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| Subject: Mathematics Year 9 Curriculum Map 2024-2025 | | | |
| Terms | **Topics covered** and **core knowledge and skills** | Links to careers | Links to the Knowledge organiser and other additional resources |
| Half term 1 | Fractions, Decimals, Percentages Review:  Understand the connections between methods of calculation for fractions, decimals and percentage  Be able to apply the four operations to fractions, decimals and percentage  Probability:  Understand probability is a numerical measure of chance from 0 to 1 inclusive  Be able to calculate the probability of single independent events  Compare probabilities using a variety of representations  Sets, Venns and Sample Space:  Understand set notation for intersections, unions, complements and the universal set  Be able to identify and interpret sets described by notation and within Venn diagrams  Understand probability from set notation and Venn diagrams  Be able to form and interpret Venn diagrams in the context of probability | Fractions, Decimals, Percentages Review:  Fractions - <https://www.youtube.com/watch?v=3pccvFEWO0k>  Decimals - <https://www.youtube.com/watch?v=X0Gl72XKiyI>  Percentages - <https://www.youtube.com/watch?v=7EB0H1bhGTo>  Probability:  <https://www.youtube.com/watch?v=cJ1QPiGnGEM>  Sets, Venns and Sample Space:  <https://www.youtube.com/watch?v=cJ1QPiGnGEM> | <https://classroom.thenational.academy/subjects-by-key-stage/key-stage-3/subjects/maths>  <https://www.bbc.co.uk/bitesize/subjects/zqhs34j>  <https://vle.mathswatch.co.uk/vle/>  <https://family.eedi.com/login>  <https://maritime.rivoagency.com/admin/wp-content/uploads/sites/20/2022/10/Unit-1-FDP-Review-KO.pdf>  <https://maritime.rivoagency.com/admin/wp-content/uploads/sites/20/2022/10/Unit-2-Probability-KO.pdf>  <https://maritime.rivoagency.com/admin/wp-content/uploads/sites/20/2022/10/UNit-3-Sets-and-Venn-KO.pdf> |
| Half term 2 | Solving Simultaneous Equations Algebraically:  Be able to solve and manipulate linear equations with one or more variables  Understand how equivalence can be maintained while scaling and rearranging equations  Understand how variables and unknowns interact within a system of equations  Understand that addition and subtraction of simultaneous equations can result in the elimination of a variable  Be able to use equivalent equations – through scaling and rearranging – to solve simultaneous equations  Understand how substitution can be used to manipulate algebra  Be able to reduce the number of variables in an equation through substitution  Solving Simultaneous Equations Graphically:  Understand coordinates as solutions to linear equations, including intersections as simultaneous solutions  Be able to solve simultaneous linear equations graphically  Understand parallel lines have no solution as they do not intersect  Be able to identify whether a pair of simultaneous equations have a solution algebraically and graphically  Connect graphical and algebraic representations of linear relationships | Solving Simultaneous Equations:  <https://www.youtube.com/watch?v=z5p8MQSGh0w> | <https://maritime.rivoagency.com/admin/wp-content/uploads/sites/20/2022/10/Unit-4-and-5-Simultaneous-Equations-KO.pdf> |
| Half term 3 | Angle Review  Understand angle theorems are used to calculate angles without the need to measure  Be able to calculate angles using multiple angle theorems  Experience justifying deductions using a chain of reasoning  Constructions, Congruence and Loci  Understand that circles can be used to draw the locus of points that are a given distance from a point  Be able construct perpendicular and angle bisectors  Experience constructing perpendicular and angle bisectors within a geometric problem  Understand congruency conditions for triangles  Be able to identify when two triangles are congruent  Experience using congruent triangles to prove other geometric results  Pythagoras’ Theorem  Understand that radical notation can be used to describe slanted non-integer lengths and how this relates to squares and right-angled triangles  Be able to find any missing length of a right-angled triangle using by knowing that the square of the hypotenuse is equal to the sum of the squares of the other two sides  Ratio Review  Understand ratios describe proportional relationships  Be able to describe proportional relationships using ratios and fractions  Experience using scale factors, constants of proportionality and unit ratios to solve problems | Angle Review:  <https://www.youtube.com/watch?v=S-Xx22DaOvE>  Constructions, Congruence and Loci:  <https://www.youtube.com/watch?v=w9K7P383cXs>  Pythagoras’ Theorem:  <https://www.youtube.com/watch?v=KY8rRWvmt5c>  Ratio Review:  <https://www.youtube.com/watch?v=BU9mKIvfxYU> |  |
| Half term 4 | Similarity and Enlargement  Understand angles do not change and proportions remain constant in similar shapes  Be able to find scale factors and constants of proportionality and use them to find missing side lengths  Experience recognising and visualising congruent and similar shapes  Understand the constant of proportionality is a relationship within a shape and the scale factor is a relationship between shapes  Understand the centre of enlargement (CoE) determines the position of an enlarged shape  Be able to enlarge a shape from a given CoE and on a coordinate grid and find the CoE  Understand the relationship between the area of an enlarged shape and the scale factor  Trigonometry  Understand that every right-angled triangle is similar to a right-angled triangle drawn within a unit circle.  Be able to find the length of side in right-angled triangle given an angle and the length of the hypotenuse using the sine and cosine functions  Understand that the relationship between the opposite and adjacent is held constant by a set angle  Be able to directly find the length of the opposite from the adjacent and given angle (and vice versa)  Be able to find any angle in a right-angled triangle from two known side lengths. | Similarity and Enlargement:  <https://www.youtube.com/watch?v=Mz4nMRtTDCw>  <https://www.youtube.com/watch?v=ejuJ20JroTo>  Trigonometry:  <https://www.youtube.com/watch?v=v62GGaDpk9Q> |  |