

Year 10 Mathematics: Semester 1 Overview 2020

Teacher: Rebecca Vogt & Kathy Keenan

By the end of Year 10, students recognise the connection between simple and compound interest. They solve problems involving linear equations and inequalities. They make the connections between algebraic and graphical representations of relations. Students solve surface area and volume problems relating to composite solids. They recognise the relationships between parallel and perpendicular lines. Students apply deductive reasoning to proofs and numerical exercises involving plane shapes. They compare data sets by referring to the shapes of the various data displays. They describe bivariate data where the independent variable is time. Students describe statistical relationships between two continuous variables. They evaluate statistical reports.

Students expand binomial expressions and factorise monic quadratic expressions. They find unknown values after substitution into formulas. They perform the four operations with simple algebraic fractions. Students solve simple quadratic equations and pairs of simultaneous equations. They use triangle and angle properties to prove congruence and similarity. Students use trigonometry to calculate unknown angles in right-angled triangles. Students list outcomes for multi-step chance experiments and assign probabilities for these experiments. They calculate quartiles and inter-quartile ranges.

Term 1	Topic	Assessments
Weeks 1-5	Measurement <ul style="list-style-type: none"> - Area of basic shapes (review) - Surface area of prisms and cylinders - Volume of prisms and cylinders - Surface area of tapered solids and spheres - Volume of tapered solids and spheres - Applications of volume 	<p>*Throughout the semester there are formative and summative assessments that assess the student's level of learning and understanding of the topic being covered</p> <p>Measurement Investigation Maximum of 6 single-sided A4 pages. Mathematical Investigation report format.</p> <p>Measurement Test Calculator permitted One side of an A4 page of handwritten notes permitted. 50 minutes</p>
Weeks 6-11	Pythagoras and Trigonometry <ul style="list-style-type: none"> - Pythagoras (review) - The trigonometric ratios - Finding lengths - Finding angles - Angles of elevation and depression 	<p>Trigonometry Investigation Maximum of 6 single-sided A4 pages. Mathematical Investigation report format.</p> <p>Trigonometry Test Calculator permitted One side of an A4 page of handwritten notes permitted. 50 minutes</p>

Term 2 Weeks 1-3	Algebra <ul style="list-style-type: none"> - Expanding brackets and simplifying (review) - Factorising using common factors - Factorising by the difference of two squares - Factorising by completing the square - Algebraic fractions - Rearranging Formula - 	Algebra Test No calculator or notes. 30 minutes
Week 4	Careers Week	
Week 5	Work Experience	
Weeks 6-10	Linear Relationships <ul style="list-style-type: none"> - Linear Equations - Gradient/Slope - Graphing linear equations - Parallel and Perpendicular Lines - Inequalities - Simultaneous Equations 	Linear equations Test Calculator permitted One side of an A4 page of handwritten notes permitted. 50 minutes

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