

Curriculum Overview

Subject: Maths

Year Group: 8



Year 8 students will follow the scheme of work according to their sets and ability. Platinum and gold pathway are following the Higher scheme of work. Silver and Bronze pathways follow the Foundation scheme of work. They will undertake assessments every half term to see how they progress. They may move up or down depending on test results.

TERM 1	TERM 2	TERM 3
KNOWLEDGE/SKILLS Higher: <ul style="list-style-type: none"> • Factors and powers • Working with powers • 2D shapes and 3D solids Foundation: <ul style="list-style-type: none"> • Number properties and calculations • Shapes and measures in 3D • Statistics • Expressions and equations • 	KNOWLEDGE/SKILLS Higher: <ul style="list-style-type: none"> • Real life graphs • Transformations • Fractions, decimals and percentages Foundation: <ul style="list-style-type: none"> • Decimal calculations • Angles • Number properties 	KNOWLEDGE/SKILLS Higher: <ul style="list-style-type: none"> • Constructions and loci • Probability • Scale drawings and measures • Graphs Foundation: <ul style="list-style-type: none"> • Sequences • Fractions and percentages • Probability
KEY ASSESSMENTS <u>Half term 1:</u> Autumn Term 1 Assessment <u>Half term 2:</u> End of Term 1 Assessment	KEY ASSESSMENTS <u>Half term 1:</u> Spring Term 1 Assessment <u>Half term 2:</u> End of Term 2 Assessment	KEY ASSESSMENTS <u>Half term 1:</u> Summer Term 1 Assessment <u>Half term 2:</u> End of Term 3 Assessment

Extended reading suggestions and external resources:

Mathswatch - <https://vle.mathswatch.co.uk/vle/>; Mainly used for exam questions based on specific topics

Mathsbot - <https://mathsbot.com/>; differentiated activities to help build key skills as well as worksheets for consolidation of work.

MyMaths - <https://login.mymaths.co.uk/login>

Corbett Maths – <https://corbettmaths.com/>; 5-a-day questions which are good problem solving starter questions for all abilities.

Maths Year 8 Assessment Criteria

	Bronze 	Silver 	Gold 	Platinum 
Number	<p>Round decimals. Multiply & divide decimals by single-digit whole numbers. Convert between ordinary numbers and numbers in standard form. Use square roots, cube and cube roots. Understand and apply BIDMAS. Write an integer as a product of its prime factors. Calculate the LCM & HCF using Venn diagrams. Add and subtract fractions. Calculate simple percentages of amounts.</p>	<p>Calculate the LCM and HCF. Estimate answers to calculations with the use of rounding numbers. Round to significant figures. Multiply and divide numbers that are written in standard form. Convert between improper and mixed fractions. Convert between fractions, decimals and percentages. Compare and order fractions and/or decimals. Calculate percentage increase and decrease. Calculate percentage of amounts with and without a calculator.</p>	<p>Solve word problems involving HCF and LCM. Multiply & divide integers and decimals by a number between 0-1. Add & subtract numbers that are in standard form. Laws of indices. Solve problems involving standard form. Solve word problems with percentage increase and decrease. Calculate simple interest. Calculate compound interest. Add, subtract, multiply and divide fractions.</p>	<p>Upper and lower bounds. Rounding error in calculations. Negative indices. Fractional Indices. Convert a recurring decimal to a fraction and vice versa. Find a reciprocal of any fraction or a decimal. Solve reverse and compound percentage problems. Add, subtract, multiply and divide mixed numbers. Word problems involving standard form.</p>
Algebra	<p>Expand and simplify brackets. Factorise linear expressions. Substitute positive and negative integers into expressions and formulae. Plot straight line graphs. Calculate the midpoint of a line. Generate a sequence from and calculate the nth term.</p>	<p>Expand double brackets with positives. Solve linear equations, with negatives and brackets. Substitute fractional and negative values into expressions. Plot straight line graphs without a table of values. Calculate the gradient from a straight line. Problems involving the nth term.</p>	<p>Expand double brackets with negatives. Factorise quadratic expressions. Solve linear equations with unknowns on both sides. Rearrange formulae and use to solve problems. Plot quadratic graphs. Calculate the gradient from two points.</p>	<p>Expanding triple brackets. Factorise quadratics including the difference of two squares. Setting up own formula to solve a problem. Rearranging complex formulas. Quadratic and other nonlinear sequences. Quadratic graphs and finding roots.</p>
Ratio and proportion	<p>Convert fractions to a ratio, Share an amount in a given ratio. Use ratio to compare scale drawings to real life. Convert between metric units.</p>	<p>Write, simplify and divide a ratio given situations. Compare products to work out best buy. Solve simple problems involving direct proportion. Convert between metric units involving area.</p>	<p>Interpret and solve best buy deals. Calculate missing dimensions in similar shapes. Convert between currencies. Convert between metric units involving volume.</p>	<p>Solve problems using fractions, percentages and ratio. Solve problems involving direct and indirect proportion. Calculate the linear scale factor of similar shapes. Converting between metric areas involving ratio.</p>

<p style="text-align: center;">Geometry</p>	<p>Classify quadrilaterals and triangles given their properties. Know the names of regular polygons up to decagon. Calculate the area and perimeter of rectangles/squares/triangles and compound shapes. Calculate the circumference and area of a circle. Find missing angles in triangles and quadrilaterals. Reflect, translate and rotate a shape. Identify properties of 3D shapes.</p>	<p>Calculate the volume of a cuboid. Construct bisectors accurately. Construct a triangle given sides and angles. Calculate the area of a trapezium. Identify congruent shapes. Identify and calculate angles in parallel lines e.g.: alternate, corresponding & Co-interior. Enlarge any shape given a positive scale factor.</p>	<p>Identify and use the formula for the size of an interior angle in a regular polygon. Calculate the volume of a prisms including cylinders. Calculate the surface area of prisms. Calculate the dimensions given the volume or surface area. Describe fully a single transformation. Answer problems involving angles in parallel lines. Enlarge a shape from a given centre of enlargement.</p>	<p>Calculate interior, exterior and the sum of angles in polygons. Construct loci accurately. Enlarge a shape with a negative scale factor. Draw plan, front and side elevations of 3D objects. Solve problems using area and volume. Answer complex problems involving angles in parallel lines using algebra. Pythagoras' Theorem.</p>
<p style="text-align: center;">Probability and data</p>	<p>Calculate the mode, mean and range from sets of data. Construct a pie chart. Plan and construct two-way tables. Use a scale from 0-1 to express and compare experimental and theoretical probabilities in a range of contexts. Calculate the probability of an event happening using theoretical probability. Plot a scatter graph from data.</p>	<p>Construct and interpret pie charts. Calculate averages from frequency tables. Understand that the sum of probabilities of all mutually exclusive outcomes is 1. Use $1 - p$ to calculate the probability of an event not occurring. Calculate a missing probability from a list or two-way table. Calculate the mode, median, mean and range from sets of data.</p>	<p>Estimate the mean and median from grouped frequency tables. Display data with an appropriate graph. Complete Venn diagrams and use union and intersection notation. Calculate the probability of an event happening using relative frequency. Use a two-way table to calculate conditional probability. Draw and interpret scatter graphs including line of best fit.</p>	<p>Compare two or more pie charts. Work out probabilities from Venn diagrams. Understand and use experimental and theoretical probability to calculate estimated outcomes. Construct and interpret real-life graphs. Probability trees. Conditional probability.</p>