# Gartree High School Mathematics Curriculum

## Subject Aim

Students develop fluent knowledge of a wide range of mathematical concepts that they are able to apply to chains of their own reasoning and when solving problems.

## Curriculum Content

**Year 7**

Students will study the following units.

- Integers and decimals
- Calculations
- Measures, area and perimeter
- Powers and roots
- Angles and 2D shapes
- Algebraic expressions and formulae
- Factors, multiples and primes
- Constructions
- Statistics

**Year 8**

Students will study the following units.

- Fractions, decimals and percentages
- Sequences
- Transformations and symmetry
- Algebraic equations
- Ratio and proportion
- 3D shapes
- Graphs
- Probability

**Year 9, 10 and 11**

Students will study various concepts linking to the following topic area throughout the GCSE course.

**Algebra**

- Algebraic equations
- Algebraic expressions
- Algebraic formulae
- Algebraic inequalities
- Functions
- Iteration (Higher only)
- Sequences

**Approximation and Estimation**

- Rounding and truncation
- Estimation
- Error intervals

**Basic Geometry**

- 3D shapes
- Angles
- Circle theorems (Higher only)
- Properties of 2D shapes
- Ruler and compass constructions

**Congruency and Similarity**

- Congruency
- Similarity
- Transformations
- Vector geometry

**Fractions, Decimals and Percentages**

- Decimals
- Fractions
- Ordering fractions, decimals and percentages
- Percentages

**Graphs of Equations and Functions**

- Graphs of equations and functions
- Interpreting graphs
- Straight line graphs
- Transformations of curves and their equations (Higher only)

**Indices and Surds**

- Exact calculations with indices and surds
- Powers and roots
- Standard form

**Mensuration**

- Area calculations
- Circles
- Perimeter calculations
- Pythagoras and trigonometry
- Units of measure
- Volume and surface area

**Number Operations and Integers**

- Calculations with integers
- Operations
- Whole number theory

**Probability**

- Basic probability and experiments
- Combined events and probability diagrams

**Ratio, Proportion and Rates of Change**

- Calculations with ratio
- Direct and inverse proportion
- Growth and decay

**Statistics**

- Analysing data
- Interpreting and representing data
- Sampling