The Year 9 Curriculum: Mathematics

UP HOLLAND HIGH SCHOOL
Dedicated to Excellence

Quadratic Graphs

- Finding points of Intersection
- Symmetry and Turning Points
- Plotting Quadratic Graphs
- Recognising the shape of Quadratic Graphs
- Translations of Quadratic Curves
- Plotting Complex Quadratic Graphs
- Pre-Assessment Test MRI

Half Term

Similarity and Trigonometry

- Trigonometry – find missing length
- Trigonometry – identify required ratio for a given angle
- Trigonometry – investigating the ratios
- Proof of Similarity
- Testing similar triangles using Parallel Lines
- Using Algebraic Expressions for length
- Identify missing sides and angles
- Define Similarity properties
- Identify Similar shapes using integers, ratio and fractions
- Identify Centre of Enlargement
- Enlarge a shape given Centre of Enlargement and SF
- Enlarge a shape given Scale Factor
- Recognise and understand Enlargements (Positive)

Half Term

Geometry

- Calculating with Density and Problem Solving
- Converting Units of Volume
- Understanding Density
- Volume of Prisms
- Area of 2D shapes
- Surface Area of Prisms
- Nets of Prisms
- Finding missing lengths, given Volume
- Volume of Cubes / Cuboids
- Revision Pre-Assessment Test MRI

Half Term

Statistics

- Scatter Graphs and Correlation
- Finding Averages from Tables: - Frequency - Grouped
- Finding Averages from Charts
- Bar Charts (comparative)
- Drawing and Interpreting Line Graphs
- Stratified Sampling
- Drawing and Interpreting Pie Charts

Probability

- Peterson's Capture / Re-capture
- Finding the Probability of more than 1 Event
- Mutually Exclusive Events
- Problem Solving involving Angles in Polygons
- Tree Diagrams (Representing and Calculating Probability)
- Venn Diagrams
- Calculating Expectation
- Sample Space Diagrams
- Assigning Values to Probabilities
- Understanding Chance

Half Term

Geometry

- Angles in Polygons (Sum of Exterior Angles)
- Angles in Polygons (Sum of Interior Angles)
- Points of Intersection

Linear Functions

- Finding missing lengths of a Right Angle Triangle
- Problem Solving Finding the length between two Coordinates
- Constructing Linear Graphs Identifying Intercepts
- Finding x and y Intercepts
- Representing Simple Inequalities Using Graphs
- Links Real-Life/STEM Graphs
- Equation of a Line from: - Diagram - Two Coordinates - Position on Axes
- Identifying Gradient
- Identifying Parallel Lines
- Constructing / Identifying Equations of Horizontal and Vertical Lines

Coordinates and Pythagoras

- Finding the Hypotenuse
- Working with Coordinates and Problem Solving in all 4 Quadrants
- Investigating Pythagoras Theorem
- Working with Coordinates and Problem Solving in the first Quadrant

Half Term

Triangles

- Testing for Congruence
- Properties of Congruency
- Angle Fact Combinations
- Properties of and Angles in Isosceles Triangles
- Triangles Recap Types of Triangles
- Proving Similarity in Triangles with Parallel Lines
- Revision Pre-Assessment Test MRI
- Constructing Triangles with SSS, ASA, SAS
- Exterior Angles of Triangles
- Equilateral Triangles
- Interior Angles of Triangles (including proof)

Angles in Parallel Lines

- Problem Solving with Parallel Lines
- Using Properties of Parallel Lines
- Recognising Angles in Parallel Lines

Half Term

Transformations

- Factorising by Grouping
- Dividing a Polynomial by a Monomial
- Understand and Perform Translations
- Identify the Centre of Rotation
- Mixed Transformations
- Finding Lines of Reflections
- Reflectional Symmetry and Drawing Reflections
- Rotational Symmetry
- Describe Translations
- Index Laws for Division
- Factorising Quadratics
- Factorising Expressions

Polynomial Expressions

- The Perfect Square
- Difference of 2 Squares
- Multiplying Single Brackets
- Addition and Subtraction of Polynomials
- Substitution (into complex formula)
- Multiplying Brackets (up to three)
- Multiplying Polynomials (double)
- Index Laws for multiplication and standard form
- Collecting Like Terms
- Writing Expressions (with fractions and powers)

Year 9