Subject: Mathematics

Year 10 Crossover

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 C1: Forming and Solving Equations – forming expressions from words, forming and solving equations from worded problems, forming and solving equations involving shape and angles

Unit C2: Rearranging – one step rearranging, multi step rearranging, rearranging with fractions, with negative unknowns and with unknowns on both sides

Unit C3: Compound Measures – calculating speed distance and time, calculating average speed, distance time graphs, calculating density mass and volume, calculating force pressure and area

Unit C4: Growth and decay – simple interest, compound interest, comparing compound and simple interest, depreciation, exponential growth and decay

Unit C5: Coordinate Geometry – equation of a straight line, rearranging y=mx+c, equation of a line, parallel lines, perpendicular lines

Unit C6: Plotting Graphs – plotting straight line graphs, plotting quadratic graphs, properties of quadratic graphs, cubic and reciprocal graphs

Unit C7: Simultaneous Equations 1 – solving linear simultaneous equations with elimination and substitution method, solving linear simultaneous equations graphically

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.

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Unit C8*: Probability Trees - drawing probability trees, probability trees with and without replacement

Unit C9: Congruence and Similar Shapes 2 – congruent triangles, congruency proof, similar triangles, area scale factor, volume scale factor

Unit C10: Volume and Surface Area 2 – volume and surface area of cylinders, pyramids, cones, and spheres

Unit C11: Right Angle Trigonometry – finding missing side lengths, finding missing angles, problem solving with trigonometry

Unit C12: Transformations 2 – combined transformations, positive and negative enlargement

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.

Sum

Unit C13: Ratio 2 – combined ratio, combined ratio on a line, splitting in a ratio

Unit C14: Standard Form Calculations – multiplying and dividing with standard form, adding and subtracting with standard form, standard form with a calculator

Unit C10: Averages and Range – sampling and bias, mode, median and range from a frequency table, mean from a frequency table, mean from a grouped frequency table

Unit C9: Representing Data 3 – frequency polygons, drawing scatter graphs, interpreting scatter graphs, time series graphs

Unit C16: Product Rule - calculating the number of possible combinations

Unit C15: Recurring Decimals – recurring decimals to fractions, calculations with recurring decimals

Unit C21: Quadratic Sequences – quadratic nth term, generating quadratic sequences

Unit C13: Bearings – measuring, reading and drawing bearings, bearings with Pythagoras and trigonometry

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.