

| Curriculum Content Map | | | | | | | | | | | | | |
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| Subject: Year 8 Maths | | | | | | | | | | | | | |
| Month | | September | Term 1 October | November | December | Term 2 January | February | March | April | May | Term 3 June | July | |
| | Units of Work | Number | Area & Volume | Statistics, Graphs and Charts | | Expressions & Equations | Real-Life Graphs | Decimals & Ratio | Lines & Angles | Calculating with Fractions | Straight Line Graphs | 1) Percentages, Decimals & Fractions NUMBER 2) Project-Based Work NUMBER RATIO | |
| | | NUMBER | SHAPE | DATA | During December students were re-taught content that was identified as not being secure, on Q by Q analysis documents, following AP1 assessments. Year group gaps were identified and re-visited. | ALGEBRA | DATA ALGEBRA | RATIO | SHAPE | NUMBER | ALGEBRA | | |
| Cultural Transmission | National Curriculum area – KS3 | "use the concepts and vocabulary of prime numbers, factors (or divisors), multiples, common factors, common multiples, highest common factor, lowest common multiple, prime factorisation, including using product notation and the unique factorisation property" | "derive and apply formulae to calculate and solve problems involving: perimeter and area of triangles, parallelograms, trapezia, volume of cuboids (including cubes) and other prisms (including cylinders)" "use the properties of faces, surfaces, edges and vertices of cubes, cuboids, prisms, cylinders, pyramids, cones and spheres to solve problems in 3-D" | "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" "describe simple mathematical relationships between two variables (bivariate data) in observational and experimental contexts and illustrate using scatter graphs." | | "use and interpret algebraic notation, including: ab in place of $a \times b$, $3y$ in place of $3 \times y$, a^2 in place of $a \times a$, b/a in place of $a \div b$, coefficients written as fractions rather than as decimals, brackets" "simplify and manipulate algebraic expressions to maintain equivalence by: collecting like terms, multiplying a single term over a bracket, taking out common factors, expanding products of two or more binomials" "use algebraic methods to solve linear equations in one variable (including all forms that require rearrangement)" | "model situations or procedures by translating them into algebraic expressions or formulae and by using graphs" "interpret mathematical relationships both algebraically and graphically" | "understand and use place value for decimals, measures and integers of any size" "order positive and negative integers, decimals and fractions; use the number line as a model for ordering of the real numbers; use the symbols $=$, $>$, $<$, \geq " | "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" "derive and use the sum of angles in a triangle and use it to deduce the angle sum in any polygon, and to derive properties of regular polygons" | "use the four operations, including formal written methods, applied to integers, decimals, proper and improper fractions, and mixed numbers, all both positive and negative" | "recognise, sketch and produce graphs of linear and quadratic functions of one variable with appropriate scaling, using equations in x and y and the Cartesian plane" "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 direct and inverse proportion, including graphical and algebraic representations" | 1) "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%" 2) Various skills across the key stage | |
| | Substantive Knowledge | The What! | Divisibility Estimation Prime Factors HCF & LCM using venn | Area of Triangle Area of Parallelogram Area of Trapezium Volume of Compound Shapes Plans & Elevations Surface Area Metric Conversions involving volume and capacity | Two-Way Tables Stem & Leaf Diagrams Scatter Graphs Misleading Data | | Algebraic Powers Factorise linear expressions Solving equations | Conversion Graphs Distance-Time Graphs Comparing Line Graphs Real-life Graphs Curved Graphs | Ordering Decimals Using Place Value Ratio & Decimals | Properties of 2D shapes Parallel Line Angle Rules Angles in Polygons Exterior & Interior Angles | Adding & Subtracting Mixed Numbers & Improper Fractions Multiplying Fractions Dividing Fractions | Direct Proportion Graphs Gradient $y=mx+c$ Equations of lines (from words) | 1) Recurring Decimals Fractions & Decimals (Time) Percentage Increase & Decrease – calculator and non-calculator methods 2) Running a business Profit / Loss Budgeting |
| | Disciplinary Knowledge | The How! | Using Division Using Rounding Using Factors & Multiples | Using formulae Drawing 2D and 3D Shapes Understanding metric measurements | Using Addition & Subtraction Using Place Value Partitioning numbers Drawing & Plotting Graphs | | Using the Four Functions Using Common Factors Using Inverse Operations Balancing | Drawing & Plotting Graphs Interpreting Data | Ordering Numbers Understanding place value | Knowing the names of 2D shapes Using angles rules | Using Factors and Multiples | Drawing & Plotting Graphs Understanding x and y values | 1) Using Multiplication Using Place Value Understanding Percentage of Amounts 2) Following instructions Discussing options |
| | Sequencing (Flow) | Retrieval & Extension | Builds from Y7: Rounding to 1 significant figure Negative Numbers Prime Numbers Further develops in Y9: Indices Standard Form | Builds from KS2: Volume of Cuboids Nets Builds from Y7: Area of Compound Shapes Metric Measurement Further develops in Y9: Area & Circumference of a Circle Volume of Prisms Surface Area of Prisms | Builds from Y7: Frequency Tables Bar Charts Line Graphs Further develops in Y9: Planning Research Averages from Grouped Data Writing a Report on Data | | Builds from Y7: Expanding single brackets Function Machines Writing expressions Further develops in Y9: Solving equations (unknown on both sides) Rearranging formulae Expanding double brackets | Builds from Y7: Linear Graphs Line Graphs Further develops in Y9: Direct & Inverse Proportion Graphs Quadratic Graphs Other non-linear graphs | Builds from Y7: Decimals – Four Operations Sharing in a Ratio Further develops in Y9: Compound Measures Direct & Inverse Proportion | Builds from Y7: Angles on a line Angles around a point Angles in triangles Further develops in Y9: Constructions Perpendicular and Angle Bisectors Trigonometry | Builds from KS2: Ordering Fractions Builds from Y7: Adding & Subtracting Fractions Converting mixed numbers and improper fractions Further develops in Y9: Multiplicative Reasoning | Builds from Y7: Linear Graphs Direct Proportion Further develops in Y9: Simultaneous Equation Graphs Cover Up Method Quadratic Graphs | 1) Builds from KS2: Converting Fractions, Decimals & Percentages Builds from Y7: Percentages of Amounts Further develops in Y9: Percentage Change Reverse Percentages Simple and Compound Interest 2) Both projects require various number skills from Y7 and Y8 as well as scale drawing skills from Y7 and Y8 |
| | Summative Assessment | | Deep Mark 1: Homework End of Topic Test - Number | Deep Mark 2: Homework End of Topic Test - Area & Volume | Deep Mark 1: AP1 Assessment - Whole School Data Collection Homework | Deep Mark 2: Homework End of Topic Test - Statistics, Graphs and Charts | Deep Mark 1: Homework End of Topic Test - Expressions & Equations | Deep Mark 2: Homework End of Topic Test - Real-Life Graphs | Deep Mark 1: AP2 Assessment - Whole School Data Collection End of Topic Test - Decimals & Ratio Homework | Deep Mark 2: Homework End of Topic Test - Lines & Angles | Deep Mark 1: Homework End of Topic Test - Calculating with Fractions | Deep Mark 2: AP3 Assessment - Whole School Data Collection End of Topic Test - Straight Line Graphs Homework | 1) Deep Mark 1: End of Topic Test - Percentages, Decimals & Fractions 2) Results of business plan |
| Personal Empowerment | Virtue | | Friendliness & Civility | Justice & Truthfulness | Courage | Generosity | Gratitude | Good Speech | Good Temper & Humour | Self-Mastery | | Compassion | Good Sense |
| | Link to Virtue | The opportunity to reflect, think deeply and critically about an issue. | Students will need to be friendly and civil as they work through prime factors and using venn diagrams for HCF & LCM | Students will look at the truthfulness of shapes through plans and elevations and how they can mislead what a shape looks like | Students will need to have courage to apply their previous learning to new charts they have not encountered before. Students will also look at data about courage and courageous people. | Students will look at the generosity of scales and the impact this can have on misleading data. | 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 $y=mx+c$ 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 money-based project as well |
| Preparation for Work | Skill | | Listening | Leadership | Problem-Solving | Creativity | Staying Positive | Speaking | Staying Positive | Aiming High | | Speaking | Teamwork |
| | Link to Skill | Transferable skills | Students will need to listen clearly when learning to use venn diagrams with HCF & LCM. This unit links to careers in management and finding common threads using venn diagrams. | 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 use problem solving to analyse and present data and particularly to compare data using graphs and averages. Students will also use this skill to look into misleading data. This unit links to careers in data analysis and intelligence. | Students will need to be creative when presenting data in graphs and charts. This unit continues to focus on careers in data analysis and intelligence. | Students will need to stay positive as they tackle solving equations for the first time. This unit links to careers in science and cryptology. | 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 analysis and intelligence, specifically focussing on drawing conclusions from 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 fractions questions involving mixed numbers and improper fractions. This unit links to careers in culinary areas. | Students will discuss their findings in the $y=mx+c$ 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 team, even a team that didn't choose their own members. This unit links to careers in running their own business. |
| Preparation for Citizenship | SMSC & British Values | Developing opinions on current issues | Social Mutual Respect | Social Moral Cultural Tolerance | Social Moral Democracy | | 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 | | 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 use their social skills for paired and group activities. Students will look at the moral repercussions of misleading data, particularly in the media. Students will discuss data linked to voting and how this can influence voter outcomes, therefore also democracy. | | Students will need to use their social skills 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 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. | |