Craigslea
State High School

....Educating Global Citizens

Year Level Plan	Year 8	Semester 1	Mathematics	

Term 1		Term 2	
Unit 1	**Unit 2**	**Unit 3**	**Unit 4**
In Unit 1 students will be working mathematically within the following content and explore how the content is explored or developed.	In Unit 2 students will be working mathematically within the following content and explore how the content is explored or developed.	In Unit 3 students will be working mathematically within the following content and explore how the content is explored or developed.	In Unit 4 students will be working mathematically within the following content and explore how the content is explored or developed.
• **understanding** includes describing patterns involving recurring decimals, identifying commonalities between operations with algebra and arithmetic. • **fluency** includes calculating accurately with simple decimals, and integers; recognising equivalence of common decimals and fractions including recurring decimals. • **problem-solving** includes formulating and modelling practical situations involving ratios, profit and loss. • **reasoning** includes justifying the result of a calculation or estimation as reasonable.	• **understanding** includes explaining the purpose of statistical measures • **fluency** includes calculating accurately with simple decimals, and integers; recognising equivalence of common decimals and fractions including recurring decimals; • **problem-solving** includes formulating and modelling practical situations involving ratios • **reasoning** includes justifying the result of a calculation or estimation as reasonable, finding estimates of means and proportions of populations.	• **understanding** includes describing patterns involving recurring decimals, identifying commonalities between operations with algebra and arithmetic. Explaining the purpose of statistical measures. • **fluency** includes calculating accurately with simple decimals and integers; recognising equivalence of common decimals and fractions including recurring decimals; • **problem-solving** includes formulating and modelling practical situations involving ratios, and using two-way tables and Venn diagrams to calculate probabilities. • **reasoning** includes justifying the result of a calculation or estimation as reasonable, deriving probability from its complement, finding estimates of means and proportions of populations.	• **understanding** includes describing patterns involving indices and recurring decimals, identifying commonalities between operations with algebra and arithmetic, • **fluency** includes calculating accurately with simple decimals, indices and integers; recognising equivalence of common decimals and fractions including recurring decimals; • **problem-solving** includes formulating and modelling practical situations involving ratios • **reasoning** includes justifying the result of a calculation or estimation as reasonable

Assessment Tasks			
Summative Assessment Task 1: 60 - 70 min Test at the end of Unit 1 (Unit 1 only) **Approximately Week 8 Term 1** **Semester Weighting: $33\frac{1}{3}$%**	**Summative Assessment Task 2:** Students collect representative data and interpret the results to find relationships. In Class Extended Problem Solving Task over 3 class lessons given. Due: Mid Term 2 (Unit 2). Approxmately Week 3 T2 Conditions: All components are completed in class. ***No Take home components***. **Semester Weighting: $33\frac{1}{3}$%**	**Summative Assessment Task 2:** Students collect representative data and interpret the results to find relationships. In Class Extended Problem Solving Task over 3 class lessons given. Start: Week 3 final lesson to be complete Week 4. Conditions: All components are completed in class (3 lessons) ***No take home components*** **Semester Weighting: $33\frac{1}{3}$%**	**Summative Assessment Task 3: 60 - 70 min** Test at the end of Term 2 (Unit 3 and 4) **Approximately Week 9 Term 2** **Semester Weighting: $33\frac{1}{3}$%**
• Solve problems involving profit and loss, with and without digital technologies • Carry out the four operations with integers, using efficient mental and written strategies and appropriate digital technologies • Solve problems involving the use of percentages, including percentage increases and decreases, with and without digital technologies • Solve a range of problems involving rates and ratios, with and without digital technologies	• Explore the practicalities and implications of obtaining data through sampling using a variety of investigative processes • Investigate techniques for collecting data, including census, sampling and observation • Investigate the effect of individual data values , including outliers, on the mean and median • Explore the variation of means and proportions of random samples drawn from the same population	• Identify complementary events and use the sum of probabilities to solve problems • Describe events using language of 'at least', exclusive 'or' (A or B but not both), inclusive 'or' (A or B or both) and 'and' • Represent events in two-way tables and Venn diagrams and solve related problems	• Investigate terminating and recurring decimals • Investigate the concept of irrational numbers, including π • Use index notation with numbers to establish the index laws with positive integral indices and the zero index • Solve problems involving duration, including using 12- and 24-hour time within a single time zone

Year Level Plan	Year 8	Semester 2	Mathematics	
			Term 3	**Term 4**
Unit 5		**Unit 6**	**Unit 7**	**Unit 8**
In Unit 5 students will be working mathematically within the following content and explore how the content is explored or developed. • **understanding** includes describing patterns involving algebra and arithmetic, connecting rules for linear relations with their graphs. • **fluency** includes factorising and simplifying basic algebraic expressions. • **problem-solving** includes formulating and modelling practical situations involving ratios, profit and loss, areas and perimeters. • **reasoning** includes justifying the result of a calculation or estimation as reasonable		In Unit 6 students will be working mathematically within the following content and explore how the content is explored or developed. • **understanding** includes describing patterns, identifying commonalities between operations with algebra and arithmetic, connecting rules for linear relations with their graphs, explaining the purpose of statistical measures. • **fluency** includes calculating accurately with simple decimals, and integers; recognising equivalence of common decimals and fractions; simplifying basic algebraic expressions. • **problem-solving** includes formulating and modelling practical situations involving ratios, profit and loss. • **reasoning** includes justifying the result of a calculation or estimation as reasonable.	In Unit 7 students will be working mathematically within the following content and explore how the content is explored or developed. • **understanding** • **fluency** • **problem-solving** • **reasoning** includes justifying the result of a calculation or estimation as reasonable, using congruence to deduce properties of triangles.	In Unit 8 students will be working mathematically within the following content and explore how the content is explored or developed. • **understanding** includes explaining measurements of perimeter and area. • **fluency** includes calculating accurately with simple decimals, indices and integers; recognising equivalence of common decimals and fractions including recurring decimals; and evaluating perimeters and areas of common shapes and volumes of three-dimensional objects. • **problem-solving** includes formulating and modelling areas and perimeters of common shapes. • **reasoning** includes justifying the result of a calculation or estimation as reasonable.
Assessment Tasks				
• Factorise algebraic expressions by identifying numerical factors • Extend and apply the distributive law to the expansion of algebraic expressions • Simplify algebraic expressions involving the four operations • Solve linear equations using algebraic and graphical techniques. Verify solutions by substitution		**Summative Assessment Task 4: 60 - 70 min** Test Term 3 Week 6 (U5 and U6) **Semester Weighting: 40%** • Plot linear relationships on the Cartesian plane with and without the use of digital technologies • Solve linear equations using algebraic and graphical techniques. Verify solutions by substitution	**Short Exam (Unit 7 Only) Week 10 Term 3** **Semester Weighting: 20%** • Define congruence of plane shapes using transformations • Develop the conditions for congruence of triangles • Establish properties of quadrilaterals using congruent triangles and angle properties, and solve related numerical problems using reasoning	**Exam (U8)** Term 4 End of Week 7 **Semester Weighting: 40%** • Choose appropriate units of measurement for area and volume and convert from one unit to another • Find perimeters and areas of parallelograms, trapeziums, rhombuses and kites • Investigate the relationship between features of circles such as circumference, area, radius and diameter. Use formulas to solve problems involving circumference and area • Develop the formulas for volumes of rectangular and triangular prisms and prisms in general. Use formulas to solve problems involving volume