Year Level: 8

Subject: Mathematics

Week	Unit	Learning Focus	Victorian Curriculum
Term 1 1-2	Integers	Adding, subtracting, multiplying and dividing positive and negative numbers. Understanding of movement up and down a number line. Discussion revolving around real situations.	Carry out the four operations with rational numbers and integers, using efficient mental and written strategies and appropriate digital technologies and make estimates for these computations. (VCMNA273)
3-6	Algebra	Simplifying expressions. Expanding brackets. Factorising expressions.	Extend and apply the distributive law to the expansion of algebraic expressions. (VCMNA279) Factorise algebraic expressions by identifying numerical factors. (VCMNA280) Simplify algebraic expressions involving the four operations. (VCMNA281) Use algorithms and related testing procedures to identify and correct errors. (VCMNA282)
7-10	Probability	Using numbers to represent the likelihood of certain events taking place. Learning the language of probability and using tree and Venn diagrams to show outcomes and relationships between different groups.	Identify complementary events and use the sum of probabilities to solve problems. (VCMSP294) Describe events using language of 'at least', exclusive 'or' (A or B but not both), inclusive 'or' (A or B or both) and 'and'. (VCMSP295) Represent events in two-way tables and Venn diagrams and solve related problems. (VCMSP296)
Term 2 1-2	Decimals	Rounding decimals. Terminating, non-terminating and recurring decimals.	Investigate terminating and recurring decimals. (VCMNA274) Investigate the concept of irrational numbers, including π. (VCMNA275)
3-7	Measurement	Converting units of measurement for area and volume. Finding perimeters and areas of parallelograms, trapeziums, rhombuses and kites. Investigating circles and finding circumference and area. Calculating volumes for rectangular and triangular prisms.	Choose appropriate units of measurement for area and volume and convert from one unit to another. (VCMMG286) Find perimeters and areas of parallelograms, trapeziums, rhombuses and kites. (VCMMG287) Investigate the relationship between features of circles such as circumference, area, radius and diameter. Use formulas to solve problems involving determining radius, diameter, circumference and area from each other. (VCMMG288) Develop the formulas for volumes of rectangular and triangular prisms and prisms in general. Use formulas to solve problems involving volume. (VCMMG289)
8-10	Rates and Ratios		Solve a range of problems involving rates and ratios, including distance-time problems for travel at a

			constant speed, with and without digital technologies. (VCMNA277)
Term 3 1-3	Percentages, Profit and Loss	Investigate and calculate best buys and solve problems involving profit and loss.	Solve problems involving the use of percentages, including percentage increases and decreases and percentage error, with and without digital technologies. (VCMNA276) Solve problems involving profit and loss, with and without digital technologies. (VCMNA278)
4-7	Linear and Non-Linear Relationships	Solving one and two step equations. Checking answers with substitution. Plot coordinates to create linear graphs. Solve equations using a graph. Analyse the key components of linear verses non-linear relationships.	Solve linear equations using algebraic and graphical techniques. Verify solutions by substitution. (VCMNA284) Plot linear relationships on the Cartesian plane with and without the use of digital technologies. (VCMNA283) Plot graphs of non-linear real life data with and without the use of digital technologies, and interpret and analyse these graphs. (VCMNA285)
8-10	Geometry	Develop an understanding of congruence of plane shapes and triangles. Understanding sum of angles in different shapes and finding unknown angles.	Define congruence of plane shapes using transformations and use transformations of congruent shapes to produce regular patterns in the plane including tessellations with and without the use of digital technology. (VCMMG291) Develop the conditions for congruence of triangles. (VCMMG292) Establish properties of quadrilaterals using congruent triangles and angle properties, and solve related numerical problems using reasoning. (VCMMG293)
Term 4 1-5	Statistics	Methods of sampling data. Types of data. Presenting data Summary statistics. Analysing data. Outliers and their effects on summary statistics.	Distinguish between a population and a sample and investigate techniques for collecting data, including census, sampling and observation. (VCMSP297) Explore the practicalities and implications of obtaining data through sampling using a variety of investigative processes. (VCMSP298) Explore the variation of means and proportions of random samples drawn from the same population. (VCMSP299) Investigate the effect of individual data values including outliers, on the range, mean and median. (VCMSP300)
6-8	Index Laws	Learning the first, second, third and fourth Index Law including the zero index.	Use index notation with numbers to establish the index laws with positive integral indices and the zero index (VCMNA272)
9-10	Time Zones	Longitude and Latitude. Identifying regions that are in the same time zone.	Solve problems involving duration, including using 12- and 24-hour time within a single time zone. (VCMMG290)