Subject: Mathematics

Year 9

OVERVIEW

In the Year 9 curriculum students study topics from four key strands of mathematics: Number, Algebra, Geometry and Ratio & Proportion. Each strand builds on their prior learning from Years 7and 8. We focus on developing knowledge and skills in each of the four strands which students will then build on to solve problems and exhibit their mathematical reasoning.

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Unit 1: Estimation and Limits of accuracy – Estimation, truncation, error intervals

Unit 2 Related Calculations – related calculations with multiplication and division

Unit 3: Index Laws – working with index laws, zero and negative powers, fractional powers, converting to a different base

Unit 4: Expanding & Factorising – expanding and simplifying brackets, factorising an expression, expanding double brackets, factorising quadratics, *expanding triple brackets

Unit 5: Algebraic Fractions – Multiplying algebraic terms, simplifying algebraic fractions, add/subtract/multiply and divide algebraic fractions, *solve linear equations from algebraic fractions

Unit 6: Probability – Relative frequency and expected outcomes, Venn diagrams – sets and probability, tree diagrams

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 7: Equations 2 – negative and fractional, quadratic: one and two step equations, subject in the denominator, negative unknowns, multistep equations, equations with brackets and fractions, unknowns on both sides, substituting and solving

Unit 8: Inequalities – drawing on a number line, integer solutions, solving inequalities, solving double inequalities, solving negative inequalities, *quadratic inequalities

Unit 9: Sequences – Unique sequences, nth term, *quadratic nth term

Unit 10: Vectors 1 – Drawing vectors, adding/subtracting vectors, multiplying vectors, resultant vectors

Unit 11: Interior/Exterior angles – Interior/Exterior angles of regular polygons, interior/exterior angles of irregular polygons, tessellation and problem solving with interior/exterior angles.

Unit 12: Pythagoras – Finding the hypotenuse, finding the shorter side, multistep Pythagoras and problem solving with Pythagoras

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 13: Circles – Circumference, arc length, revolutions, compound perimeter, area and parts, sector area, compound area

Unit 14: Surface Area and Volume 1 – surface area and volume of: cubes and cuboids, prisms, cylinders, cones and spheres and hemispheres

Unit 15 – Averages and Range 3 – sampling and bias, averages and range from grouped and ungrouped frequency tables

Unit 16: Constructions and Loci – line bisectors, angle bisectors, loci rules, loci problem solving

Unit 17: Plans and Elevations – Plans and elevations of typical 3D shapes, plans and elevations of irregular 3D shapes, sketching 3D shapes from plans and elevations.

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 KS3 revision guides/work books (KS3 Maths | CGP Books)

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.

Should your child be struggling to access their homework – please encourage them to speak to their teacher.