems	Ordering fractions Adding and subtracting fractions Multiplying fractions Dividing fractions Calculating with mixed numbers	Direct proportion on graphs Gradients Equations of straight lines	Fractions and decimals Equivalent proportions Writing percentages Percentages of amounts
	Disciplinary Knowledge	The How! consolidate their numerical and mathematical capability from key stage 2 and extend their understanding of the number system and place value to include decimals, fractions, powers and roots	derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cylinders) and other prisms (including cylinders) calculate and solve problems involving: perimeters of 2-D shapes (including circles), areas of circles and composite shapes		construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data	substitute values in expressions, rearrange and simplify expressions, and solve equations	construct and interpret appropriate tables, charts, and diagrams, including frequency tables, bar charts, pie charts, and pictograms for categorical data, and vertical line (or bar) charts for ungrouped and grouped numerical data	round numbers and measures to an appropriate degree of accuracy (for example, to a number of decimal places or significant figures) use approximation through rounding to estimate answers and calculate possible resulting errors expressed using inequality notation $a < x < b$	apply the properties of angles at a point, angles at a point on a straight line, vertically opposite angles understand and use the relationship between parallel lines and alternate and corresponding angles	use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative	reduce a given linear equation in two variables to the standard form $y = mx + c$; calculate and interpret gradients and intercepts of graphs of such linear equations numerically, graphically and algebraically	solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics
	Sequencing (Flow)	Retrieval & Extension Builds upon year 7 when students use the four operations, including formal written methods, applied to integers, decimals, all both positive and negative. Use standard units of time, money. Use the concepts and vocabulary of prime numbers, factors (or divisors), multiples. Use integer powers -square numbers. Further develop in year 9 when students are: 1) Using four Operations Understanding powers Using Multiplication and Division by 10, 100, 1000 2) Using Inverse Operations Expanding Like Terms Expanding brackets	Builds upon year 7: when students derive and use the sum of angles in a triangle. They will also derive and illustrate properties of triangles & quadrilaterals. Further develops in year 9: when students find Circumference of a Circle Area of a Circle Pythagoras' Theorem Volume of Prism Surface Area of Prism Volume of Cylinder Surface Area of Cylinder Upper & Lower Bounds Error intervals		Builds upon year 7: measure line segments and angles in geometric figures. Derive and use the sum of angles in a triangle. Further develops in year 9: when students find Types of Data Planning Research Questionnaire Averages from tables Averages from grouped data Back-to-back stem & leaf diagrams	Builds upon year 7: when students use Measure & Draw angles, Lines, angles and triangles Drawing triangles accurately Calculating angles Angles in a triangle Quadrilaterals Further develops in year 9: when students find Types of Data Planning Research Questionnaire Averages from tables Averages from grouped data Back-to-back stem & leaf diagrams	Builds upon year 7: when students use Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and 7/2 or 0.375 and 3/8) Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100% Further develops in year 9: when students solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics	Builds upon year 7: when students use Measure & Draw angles, Lines, angles and triangles Drawing triangles accurately Angles in a triangle Quadrilaterals Further develops in year 9: when students find Perpendicular Bisector Angle Bisector Bisecting from a Point Constructing triangles using bisectors Constructing polygons	Builds upon year 7: when students use Comparing fractions Simplifying fractions Working with fractions Fractions and decimals Understanding percentages Percentages of amounts Further develops in year 9: when students find Solving equations involving fractions Solving equations with unknowns on both sides Solving equations involving fractions Solving equations with unknowns on both sides Substitution involving roots & indices Using formulae Rearranging formulae Collecting like terms involving indices Factorise linear expressions involving indices	Builds upon year 7: when students use develop fluency by using algebra to generalise the structure of arithmetic, including to formulate mathematical relationships, substitute values in expressions, rearrange and simplify expressions, and solve equations Further develops in year 9: when students find Solving equations involving fractions Solving equations with unknowns on both sides Substitution involving roots & indices Using formulae Rearranging formulae Collecting like terms involving indices Factorise linear expressions involving indices Expanding double brackets	Builds upon year 7: when students use Work interchangeably with terminating decimals and their corresponding fractions (such as 3.5 and 7/2 or 0.375 and 3/8) Define percentage as 'number of parts per hundred', interpret percentages and percentage changes as a fraction or a decimal, interpret these multiplicatively, express one quantity as a percentage of another, compare two quantities using percentages, and work with percentages greater than 100% Further develops in year 9: when students solve problems involving percentage change, including: percentage increase, decrease and original value problems and simple interest in financial mathematics	
	Summative Assessment		Lesson 10: Check Up Test One Deep Mark	Lesson 10: Check Up Test One whole class feedback	AP1 Assessment - Whole School Data Collection	Lesson 10: Check Up Test One Deep Mark	Lesson 10: Check Up Test One Deep Mark	Lesson 10: Check Up Test One whole class feedback	AP 2 Assessment - Whole School Data Collection	Lesson 10: Check Up Test One whole class feedback	Lesson 10: Check Up Test One Deep Mark	Lesson 10: Check Up Test One whole class feedback
Personal Empowerment	Virtue	Friendliness & Civility	Justice & Truthfulness	Courage	Generosity	Gratitude	Good Speech	Good Temper & Humour	Self-Mastery	Compassion	Good Sense	
	Link to Virtue	<i>The opportunity to reflect, think deeply and critically about an issue.</i> Students will need to be friendly and civil as they work out different calculations.	Students will look at the truthfulness of shapes through working out the area of different shapes and understanding the different equations.	Students will need courage to tackle their weaknesses leading up to AP1.	As we tackle mathematical problems we should be generous with our time and encouragement when supporting others	Students will be thankful for the basic algebra skills they learned in Y7 to allow them to develop their knowledge in this topic	Students will have opportunities to discuss the different types of graph and why they make the shapes they make. Students will also need to verbally justify decisions they've made based on the data from the graph.	Students will need to demonstrate good temper & humour as they work on the functional skills tasks using their ratio knowledge	Students will be mastering skills they developed in Y7 and moving them forward to investigate angle rules on parallel lines	Students will be mastering their fractions skills in this topic as they've been developing them throughout KS2 and Y7.	Students will need to develop the compassion to support each other when investigating $yx+mx+c$ as this will take patience from all students	1) Students will need to use good sense to make decisions about when to use calculator and non-calculator methods of percentages and also to check their answers. 2) Students will have a lot of good sense opportunities in both their business project, but also their
Preparation for Work	Skill	Listening	Leadership	Problem-Solving	Creativity	Staying Positive	Speaking	Staying Positive	Aiming High	Speaking	Teamwork	
	Link to Skill	<i>Transferable skills</i> Students will need to listen clearly when learning to use different calculations.	Students will lead their learning in the multi-link lesson. Students will also lead each other to make progress in area to ensure smooth transition to surface area. This unit links to careers in architecture and design.	Students will apply their new skills to solve problems in the AP1 assessment.	Creativity Level 2: Students can share what they imagine a function machine to do by drawing it out. Creativity Level 3: Students can use their imagination to use letters to represent unknowns	Students will need to stay positive as they tackle solving equations for the first time. This unit links to careers in science and cryptography.	Students will have opportunities to discuss the different types of graph and why they make the shapes they make. Students will also need to verbally justify decisions they've made based on the data from the graph. This lesson links to careers in data	Students will need to stay positive as they look at ratio and real-life applications of ratio. This unit links to careers in banking and finance.	Students will need to aim high as they work on questions involving use of multiple angle rules to get to the final answer. This unit links to careers in interior design, architecture and design technology.	Students will need to aim high as they work on questions on fractions, decimals and percentages	Students will discuss their findings in the $yx+mx+c$ investigation and make conclusions based on these discussions. This unit links to careers in computing and engineering.	1) Students will need to work together on percentage questions to solve various problems involving multipliers. This unit links to careers in sales. 2) All projects at group-based so students will need to work as
Preparation for Citizenship	SMSC & British Values	Social Mutual Respect	Social Moral Cultural	Social Individual Liberty	Social Cultural Rule of Law	Social Moral Democracy	Social Tolerance	Social Rule of Law	Social Individual Liberty	Social Mutual Respect	Social Moral Individual Liberty	
	Link to SMSC & British Values	<i>Developing opinions on current issues</i> Students will need to use their social skills for paired and group work. Students will show each other mutual respect as they learn to work together and be friendly and civil.	Students will use their social skills when working in pairs and groups. Students will look at the moral repercussions of misrepresenting shapes. Students will look at how different cultures build and create shapes. Students will learn to be tolerant of other cultures' choices when it comes to building design and architecture.	Students will need to use their social skills to work together on paired and group activities. Students will demonstrate individual liberty as they learn they have the freedom to revise topics relevant to their own personal learning gaps.	Students will need to use their social skills to work together in group activities. Students will discuss other countries / cultures and who uses what type of measurements, including why we use metric and imperial in the UK. Students will need to understand the rules and processes for solving equations, in particular focusing on inverse operations and balancing equations.	Students will use their social skills as they work together in pairs and groups. Students will look at the moral reasoning behind use of certain graphs and misleading graphs, building from the previous data topic. Students will look at how democracy can be effected by data. Students will also learn how to justify their opinion and get other people's opinions to agree with their own.	Students will use their social skills as they complete paired and group work. Students will demonstrate tolerance of each other as they progress at different paces and will learn to help each other rather than get frustrated.	Students will use their social skills during paired and grouped activities. Students will use the 'laws' they already have for angles and will develop this further to understand the 'rule of law' for angles in polygons.	Students will use their social skills as they work in pairs and groups to progress in this topic. Students will demonstrate individual liberty as they use their own free choices to make progress as well as help each other.	Students will use their social skills to support each other in paired and grouped activities. Students will demonstrate mutual respect as they discuss $yx+mx+c$ investigation and the outcomes of this.	Students will utilise their social skills for their group work in the end of year project. Students will need to think about the morals of running a business, but also making a profit. Students will demonstrate how we have the individual liberty to make decisions when running a business.	