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.

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Unit F1: Integers and Place Value – place value, four operations, order of operations

Unit F2: Decimals – place value, four operations, powers of 10

Unit F3: Rounding – nearest integer, nearest 10, 100, 1000, decimal places

Unit F4: Squares and Cubes – square and cube numbers, roots

Unit F5: Indices – index laws, powers of 10, order of operations

Unit F6: Calculator Skills – typing multi-step operations into a calculator and rounding answers

Unit F7: Simplifying Algebra – like terms, multiplying terms, dividing terms

Unit F8: Expanding and Factorising – expanding and factorising with single brackets

Unit F9: Solving Equations – solving one and two step equations, with brackets

Unit F10: Time and Timetables – converting time, reading timetables

Unit F11: Measuring – measuring lines and angles

Assessment:

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

There will be an End of Topic Review at the end of each unit or group of units.

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Unit F14: Units and Conversions – converting between units of length, capacity and mass

Unit F15: Area and Perimeter (Grids) – area of a shape from a grid, perimeter of a shape from a grid

Unit F16: Polygons – naming polygons, exterior angles, interior angles

Unit F17: Circles - parts of a circle, circumference, area

Unit F18: Symmetry – line symmetry, rotational symmetry

Unit F19: Averages and Range – mean, median, mode and range

Unit F20: Representing Data - bar charts, line graphs, pictograms, stem and leaf diagrams, pie charts

Assessment:

Mid-Year assessments will take place in January.

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

There will be an End of Topic Review at the end of each unit or group of units.

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Unit F21: Compound Measures – calculating speed distance and time, calculating average speed, distance time graphs, calculating density mass and volume, calculating force pressure and area

Unit F22: Growth and decay – simple interest, compound interest, comparing compound and simple interest, depreciation, exponential growth and decay

Unit F23: Plotting Graphs – plotting straight line graphs, plotting quadratic graphs, properties of quadratic graphs, cubic and reciprocal graphs

Unit F24: Standard Form Calculations – converting numbers to and from standard form, adding and subtracting, multiplying and dividing

Unit F25: Ratio 2 – simplifying ratios, ratios as fractions, sharing in a ratio when the total, part or difference is given

Unit F26: Transformations 2 – reflection, rotation, enlargement and translation, combined transformations, positive and negative enlargement

Assessment:

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

There will be an End of Topic Review at the end of each unit.

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.