Subject: Mathematics

Year 10 Foundation

OVERVIEW

Students study topics in each of the five key strands in mathematics: Number, Algebra, Geometry, Ratio & Proportion and Statistics & Probability. Each strand builds on their prior learning from Years 7, 8, and 9.

We focus on developing knowledge and skills in each of the five strands which students will then build on to solve problems and reason mathematically.

Autumn

10.01: Rearranging – one step rearranging, multi-step rearranging, rearranging with fractions, with negative unknowns and with unknowns on both sides. In this unit we will also revisit algebraic fundamentals such as collecting like terms, expanding and factorising.

10.02: Linear Graphs – coordinates, midpoint, horizontal and vertical lines, drawing straight line graphs, real life graphs. In this unit we will also revisit substitution.

10.03: Gradient and y-intercept – identifying gradients and y-intercepts, finding the equation from a graph, finding the equation from gradient and coordinates.

10.04: Compound Measures – calculating speed distance and time, calculating average speed, distance time graphs, calculating density mass and volume, calculating force pressure and area.

Assessment:

Students will be informally assessed every lesson using questioning and marking of independent work.

Students will be assessed at the end of every topic using Edexcel GCSE questions.

Spring

10.05: Quadratic graphs – drawing quadratics, identifying roots solutions and turning points, finding roots, lines of symmetry, finding turning points.

10.06: Linear simultaneous equations – solving linear simultaneous equations with elimination and substitution method, solving linear simultaneous equations graphically. In this unit we will also revisit solving linear equations.

10.08: Probability – probability scale, listing, single event probability, relative frequency, expected outcomes, frequency trees, sample space, Venn diagrams, tree diagrams.

10.09: Standard form – writing numbers in standard form, four operations with standard form.

10.10: Simple Interest – calculating percentage increase and decrease in context.

Assessment:

Mid-Year assessments will take place in January.

Students will be informally assessed every lesson using questioning and marking of independent work.

Students will be assessed at the end of every topic using Edexcel GCSE questions.

Summer

10.11: Growth and decay – simple interest, compound interest, comparing compound and simple interest, depreciation, exponential growth and decay.

10.12: Further ratio – equivalent ratio, ratios to fractions, sharing in a given ratio, combining ratios, splitting ratios, problem solving with ratio.

Unit 13: Statistics - types of data, sampling, mode median and range, mean, problem solving with mean, combining mean, comparing averages, averages and range from a frequency table, mean from a frequency table, mean from a grouped frequency table, pie charts, scatter graphs, frequency polygons.

Assessment:

Students will be informally assessed every lesson using questioning and marking of independent work.

Students will be assessed at the end of every topic using Edexcel GCSE questions.

End of Year assessments will take place in June.

Useful resources for supporting your child at home:

Videos on Sparx (www.sparxmaths.uk)

Videos on Corbett Maths (Videos and Worksheets – Corbettmaths)

CGP GCSE Maths Edexcel Revision Guide (link here)

REVISE Pearson Edexcel GCSE (9-1) Mathematics (link here)

Homework:

Homework will be set on Sparx (www.sparxmaths.uk).

Homework will be set once a week and students are expected to complete 100% of their homework each week. Homework is bespoke for all students depending on their performance in previous weeks.