Victorian Curriculum Foundation–10

VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY

Level 6

Mathematics

Mathematics Level Description

In Level 6, students work with prime, composite, square and triangular numbers and carry out mental, written and technology based computation to solve whole number problems involving all four operations. They explore everyday situations involving integers, and use a number line to represent them. They scale decimals by powers of ten, and add and subtract decimals with and without technology, and estimate their answers. Students calculate simple percentage discounts, multiply decimals by whole numbers, carry out divisions with terminating decimal remainders, and use simple fraction, decimal and percentage equivalences with and without technology. They create sequences involving whole numbers, fractions and decimals, describe their rules, and use brackets and order of operations to write number sentences involving multiple operations.

Students use decimals for metric measurement, convert between units, recognise the prefixes used in metric measurements, and relate and compare measures and units, including capacity and volume. They develop and use timetables. Students investigate combinations of transformations with and without technology, and use the Cartesian coordinate system to describe location in the plane. They investigate the sum of angles at a point on a line and vertically opposite angles.

Students carry out experiments involving chance with and without technology, compare variation in frequencies across experiments with expected frequencies, and use fractions, decimals and percentages to describe probabilities. They interpret a range of data displays, including those for two categorical variables, and interpret data presented in the media.

Mathematics Content Descriptions

Number and Algebra	Measurement and Geometry	Statistics and Probability
Number and place value	**Using units of measurement**	**Chance**
Identify and describe properties of prime, composite, square and triangular numbers (VCMNA208)	Connect decimal representations to the metric system (VCMMG222)	Describe probabilities using fractions, decimals and percentages (VCMSP232)
Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers and make estimates for these computations (VCMNA209)	Convert between common metric units of length, mass and capacity (VCMMG223)	Conduct chance experiments with both small and large numbers of trials using appropriate digital technologies (VCMSP233)
	Solve problems involving the comparison of lengths and areas using appropriate units (VCMMG224)	Compare observed frequencies across experiments with expected frequencies (VCMSP234)
Investigate everyday situations that use integers. Locate and represent these numbers on a number line	Connect volume and capacity and their units of measurement (VCMMG225)	**Data representation and interpretation**
		Construct, interpret and compare a range of data

numbers on a number line
(VCMNA210)

Fractions and decimals

Compare fractions with related denominators and locate and represent them on a number line (VCMNA211)

Solve problems involving addition and subtraction of fractions with the same or related denominators (VCMNA212)

Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies (VCMNA213)

Add and subtract decimals, with and without digital technologies, and use estimation and rounding to check the reasonableness of answers (VCMNA214)

Multiply decimals by whole numbers and perform divisions by non-zero whole numbers where the results are terminating decimals, with and without digital

technologies (VCMNA215)

Multiply and divide decimals by powers of 10 (VCMNA216)

Make connections between equivalent fractions, decimals and percentages (VCMNA217)

Money and financial mathematics

Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies (VCMNA218)

Patterns and algebra

Continue and create sequences involving whole numbers, fractions and decimals. Describe the rule used to create the sequence

Interpret and use timetables (VCMMG226)

Measure, calculate and compare elapsed time (VCMMG227)

Shape

Construct simple prisms and pyramids (VCMMG228)

Location and transformation

Investigate the effect of combinations of transformations on simple and composite shapes, including creating tessellations, with and without the use of digital technologies (VCMMG229)

Introduce the Cartesian coordinate system using all four quadrants (VCMMG230)

Geometric reasoning

Investigate, with and without digital technologies, angles on a straight line, angles at a point and vertically opposite angles. Use results to find

unknown angles (VCMMG231)

displays, including side-by-side column graphs for two categorical variables (VCMSP235)

Interpret secondary data presented in digital media and elsewhere (VCMSP236)

Pose and refine questions to collect categorical or numerical data by observation or survey (VCMSP237)

(VCMNA219)

Explore the use of brackets and order of operations to write number sentences (VCMNA220)

Design algorithms involving branching and iteration to solve specific classes of mathematical problems (VCMNA221)

Mathematics Achievement Standard

Number and Algebra

Students recognise the properties of prime, composite, square and triangular numbers and determine sets of these numbers. They solve problems that involve all four operations with whole numbers and describe the use of integers in everyday contexts. Students locate fractions and integers on a number line and connect fractions, decimals and percentages as different representations of the same number. They solve problems involving the addition and subtraction of related fractions. Students calculate a simple fraction of a quantity and calculate common percentage discounts on sale items, with and without the use of digital technology. They make connections between the powers of 10 and the multiplication and division of decimals. Students add, subtract and multiply decimals and divide decimals where the result is rational. Students write number sentences using brackets and order of operations, and specify rules used to generate sequences involving whole numbers, fractions and decimals. They use ordered pairs of integers to represent coordinates of points and locate a point in any one of the four quadrants on the Cartesian plane.

Measurement and Geometry

Students relate decimals to the metric system and choose appropriate units of measurement to perform a calculation. They solve problems involving time, length and area, and make connections between capacity and volume. Students interpret a variety of everyday timetables. They solve problems using the properties of angles and investigate simple combinations of transformations in the plane, with and without the use of digital technology. Students construct simple prisms and pyramids.

Statistics and Probability

Students interpret and compare a variety of data displays, including displays for two categorical variables. They analyse and evaluate data from secondary sources. Students compare observed and expected frequencies of events, including those where outcomes of trials are generated with the use of digital technology. They specify, list and communicate probabilities of events using simple ratios, fractions, decimals and percentages.