Cedar Mount Academy
BRIGHT FUTURES EDUCATIONAL TRUST

# Maths

**Subject leader:** Mr E Smith

**Curriculum Intent:**

**“Mathematics is the music of reason." - James Joseph Sylvester**

*Our curriculum will allow pupils to not only develop their mathematical knowledge, but also their reasoning and problem-solving skills. Every child will have exposure to problems and develop techniques in solving these, they will develop attributes that they can take and be successful with in the wider world.*

**What resources can my child access for additional support?**

**Sparx Maths** (www.sparxmaths.uk) is an online learning platform that provides personalised maths homework for each student, tailored to their own level and progress. Every week, students receive tasks that match what they are learning in class, helping them practise and improve at their own pace. If they get stuck, short video tutorials are available for each question, giving extra support to help them understand and succeed. Teachers can track progress, and parents can see how their child is doing through regular parent update emails. Sparx Maths makes learning maths engaging, supportive, and tailored to every student’s needs.

**What enrichment opportunities are there and how do they support learning?**

- Sparx Maths club – access to laptops and teacher support to help students complete weekly homework
- Chess club – Learn to play and compete with your friends.
- UMKT Maths challenge – Yearly national competition for students to show off their love of problem solving

**What career can studying Maths lead to?**

GCSE Maths opens a wide range of career opportunities because it develops problem-solving, analytical, and numeracy skills that are useful in almost every sector. It can lead to careers in science, technology, engineering, and maths (STEM), finance and business, healthcare, education, skilled trades, public services, and even creative and digital industries. Strong maths skills also support further study, apprenticeships, and many professional pathways, making it a valuable foundation for any future career.

Cedar Mount Academy
BRIGHT FUTURES EDUCATIONAL TRUST

## Year 7 Curriculum Plan

| Year 7 Maths Curriculum | Topics | Key Knowledge |
|---|---|---|
| Term 1 | Angles<br>2D Shapes<br>Number Structures | **Angle properties and notation**<br>**Angle facts**<br>**Measuring, drawing and calculation angles in a range of polygons**<br>**Properties of 2D shapes**<br>**Place value**<br>**Rounding**<br>**Working with decimals**<br>**Factors, multiples and primes**<br>**Four operations**<br>**Working with negative numbers** |
| Term 2 | Algebra<br>Numerical Representations | **Algebraic notation**<br>**Manipulating algebraic expressions**<br>**Solving algebraic equations**<br>**Working with fractions**<br>**Percentages**<br>**Prime factors**<br>**LCM and HCF** |
| Term 3 | Ratio<br>Formulae<br>Sequences<br>Perimeter<br>Area<br>Transformations | Ratio notation<br>Simplifying ratio<br>Sharing in a ratio<br>Linear sequences<br>Special sequences<br>Pattern sequences<br>Nth term<br>Area and perimeter of polygons including compound shapes<br>Area and circumference of circles. |

Cedar Mount Academy
BRIGHT FUTURES EDUCATIONAL TRUST

## Year 8 Curriculum Plan

| Year 8 Maths Curriculum | **Topics** | **Key Knowledge** |
|---|---|---|
| Term 1 | **Angles**<br>**Forming and solving equations**<br>**Rounding and Estimation**<br>**Ratio** | Angles in parallel lines<br>Angles in polygons<br>Forming equations<br>Solving equations<br>Rounding to a given degree of accuracy<br>Estimating calculations<br>Ratio manipulation |
| Term 2 | Linear Graphs<br>Direct and Inverse proportion<br>Averages<br>Representing data | Plotting coordinates<br>Plotting straight line graphs<br>Expressing equations of a straight line in the form y=mx+c<br>Proportional thinking including best buys, recipes and compound measures<br>Calculation averages from lists and tables<br>Comparing averages to make conclusions about data<br>Representing data in graphs and charts |
| Term 3 | Inequalities<br>Area<br>Volume<br>Nets & Surface area | Inequality notation<br>Expressing inequalities on a number line<br>Solving inequalities<br>Finding the volume of 3D shapes<br>Finding the surface area of 3D shapes |

Cedar Mount Academy
BRIGHT FUTURES EDUCATIONAL TRUST

**Year 9 Curriculum Plan**

| Year 9 Maths Curriculum | Topics | Key Knowledge |
|---|---|---|
| Term 1 | Quadratics<br>Probability of events<br>Probability diagrams<br>Pythagoras<br>Simultaneous equations | Expanding and factorising quadratics<br>Solving quadratics by factorising<br>Calculating the probability of single and multiple events<br>Presenting probability in diagrams<br>Using Pythagoras to find missing lengths of right-angled triangles.<br>Solving simultaneous equations using substitution or elimination |
| Term 2 | Construction and Loci<br>Percentages<br>Ratio & Proportion<br>Laws of indices | Constructing 2D shapes accurately<br>Constructing bisectors of lines and angles<br>Calculating percentages<br>Calculating percentage change<br>Using laws of indices with both integers and algebraic terms |
| Term 3 | Trigonometry<br>Numbers in context<br>Similarity | Finding missing sides and angles in right angled triangles using the 3 trigonometric ratios.<br>Working with standard form<br>Doing calculations in standard form<br>Comparing similar shapes<br>Using similarity to find missing sides and angles of shapes |

Cedar Mount Academy
BRIGHT FUTURES EDUCATIONAL TRUST

**Year 10 Curriculum Plan**

**Year 10 Foundation**

| Term | Topics | Content |
|---|---|---|
| Term 1 | Securing Number<br>Negative numbers and Factors<br>Powers and Estimations<br>Indices<br>Fractions<br>Percentages<br>Probability<br>Ratios | Ordering and place value<br>Four Operations<br>Financial Skills Ordering and place value<br>BIDMAS<br>Systematic Listing<br>Product Rule for Counting<br>Working with negative numbers<br>Multiples, Factors & Primes<br>Prime Factorisation<br>HCF and LCM from Venn Diagrams<br>HCF and LCM through listing<br>Powers & Roots<br>Rounding<br>Estimation<br>Error intervals<br>Working with fractions and percentages<br>Unitary ratio (n :1 and 1: n)<br>Sharing in a ratio (inc. 3 parts)<br>Sharing in a ratio when one part is known<br>Multiplicative relationships / express as a linear function |
| Term 2 | Algebraic Expressions<br>Linear Equations<br>Sequences<br>Linear Inequalities<br>Linear graphs<br>Real life graphs<br>Area and Perimeter | Algebraic notation and manipulations<br>Forming and solving linear equations<br>Forming and manipulating linear sequences<br>Forming and solving linear inequalities<br>Plotting and interpreting linear graphs<br>Plotting and interpreting real life graphs<br>Finding the area of polygons including compound shapes and circles |

| | | |
|---|---|---|
| | Scales & Bearings | Drawing scale drawings<br>Using map scales<br>Measuring and calculating bearings |
| Term 3 | Direct and inverse proportion<br>Volume and surface area<br>Angles<br>Growth and decay<br>Compound measures<br>Congruency and similarity<br>Transformations | Proportional thinking<br>Finding the volume and surface area of 3D shapes<br>Angles facts including parallel lines and polygons<br>Repeated percentage change<br>Interest<br>Depreciation<br>Speed, distance, time<br>Density, mass, volume<br>Pressure, force, area<br>Congruency in triangles<br>Transformations of shapes including rotation, reflection, translation and enlargement |

Cedar Mount Academy
BRIGHT FUTURES EDUCATIONAL TRUST

**Year 10 Higher Tier**

| Term | Topic | Content |
|---|---|---|
| Term 1 | Numerical representations<br>Ratio and proportion<br>Surds<br>Probability<br>Algebraic expressions | Working with fractions, decimals and percentages<br>Recurring decimals to fractions<br>Error intervals<br>Percentage change<br>Ratio and proportional thinking<br>Working with surds<br>Calculating dependant and independent events<br>Manipulating algebraic expressions |
| Term 2 | Linear equations and inequalities<br>Quadratics<br>Indices<br>Standard form<br>Graphs<br>Proof<br>Simultaneous equations | Forming and solving linear equations<br>Forming and solving linear inequalities<br>Solving quadratics including factorising, quadratic formula, completing the square and using a graph.<br>Working with indices and standard form.<br>Plotting and interpreting graphs<br>Algebraic proof<br>Forming and solving simultaneous equations using a range of methods including substitution, elimination and using a graph. |
| Term 3 | Functions<br>Area and Volume<br>Pythagoras<br>Trigonometry<br>Transformation | Function notation<br>Using functions to generate inputs and outputs<br>Inverse functions<br>Composite functions<br>Finding the area of 2D shapes including compound and circles<br>Finding the volume of 3D shapes including compound and frustums<br>Using Pythagoras and trigonometry to find missing sides and angles in right-angled triangles.<br>Using trigonometry in non-right angles triangles. |

Cedar Mount Academy
BRIGHT FUTURES EDUCATIONAL TRUST

**Year 11 Curriculum Plan**

**Year 11 Foundation:**

| **Term** | **Topics** | Content |
|---|---|---|
| Term 1 | Averages and Range<br>Pythagoras<br>Quadratics<br>Simultaneous equations<br>Trigonometry<br>Statistical diagrams<br>Vectors | Calculating averages and range of lists and tables of data.<br>Using averages and range to make conclusions about data.<br>Using Pythagoras to find missing sides of a right-angled triangle.<br>Manipulating quadratic expressions, including factorising and expanding.<br>Solve quadratic equations via factorising<br>Finding missing sides and angles of right-angled triangles using trigonometry<br>Interpreting and presenting statistical data<br>Column vector notation |
| Term 2 | Standard Form<br>Conversion<br>Construction and loci | Working in standard form<br>Converting units of measure and time<br>Contrasting 2D shapes and bisectors<br>Using constructions to find the location of points following certain rules |
| Term 3 | Countdown plans | Bespoke revision plan designed on a class-by-class scale to prepare students for their final exams |

**Year 11 Higher:**

| Term | Topics | Content |
|---|---|---|
| Term 1 | Vectors<br>Statistical diagrams<br>Sequences<br>Compound measures<br>Iteration<br>Averages<br>Algebraic fractions | Vector notation<br>Vector geometry<br>Darwing and interpreting statistical diagrams<br>Forming and interpreting sequences<br>Find the nth term of linear and quadratic sequences<br>Working with compound measure including speed-distance-time, density-mass-volume, force-pressure-area<br>Using iteration to estimate solutions<br>Calculating and interpreting averages and range<br>Working with algebraic fractions |
| Term 2 | Circle theorems<br>Trigonometry<br>Growth and decay<br>Graphs<br>Angles, bearings and scale | Applying circle theorems to geometric problems<br>Proving circle theorems<br>Finding missing sides and angles in all triangles (including non-right-angled triangles)<br>Working with repeated percentage change and depreciation.<br>Working with angle facts<br>Calculating and measuring bearings<br>Using scales for drawing and maps |
| Term 3 | Countdown plans | Bespoke revision plan designed on a class-by-class scale to prepare students for their final exams |