# Mathematics – comparison of curriculums

## Foundation

### Achievement standard

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Number and Algebra  Students connect number names and numerals with sets of up to 20 elements, estimate the size of these sets, and use counting strategies to solve problems that involve comparing, combining and separating these sets. They match individual objects with counting sequences up to and back from 20. Students order the first 10 elements of a set. They represent, continue and create simple patterns.  Measurement and Geometry  Students identify measurement attributes in practical situations and compare lengths, masses and capacities of familiar objects. They order events, explain their duration, and match days of the week to familiar events. Students identify simple shapes in their environment and sort shapes by their common and distinctive features. They use simple statements and gestures to describe location.  Statistics and Probability  Students sort familiar categorical data into sets and use these to answer yes/no questions and make simple true/false statements about the data. | By the end of Foundation, students make connections between number names, numerals and position in the sequence of numbers from zero to at least 20. They use subitising and counting strategies to quantify collections. Students compare the size of collections to at least 20. They partition and combine collections up to 10 in different ways, representing these with numbers. Students represent practical situations, including simple financial situations involving money, that involve quantifying, equal sharing, adding to and taking away from collections to at least 10.  Students represent, continue and create simple repeating patterns.  Students identify the attributes of mass, capacity, length and duration, and use direct comparison strategies to compare objects and events. They sequence and connect familiar events to the time of day.  Students name, create and sort familiar shapes and give their reasoning. They describe the position and the location of themselves and objects in relation to other objects and people within a familiar space.  Students collect, sort and compare data in response to questions in familiar contexts. | Removed the 3 strand headings because no longer relevant (now in 5 strands for Foundation). Achievement standards have been split, refined and realigned to the revised Victorian curriculum.  Note: Probability strand applies from Level 3 – Global Proficiency Framework and research-based change |

### Content descriptions

#### VC2 strand: Number

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond (VCMNA070) | name, represent and order numbers, including zero to at least 20, using physical and virtual materials and numerals  VC2MFN01 | Refined for clarity |
| Subitise small collections of objects (VCMNA071) | recognise and name the number of objects within a collection up to 5 using subitising  VC2MFN02 | Split and refined |
| Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point (VCMNA069)  Compare, order and make correspondences between collections, initially to 20, and explain reasoning (VCMNA072) | quantify and compare collections to at least 20 using counting and explain or demonstrate reasoning  VC2MFN03 | Combined and refined |
| Subitise small collections of objects (VCMNA071) | partition and combine collections up to 10 using part-part-whole relationships and subitising to recognise and name the parts  VC2MFN04 | Refined for clarity |
| Represent practical situations to model sharing (VCMNA074)  Represent simple, everyday financial situations involving money (VCMNA075)  Represent practical situations to model addition and subtraction (VCMNA073) | represent practical situations, including simple financial situations, involving addition, subtraction and quantification with physical and virtual materials and use counting or subitising strategies  VC2MFN05 | Refined and combined |
| Represent practical situations to model sharing (VCMNA074) | represent practical situations that involve equal sharing and grouping with physical and virtual materials and use counting or subitising strategies  VC2MFN06 | Refined |

#### VC2 strand: Algebra

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Sort and classify familiar objects and explain the basis for these classifications, and copy, continue and create patterns with objects and drawings (VCMNA076) | follow a short sequence of instructions; recognise, copy, continue and create repeating patterns represented in different ways  VC2MFA01 | Content descriptions consolidated to facilitate connections in sequencing |
| Follow a short sequence of instructions (VCMNA077) |

#### VC2 strand: Measurement

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Use direct and indirect comparisons to decide which is longer, heavier or holds more, and explain reasoning in everyday language (VCMMG078)  Compare and order the duration of events using the everyday language of time (VCMMG079) | identify and compare attributes of objects and events, including length, capacity, mass and duration, use direct comparisons and communicate reasoning  VC2MFM01 | Split, combined and refined |
| Compare and order the duration of events using the everyday language of time (VCMMG079)  Connect days of the week to familiar events and actions (VCMMG080) | sequence days of the week and times of the day, including morning, lunchtime, afternoon and night-time, and connect them to familiar events and actions  VC2MFM02 | Split, combined and refined |

#### VC2 strand: Space

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Sort and classify familiar objects and explain the basis for these classifications, and copy, continue and create patterns with objects and drawings (VCMNA076)  Sort, describe and name familiar two-dimensional shapes and three-dimensional objects in the environment (VCMMG081) | sort, name and create familiar shapes; recognise and describe familiar shapes within objects in the environment, giving reasons  VC2MFSP01 | Split and combined |
| Describe position and movement (VCMMG082) | describe the position and location of themselves and objects in relation to other people and objects within a familiar space  VC2MFSP02 | Refined |

#### VC2 strand: Statistics

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Organise answers to yes/no questions into simple data displays using objects and drawings (VCMSP084) | collect, sort and compare data represented by objects and images in response to given investigative questions that have only 2 outcomes and relate to familiar situations  VC2MFST01 | Content descriptions consolidated into VC2MFST01 to facilitate connections in sequencing |
| Interpret simple data displays about yes/no questions (VCMSP085) |
| Answer yes/no questions to collect information (VCMSP083)  Sort and classify familiar objects and explain the basis for these classifications, and copy, continue and create patterns with objects and drawings (VCMNA076) |

## Level 1

### Achievement standard

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Number and Algebra  Students connect number names and numerals with sets of up to 20 elements, estimate the size of these sets, and use counting strategies to solve problems that involve comparing, combining and separating these sets. They match individual objects with counting sequences up to and back from 20. Students order the first 10 elements of a set. They represent, continue and create simple patterns.  Measurement and Geometry  Students identify measurement attributes in practical situations and compare lengths, masses and capacities of familiar objects. They order events, explain their duration, and match days of the week to familiar events. Students identify simple shapes in their environment and sort shapes by their common and distinctive features. They use simple statements and gestures to describe location.  Statistics and Probability  Students sort familiar categorical data into sets and use these to answer yes/no questions and make simple true/false statements about the data | By the end of Level 1, students connect number names, numerals and quantities, and order numbers to at least 120. They demonstrate how one- and two-digit numbers can be partitioned in different ways and that two-digit numbers can be partitioned into tens and ones. Students partition collections into equal groups and skip count in twos, fives or tens to quantify collections to at least 120. They solve problems involving addition and subtraction of numbers to 20 and use mathematical modelling to solve practical problems involving addition, subtraction, equal sharing and grouping, using calculation strategies.  Students use numbers, symbols and objects, including Australian coins, to create skip counting and repeating patterns, identifying the repeating unit.  Students compare and order objects and events based on the attributes of length, mass, capacity and duration, communicating their reasoning. They measure the length of shapes and objects using uniform informal units.  Students make, compare and classify shapes and objects using identifiable features. They give and follow directions to move people and objects within a space.  Students collect and record categorical data, create one-to-one displays, and compare and discuss the data using frequencies. | Removed the 3 strand headings because no longer relevant (now in 5 strands for Level 1). Achievement standards have been split, refined and realigned to the revised Victorian curriculum.  Note: Probability strand applies from Level 3 – Global Proficiency Framework and research-based change |

### Content descriptions

#### VC2 strand: Number

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Develop confidence with number sequences to and from 100 by ones from any starting point. Skip count by twos, fives and tens starting from zero (VCMNA086)  Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line (VCMNA087) | recognise, represent and order numbers to at least 120 using physical and virtual materials, numerals, number lines and charts  VC2M1N01 | Split, combined and refined |
|  | partition one- and two-digit numbers in different ways using physical and virtual materials, including partitioning two-digit numbers into tens and ones  VC2M1N02 | New content description |
| Count collections to 100 by partitioning numbers using place value (VCMNA088)  Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and ten from any starting point, then moving to other sequences (VCMNA103) | quantify sets of objects, to at least 120, by partitioning collections into equal groups using number knowledge and skip counting  VC2M1N03 | Combined and realigned from Level 2 Number and Algebra |
| Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts (VCMNA089) | add and subtract numbers within 20, using physical and virtual materials, part-part-whole knowledge to 10 and a variety of calculation strategies  VC2M1N04 | Refined for clarity |
|  | use mathematical modelling to solve practical problems involving additive situations, including simple money transactions; represent the situations with diagrams, physical and virtual materials; use calculation strategies to solve the problem  VC2M1N05 | New content description |
|  | use mathematical modelling to solve practical problems involving equal sharing and grouping; represent the situations with diagrams, physical and virtual materials, and use calculation strategies to solve the problem  VC2M1N06 | New content description |
| Recognise, describe and order Australian coins according to their value (VCMNA092) |  | Removed to reduce duplication |
| Represent practical situations that model sharing (VCMNA090) |  | Removed to reduce duplication |

#### VC2 strand: Algebra

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Develop confidence with number sequences to and from 100 by ones from any starting point. Skip count by twos, fives and tens starting from zero (VCMNA086)  Investigate and describe number patterns formed by skip counting and patterns with objects (VCMNA093)  Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and ten from any starting point, then moving to other sequences (VCMNA103) | recognise, continue and create pattern sequences, with numbers, symbols, shapes and objects including Australian coins, formed by skip counting, initially by twos, fives and tens  VC2M1A01 | Split, combined and realigned from Level 2 Number and Algebra |
| Investigate and describe number patterns formed by skip counting and patterns with objects (VCMNA093)  Recognise the importance of repetition of a process in solving problems (VCMNA094) | recognise, continue and create repeating patterns with numbers, symbols, shapes and objects, identifying the repeating unit and recognising the importance of repetition in solving problems  VC2M1A02 | Split and refined |

#### VC2 strand: Measurement

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Measure and compare the lengths, masses and capacities of pairs of objects using uniform informal units (VCMMG095) | compare directly and indirectly and order objects and events using attributes of length, mass, capacity and duration, communicating reasoning  VC2M1M01 | Refined |
| Measure and compare the lengths, masses and capacities of pairs of objects using uniform informal units (VCMMG095) | measure the length of shapes and objects using informal units, recognising that units need to be uniform and used end-to-end  VC2M1M02 | Refined |
| Describe duration using months, weeks, days and hours (VCMMG097) | describe the duration and sequence of events using years, months, weeks, days and hours  VC2M1M03 | Refined for clarity |

#### VC2 strand: Space

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Recognise and classify familiar two-dimensional shapes and three-dimensional objects using obvious features (VCMMG098) | make, compare and classify familiar shapes; recognise familiar shapes and objects in the environment, identifying the similarities and differences between them  VC2M1SP01 | Refined for clarity |
| Give and follow directions to familiar locations (VCMMG099) | give and follow directions to move people and objects to different locations within a space  VC2M1SP02 | Refined for clarity |

#### VC2 strand: Statistics

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Choose simple questions and gather responses (VCMSP101) | acquire and record data for categorical variables in various ways including using digital tools, objects, images, drawings, lists, tally marks and symbols  VC2M1ST01 | Refined for clarity |
| Represent data with objects and drawings where one object or drawing represents one data value. Describe the displays (VCMSP102) | represent collected data for a categorical variable using one-to-one displays and digital tools where appropriate; compare the data using frequencies and discuss the findings  VC2M1ST02 | Refined for clarity |

#### VC2 strand: Probability

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Identify outcomes of familiar events involving chance and describe them using everyday language such as ‘will happen’, ‘won’t happen’ or ‘might happen’ (VCMSP100) |  | Removed – realigned to Level 3 Probability |

## Level 2

### Achievement standard

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Number and Algebra  Students count to and from, and order numbers up to 1000. They perform simple addition and subtraction calculations, using a range of strategies. They find the total value of simple collections of Australian notes and coins. Students represent multiplication and division by grouping into sets and divide collections and shapes into halves, quarters and eighths. They recognise increasing and decreasing number sequences involving 2s, 3s, 5s and 10s, identify the missing element in a number sequence, and use digital technology to produce sequences by constant addition.  Measurement and Geometry  Students order shapes and objects, using informal units for a range of measures. They tell time to the quarter hour and use a calendar to identify the date, days, weeks and months included in seasons and other events. Students draw two-dimensional shapes, specify their features and explain the effects of one-step transformations. They recognise the features of three-dimensional objects. They interpret simple maps of familiar locations.  Statistics and Probability  Students collect data from relevant questions to create lists, tables and picture graphs with and without the use of digital technology. They interpret data in context. Students use everyday language to describe outcomes of familiar events | By the end of Level 2, students order and represent numbers to at least 1000; apply knowledge of place value to partition, rearrange and rename two- and three-digit numbers in terms of their parts; and regroup partitioned numbers to assist in calculations. They use mathematical modelling to solve practical additive and multiplicative problems, including money transactions, representing the situation and choosing calculation strategies. Students identify and represent part-whole relationships of halves, quarters and eighths in measurement contexts.  Students describe and continue patterns that increase and decrease additively by a constant amount and identify missing elements in the pattern. They recall and demonstrate proficiency with addition and subtraction facts within 20 and multiplication facts for twos.  Students use uniform informal units to measure and compare shapes and objects. They determine the number of days between events using a calendar and read time on an analog clock to the hour, half-hour and quarter hour. Students use quarter, half, three-quarter and full measures of turn in everyday situations.  Students compare and classify shapes, describing features using formal spatial terms. They locate and identify positions of features in two-dimensional representations and move position by following directions and pathways.  Students use a range of methods to collect, record, represent and interpret categorical data in response to questions. | Removed the 3 strand headings because no longer relevant (now in 5 strands for Level 2). Achievement standards have been split, refined and realigned to the revised Victorian curriculum.  Note: Probability strand applies from Level 3 – Global Proficiency Framework and research-based change |

### Content descriptions

#### VC2 strand: Number

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Recognise, model, represent and order numbers to at least 1000 (VCMNA104) | recognise, represent and order numbers to at least 1000 using physical and virtual materials, numerals and number lines  VC2M2N01 | Refined for clarity |
| Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting (VCMNA105) | partition, rearrange, regroup and rename two- and three-digit numbers using standard and non-standard groupings; recognise the role of a zero digit in place value notation  VC2M2N02 | Refined for clarity |
| Recognise and describe one-half as one of two equal parts of a whole (VCMNA091) | recognise and describe one-half as one of 2 equal parts of a whole and connect halves, quarters and eighths through repeated halving  VC2M2N03 | Refined and realigned from Level 1 Number and Algebra |
| Solve simple addition and subtraction problems using a range of efficient mental and written strategies (VCMNA107)  Solve problems by using number sentences for addition or subtraction (VCMNA113) | add and subtract one- and two-digit numbers, represent problems using number sentences and solve using part-part-whole reasoning and a variety of calculation strategies  VC2M2N04 | Split, combined and realigned from Level 2 Number and Algebra |
| Recognise and represent multiplication as repeated addition, groups and arrays (VCMNA108)  Recognise and represent division as grouping into equal sets and solve simple problems using these representations (VCMNA109) | multiply and divide by one-digit numbers using repeated addition, equal grouping, arrays and partitioning to support a variety of calculation strategies  VC2M2N05 | Split, combined |
| Solve simple addition and subtraction problems using a range of efficient mental and written strategies (VCMNA107)  Recognise and represent multiplication as repeated addition, groups and arrays (VCMNA108)  Recognise and represent division as grouping into equal sets and solve simple problems using these representations (VCMNA109)  Count and order small collections of Australian coins and notes according to their value (VCMNA111) | use mathematical modelling to solve practical problems involving additive and multiplicative situations, including money transactions; represent situations and choose calculation strategies; interpret and communicate solutions in terms of the context  VC2M2N06 | Combined and split |

#### VC2 strand: Algebra

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Describe patterns with numbers and identify missing elements (VCMNA112)  Describe, continue, and create number patterns resulting from performing addition or subtraction (VCMNA138) | recognise, describe and create additive patterns that increase or decrease by a constant amount, using numbers, shapes and objects, and identify missing elements in the pattern  VC2M2A01 | Combined and realigned from Level 3 Number and Algebra |
|  | recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts  VC2M2A02 | Realigned from Level 3 Number and Algebra |
|  | recall and demonstrate proficiency with multiplication facts for twos; extend and apply facts to develop the related division facts using doubling and halving  VC2M2A03 | New content description |
| Apply repetition in arithmetic operations, including multiplication as repeated addition and division as repeated subtraction (VCMNA114) | apply repetition in arithmetic operations, including multiplication as repeated addition and division as repeated subtraction  VC2M2A04 | No change |

#### VC2 strand: Measurement

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units (VCMMG115)  Compare masses of objects using balance scales (VCMMG116) | measure and compare objects based on length, capacity and mass using appropriate uniform informal units and smaller units for accuracy when necessary  VC2M2M01 | Combined and refined |
| Recognise and interpret common uses of halves, quarters and eighths of shapes and collections (VCMNA110) | identify common uses and represent halves, quarters and eighths in relation to shapes, objects and events  VC2M2M02 | Refined and realigned from Level 2 Number and Algebra |
| Use a calendar to identify the date and determine the number of days in each month (VCMMG119) | identify the date and determine the number of days between events using calendars  VC2M2M03 | Refined for clarity |
| Tell time to the half-hour (VCMMG096)  Tell time to the quarter-hour, using the language of 'past' and 'to' (VCMMG117) | recognise and read the time represented on an analog clock to the hour, half-hour and quarter hour  VC2M2M04 | Combined and realigned from Level 1 Measurement and Geometry |
| Identify and describe half and quarter turns (VCMMG124) | identify, describe and demonstrate quarter, half, three-quarter and full measures of turn in everyday situations  VC2M2M05 | Refined for clarity |
| Name and order months and seasons (VCMMG118) |  | Removed to reduce duplication |

#### VC2 strand: Space

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Describe and draw two-dimensional shapes, with and without digital technologies (VCMMG120) | recognise, compare and classify shapes, referencing the number of sides and using spatial terms such as ‘opposite’, ‘parallel’, ‘curved’ and ‘straight’  VC2M2SP01 | Refined for clarity |
| Interpret simple maps of familiar locations and identify the relative positions of key features (VCMMG122) | locate positions in two-dimensional representations of a familiar space; move positions by following directions and pathways  VC2M2SP02 | Refined for clarity |
| Investigate the effect of one-step slides and flips with and without digital technologies (VCMMG123) |  | Removed to reduce duplication |

#### VC2 strand: Statistics

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Identify a question of interest based on one categorical variable. Gather data relevant to the question (VCMSP126)  Collect, check and classify data (VCMSP127) | acquire data for categorical variables through surveys, observation, experiment and using digital tools; sort data into relevant categories and display data using lists and tables  VC2M2ST01 | Combined and refined |
| Create displays of data using lists, table and picture graphs and interpret them (VCMSP128) | create different graphical representations of data using software where appropriate; compare the different representations, and identify and describe common and distinctive features in response to questions  VC2M2ST02 | Refined for clarity |

#### VC2 strand: Probability

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Identify practical activities and everyday events that involve chance. Describe outcomes as ‘likely’ or ‘unlikely’ and identify some events as ‘certain’ or ‘impossible’ (VCMSP125) |  | Realigned to Level 3 Probability |

## Level 3

### Achievement standard

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Number and Algebra  Students count and order numbers to and from 10 000. They recognise the connection between addition and subtraction, and solve problems using efficient strategies for multiplication with and without the use of digital technology. Students recall addition and multiplication facts for single-digit numbers. They represent money values in various ways and correctly count out change from financial transactions. Students model and represent unit fractions for halves, thirds, quarters, fifths and eighths, and multiples of these up to one. They classify numbers as either odd or even, continue number patterns involving addition or subtraction, and explore simple number sequences based on multiples.  Measurement and Geometry  Students use metric units for length, area, mass and capacity. They tell time to the nearest minute. Students identify symmetry in natural and constructed environments. They use angle size as a measure of turn in real situations and make models of three-dimensional objects. Students match positions on maps with given information and create simple maps.  Statistics and Probability  Students carry out simple data investigations for categorical variables. They interpret and compare data displays. Students conduct chance experiments, list possible outcomes and recognise variations in results. | By the end of Level 3, students order and represent natural numbers beyond 10 000, classify numbers as either odd or even, and use the properties of odd and even numbers. They partition, rearrange and regroup two- and three-digit numbers in different ways to assist in calculations. Students extend and use single-digit addition and related subtraction facts and apply additive strategies to model and solve problems involving two- and three-digit numbers. They use a range of strategies to apply mathematical modelling to solve practical problems involving single-digit multiplication and division, recalling multiplication facts for twos, threes, fours, fives and tens. Students represent unit fractions and their multiples in different ways. They make estimates and determine the reasonableness of financial and other calculations.  Students find unknown values in number sentences involving addition and subtraction. They create algorithms to investigate numbers and explore simple patterns.  Students use familiar metric units when estimating, comparing and measuring the attributes of objects and events. They identify angles as measures of turn and compare them to right angles. Students estimate and compare measures of duration using formal units of time. They represent money values in different ways.  Students make, compare and classify objects using key features. They interpret and create two-dimensional representations of familiar environments.  Students conduct guided statistical investigations involving categorical and discrete numerical data and interpret their results in terms of the context. They record, represent and compare data they have collected.  Students use practical activities, observation or experiment to identify and describe outcomes and the likelihood of everyday events explaining reasoning.  Students conduct repeated chance experiments and discuss variation in results. | Removed the 3 strand headings because no longer relevant. Achievement standards have been split, refined and realigned to the revised Victorian curriculum.  Note: Probability strand applies from Level 3 – Global proficiency framework and research-based change |

### Content descriptions

#### VC2 strand: Number

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Investigate the conditions required for a number to be odd or even and identify odd and even numbers (VCMNA129) | identify, explain and use the properties of odd and even numbers  VC2M3N01 | Command terms adjusted to provide clarity and improve teachability |
| Recognise, model, represent and order numbers to at least 10 000 (VCMNA130)  Recognise, represent and order numbers to at least tens of thousands (VCMNA152)  Recognise, represent and order numbers to at least hundreds of thousands (VCMNA186) | recognise, represent and order natural numbers using naming and writing conventions for numerals beyond 10 000  VC2M3N02 | Combined and realigned from Levels 4 and 5 Number and Algebra |
| Model and represent unit fractions including 1/2, 1/4, 1/3, 1/5 and their multiples to a complete whole (VCMNA136) | recognise and represent unit fractions including , , , and and their multiples in different ways; combine fractions with the same denominator to complete the whole  VC2M3N03 | Refined for clarity |
| Apply place value to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems (VCMNA131) | add and subtract two- and three-digit numbers using place value to partition, rearrange and regroup numbers to assist in calculations without a calculator  VC2M3N04 | Refined for clarity |
| Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies (VCMNA135) | multiply and divide one- and two-digit numbers, representing problems using number sentences, diagrams and arrays, and using a variety of calculation strategies  VC2M3N05 | Split and refined |
|  | estimate the quantity of objects in collections and make estimates when solving problems to determine the reasonableness of calculations  VC2M3N06 | New content description |
| Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents (VCMNA137) | recognise the relationships between dollars and cents and represent money values in different ways  VC2M3N07 | Refined for clarity |
| Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies (VCMNA135) | use mathematical modelling to solve practical problems involving additive and multiplicative situations, including financial contexts; formulate problems using number sentences and choose calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation  VC2M3N08 | Split and refined |
|  | follow and create algorithms involving a sequence of steps and decisions to investigate numbers; describe any emerging patterns  VC2M3N09 | New content description |
| Use a function machine and the inverse machine as a model to apply mathematical rules to numbers or shapes (VCMNA139) |  | Removed to reduce duplication |
| Identify and describe slides and turns found in the natural and built environment (VCMMG145) |  | Removed to reduce duplication |

#### VC2 strand: Algebra

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Explore the connection between addition and subtraction (VCMNA106)  Recognise and explain the connection between addition and subtraction (VCMNA132) | recognise and explain the connection between addition and subtraction as inverse operations, apply to partition numbers and find unknown values in number sentences  VC2M3A01 | Combined and realigned from Level 2 Number and Algebra |
| Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation (VCMNA133) | extend and apply knowledge of addition and subtraction facts to 20 to develop efficient mental strategies for computation with larger numbers without a calculator  VC2M3A02 | Refined for clarity |
| Recall multiplication facts of two, three, five and ten and related division facts (VCMNA134) | recall and demonstrate proficiency with multiplication facts for 3, 4, 5 and 10; extend and apply facts to develop the related division facts  VC2M3A03 | Refined for clarity |

#### VC2 strand: Measurement

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Measure, order and compare objects using familiar metric units of length, area, mass and capacity (VCMMG140) | identify which metric units are used to measure everyday items; use measurements of familiar items and known units to make estimates  VC2M3M01 | Split and refined |
| Measure, order and compare objects using familiar metric units of length, area, mass and capacity (VCMMG140) | measure and compare objects using familiar metric units of length, mass and capacity, and instruments with labelled markings  VC2M3M02 | Split and refined |
| Tell time to the minute and investigate the relationship between units of time (VCMMG141) | recognise and use the relationship between formal units of time, including days, hours, minutes and seconds, to estimate and compare the duration of events  VC2M3M03 | Split and refined |
| Tell time to the minute and investigate the relationship between units of time (VCMMG141) | describe the relationship between the hours and minutes on analog and digital clocks, and read the time to the nearest minute  VC2M3M04 | Split and refined |
| Identify angles as measures of turn and compare angle sizes in everyday situations (VCMMG146) | identify angles as measures of turn and use right angles as a reference to compare angles in everyday situations  VC2M3M05 | Refined for clarity |

#### VC2 strand: Space

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Make models of three-dimensional objects and describe key features (VCMMG142)  Describe the features of three-dimensional objects (VCMMG121) | make, compare and classify objects, identifying key features and explaining why these features make them suited to their uses  VC2M3SP01 | Combined and realigned from Level 2 Measurement and geometry |
| Create and interpret simple grid maps to show position and pathways (VCMMG143) | interpret and create two-dimensional representations of familiar environments, locating key landmarks and objects relative to each other  VC2M3SP02 | Refined and combined for clarity |
| Identify symmetry in the environment (VCMMG144) |  | Removed to reduce duplication |

#### VC2 strand: Statistics

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies (VCMSP149) | acquire data for categorical and discrete numerical variables to address a question of interest or purpose by observing, collecting and accessing data sets; record the data using appropriate methods, including frequency tables and spreadsheets  VC2M3ST01 | Refined for clarity |
| Interpret and compare data displays (VCMSP150) | create and compare different graphical representations of data sets, including using software where appropriate; interpret the data in terms of the context  VC2M3ST02 | Refined for clarity |
| Identify questions or issues for categorical variables. Identify data sources and plan methods of data collection and recording (VCMSP148) | conduct guided statistical investigations involving the collection, representation and interpretation of data for categorical and discrete numerical variables with respect to questions of interest  VC2M3ST03 | Refined for clarity |

#### VC2 strand: Probability

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Identify practical activities and everyday events that involve chance. Describe outcomes as ‘likely’ or ‘unlikely’ and identify some events as ‘certain’ or ‘impossible’ (VCMSP125) | identify practical activities and everyday events that involve chance, and describe possible outcomes and events as ‘likely’ or ‘unlikely’ and identify some events as ‘certain’ or ‘impossible’, explaining reasoning  VC2M3P01 | Refined and realigned from Levels 1 and 2 Probability and Statistics |
| Conduct chance experiments, identify and describe possible outcomes and recognise variation in results (VCMSP147) | conduct repeated chance experiments; identify and describe possible outcomes, record the results, and recognise and discuss the variation  VC2M3P02 | Refined for clarity |

## Level 4

### Achievement standard

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Number and Algebra  Students recall multiplication facts to 10 x 10 and related division facts. They choose appropriate strategies for calculations involving multiplication and division, with and without the use of digital technology, and estimate answers accurately enough for the context. Students solve simple purchasing problems with and without the use of digital technology. They locate familiar fractions on a number line, recognise common equivalent fractions in familiar contexts and make connections between fractions and decimal notations up to two decimal places. Students identify unknown quantities in number sentences. They use the properties of odd and even numbers and describe number patterns resulting from multiplication. Students continue number sequences involving multiples of single-digit numbers and unit fractions, and locate them on a number line.  Measurement and Geometry  Students compare areas of regular and irregular shapes, using informal units. They solve problems involving time duration. Students use scaled instruments to measure length, angle, area, mass, capacity and temperature of shapes and objects. They convert between units of time. Students create symmetrical simple and composite shapes and patterns, with and without the use of digital technology. They classify angles in relation to a right angle. Students interpret information contained in maps.  Statistics and Probability  Students describe different methods for data collection and representation, and evaluate their effectiveness. They construct data displays from given or collected data, with and without the use of digital technology. Students list the probabilities of everyday events. They identify dependent and independent events | By the end of Level 4, students use their understanding of place value to represent tenths and hundredths in decimal form and to multiply natural numbers by multiples of 10. Students use mathematical modelling to solve financial and other practical problems, formulating the problem using number sentences, solving the problem choosing efficient strategies and interpreting the results in terms of the situation. They use their proficiency with addition, subtraction, multiplication facts for tens (× 10) and related division facts to perform arithmetic operations to add and subtract, and multiply and divide numbers efficiently. They choose rounding and estimation strategies to determine whether results of calculations are reasonable. They recognise common equivalent fractions in familiar contexts and make connections between fraction and decimal notations. Students count and represent familiar fractions on a number line.  Students find unknown values in numerical equations involving addition and subtraction. They follow and create algorithms that generate sets of numbers and identify emerging patterns.  Students use appropriate scaled instruments and appropriate units to measure length, mass, capacity and temperature. They measure and approximate perimeters and areas for regular and irregular shapes. They convert between units of time when solving problems involving duration. Students compare angles relative to a right angle using angle names.  Students represent and approximate shapes and objects from their environment. Students create and interpret grid references. They identify line and rotational symmetry in plane shapes and create symmetrical patterns.  Students create many-to-one data displays, assess the suitability of displays for representing data and informally discuss the shape of distributions and variation in data. They use surveys and digital tools to generate categorical or discrete numerical data in statistical investigations and communicate their findings in context.  Students order events or the outcomes of chance experiments in terms of likelihood and identify whether events are independent or dependent. They conduct repeated chance experiments and describe the variation in results. | Removed the 3 strand headings because no longer relevant. Achievement standards have been split, refined and realigned to the revised Victorian curriculum. |

### Content descriptions

#### VC2 strand: Number

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Recognise that the place value system can be extended to tenths and hundredths. Make connections between fractions and decimal notation (VCMNA159) | recognise and extend the application of place value to tenths and hundredths and use the conventions of decimal notation to name and represent decimals  VC2M4N01 | Refined for clarity |
| Investigate and use the properties of odd and even numbers (VCMNA151) |  | Removed to reduce duplication |
| Investigate number sequences involving multiples of 3, 4, 6, 7, 8, and 9 (VCMNA154) | investigate number sequences involving multiples of 3, 4, 6, 7, 8 and 9  VC2M4N02 | No change |
| Investigate equivalent fractions used in contexts (VCMNA157) | find equivalent representations of fractions using related denominators and make connections between fractions and decimal notation  VC2M4N03 | Refined for clarity |
| Count by quarters, halves and thirds, including with mixed numerals. Locate and represent these fractions on a number line (VCMNA158) | count by multiples of quarters, halves and thirds, including mixed numerals; locate and represent these fractions as numbers on number lines  VC2M4N04 | Refined |
|  | solve problems involving multiplying or dividing natural numbers by multiples and powers of 10 without a calculator, using the multiplicative relationship between the place value of digits  VC2M4N05 | New content description |
| Apply place value to partition, rearrange and regroup numbers to at least tens of thousands to assist calculations and solve problems (VCMNA153)  Develop efficient mental and written strategies and use appropriate digital technologies for multiplication and for division where there is no remainder (VCMNA156) | develop efficient mental and written strategies and use appropriate digital tools for solving problems involving addition and subtraction, and multiplication and division where there is no remainder  VC2M4N06 | Combined and refined |
| Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies (VCMNA160) | choose and use estimation and rounding to check and explain the reasonableness of calculations, including the results of financial transactions  VC2M4N07 | Refined for clarity |
| Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies (VCMNA160) | solve problems involving purchases and the calculation of change to the nearest 5 cents with and without digital tools  VC2M4N08 | No change |
| Solve word problems by using number sentences involving multiplication or division where there is no remainder (VCMNA162) | use mathematical modelling to solve practical problems that involve additive and multiplicative situations, including financial contexts; formulate the problems using number sentences and choose efficient calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation  VC2M4N09 | Combined and refined |
| Describe, continue, and create number patterns resulting from performing addition or subtraction (VCMNA138)  Investigate number sequences involving multiples of 3, 4, 6, 7, 8, and 9 (VCMNA154)  Explore and describe number patterns resulting from performing multiplication (VCMNA161)  Define a simple class of problems and solve them using an effective algorithm that involves a short sequence of steps and decisions (VCMNA164) | follow and create algorithms involving a sequence of steps and decisions that use addition or multiplication to generate sets of numbers; identify and describe any emerging patterns  VC2M4N10 | Combined, refined and realigned from Level 3 Number and Algebra |

#### VC2 strand: Algebra

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Use equivalent number sentences involving addition and subtraction to find unknown quantities (VCMNA163) | find unknown values in numerical equations involving addition and subtraction, using the properties of numbers and operations  VC2M4A01 | Refined for clarity |
| Recall multiplication facts up to 10 × 10 and related division facts (VCMNA155)  Investigate number sequences involving multiples of 3, 4, 6, 7, 8, and 9 (VCMNA154) | recall and demonstrate proficiency with multiplication facts up to 10 × 10 and related division facts, and explain the patterns in these; extend and apply facts to develop efficient mental and written strategies for computation with larger numbers without a calculator  VC2M4A02 | Combined and split |

#### VC2 strand: Measurement

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Use scaled instruments to measure and compare lengths, masses, capacities and temperatures (VCMMG165) | use scaled and digital instruments to interpret unmarked and partial units to measure and compare lengths, masses, capacities, durations and temperatures, using appropriate units  VC2M4M01 | Refined for clarity |
| Compare the areas of regular and irregular shapes by informal means (VCMMG169) | recognise ways of measuring and approximating the perimeter and area of shapes and enclosed spaces, using appropriate formal and informal units  VC2M4M02 | Refined for clarity |
| Convert between units of time (VCMMG167)  Use am and pm notation and solve simple time problems (VCMMG168) | solve problems involving the duration of time including situations involving ‘am’ and ‘pm’ and conversions between units of time  VC2M4M03 | Combined and refined |
| Compare angles and classify them as equal to, greater than or less than a right angle (VCMMG174) | estimate and compare angles using angle names including acute, obtuse, straight angle, reflex and revolution, and recognise their relationship to a right angle  VC2M4M04 | Refined for clarity |

#### VC2 strand: Space

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Explain and compare the geometric properties of two-dimensional shapes and three-dimensional objects (VCMMG171) | explain and compare the geometric properties of two-dimensional shapes and three-dimensional objects  VC2M4SP01 | No change |
| Compare and describe two dimensional shapes that result from combining and splitting common shapes, with and without the use of digital technologies (VCMMG170) | represent and approximate composite shapes and objects in the environment, using combinations of familiar shapes and objects  VC2M4SP02 | Refined for clarity |
| Use simple scales, legends and directions to interpret information contained in basic maps (VCMMG172) | create and interpret grid reference systems using grid references and directions to locate and describe positions and pathways  VC2M4SP03 | Refined for clarity |
| Create symmetrical patterns, pictures and shapes with and without digital technologies (VCMMG173) | recognise line and rotational symmetry of shapes and create symmetrical patterns and pictures, using dynamic geometry software where appropriate  VC2M4SP04 | Refined for clarity |
| Compare objects using familiar metric units of area and volume (VCMMG166) |  | Removed to reduce duplication. |

#### VC2 strand: Statistics

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Construct suitable data displays, with and without the use of digital technologies, from given or collected data. Include tables, column graphs and picture graphs where one picture can represent many data values (VCMSP179) | acquire data for categorical and discrete numerical variables to address a question of interest or purpose using digital tools; represent data using many-to-one pictographs, column graphs and other displays or visualisations; interpret and discuss the information that has been created  VC2M4ST01 | Refined for clarity |
| Evaluate the effectiveness of different displays in illustrating data features including variability (VCMSP180) | analyse the effectiveness of different displays or visualisations in illustrating and comparing data distributions, then discuss the shape of distributions and the variation in the data  VC2M4ST02 | Refined for clarity |
| Select and trial methods for data collection, including survey questions and recording sheets (VCMSP178) | conduct statistical investigations, collecting data through survey responses and other methods; record and display data using digital tools; interpret the data and communicate the results  VC2M4ST03 | Refined for clarity |

#### VC2 strand: Probability

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Describe possible everyday events and order their chances of occurring (VCMSP175)  Identify everyday events where one cannot happen if the other happens (VCMSP176)  Identify events where the chance of one will not be affected by the occurrence of the other (VCMSP177) | describe possible everyday events and the possible outcomes of chance experiments and order outcomes or events based on their likelihood of occurring; identify independent or dependent events  VC2M4P01 | Combined and refined |
|  | conduct repeated chance experiments to observe relationships between outcomes in games and other chance situations, and identify and describe the variation in results  VC2M4P02 | New content description |

## Level 5

### Achievement standard

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Number and Algebra  Students solve simple problems involving the four operations using a range of strategies including digital technology. They estimate to check the reasonableness of answers and approximate answers by rounding. Students identify and describe factors and multiples. They explain plans for simple budgets. Students order decimals and unit fractions and locate them on a number line. Students add and subtract fractions with the same denominator. They find unknown quantities in number sentences and continue patterns by adding or subtracting fractions and decimals.  Measurement and Geometry  Students use appropriate units of measurement for length, area, volume, capacity and mass, and calculate perimeter and area of rectangles and volume, and capacity of rectangular prisms. They convert between 12 and 24-hour time. Students use a grid reference system to locate landmarks. They estimate angles, and use protractors and digital technology to construct and measure angles. Students connect three-dimensional objects with their two-dimensional representations. They describe transformations of two-dimensional shapes and identify line and rotational symmetry.  Statistics and Probability  Students pose questions to gather data and construct various displays appropriate for the data, with and without the use of digital technology. They compare and interpret different data sets. Students list outcomes of chance experiments with equally likely outcomes and assign probabilities as a number from 0 to 1. | By the end of Level 5, students use place value to write and order decimals including decimals greater than one. They express natural numbers as products of factors and identify multiples and divisors. Students order and represent, add and subtract fractions with the same or related denominators. They represent common percentages and connect them to their fraction and decimal equivalents. Students use their proficiency with multiplication facts and efficient mental and written calculation strategies to multiply large numbers by one- and two-digit numbers and divide by one-digit numbers. They check the reasonableness of their calculations using estimation. Students use mathematical modelling to solve financial and other practical problems, formulating and solving problems, choosing arithmetic operations and interpreting results in terms of the situation.  Students apply properties of numbers and operations to find unknown values in numerical equations involving multiplication and division. They design and use algorithms to identify and explain patterns in the factors and multiples of numbers.  Students choose and use appropriate metric units to measure the attributes of length, mass and capacity, and to solve problems involving perimeter and area. Students convert between 12- and 24-hour time. They estimate, construct and measure angles in degrees. Students use grid coordinates to locate and move positions.  Students connect objects to their two-dimensional nets. They perform and describe the results of transformations and identify any symmetries.  Students plan and conduct statistical investigations that collect nominal and ordinal categorical and discrete numerical data with and without digital tools. Students identify the mode and interpret the shape of distributions of data in context. They interpret and compare data represented in line graphs.  Students conduct repeated chance experiments, list the possible outcomes, estimate likelihoods and make comparisons between those with and without equally likely outcomes. | Removed the 3 strand headings because no longer relevant. Achievement standards have been split, refined and realigned to the revised Victorian curriculum. |

### Content descriptions

#### VC2 strand: Number

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Recognise that the place value system can be extended beyond hundredths (VCMNA189)  Compare, order and represent decimals (VCMNA190) | interpret, compare and order numbers with more than 2 decimal places, including numbers greater than one, using place value understanding; represent these on a number line  VC2M5N01 | Combined and refined |
| Identify and describe factors and multiples of whole numbers and use them to solve problems (VCMNA181) | express natural numbers as products of their factors, recognise multiples and determine if one number is divisible by another  VC2M5N02 | Refined for clarity |
| Compare and order common unit fractions and locate and represent them on a number line (VCMNA187) | compare and order common unit fractions with the same and related denominators, including mixed numerals, applying knowledge of factors and multiples; represent these fractions on a number line  VC2M5N03 | Refined |
| Make connections between equivalent fractions, decimals and percentages (VCMNA217) | recognise that 100% represents the complete whole and use percentages to describe, represent and compare relative size; connect familiar percentages to their decimal and fraction equivalents  VC2M5N04 | Split and realigned from Level 6 Number and Algebra |
| Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator (VCMNA188) | solve problems involving addition and subtraction of fractions with the same or related denominators, using different strategies  VC2M5N05 | Refined for clarity |
| Solve problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental, written strategies and appropriate digital technologies (VCMNA183)  Use efficient mental and written strategies and apply appropriate digital technologies to solve problems (VCMNA185) | solve problems involving multiplication of larger numbers by one- or two-digit numbers, choosing efficient mental and written calculation strategies and using digital tools where appropriate; check the reasonableness of answers  VC2M5N06 | Combined and split |
| Solve problems involving division by a one digit number, including those that result in a remainder (VCMNA184)  Use efficient mental and written strategies and apply appropriate digital technologies to solve problems (VCMNA185) | solve problems involving division, choosing efficient mental and written strategies and using digital tools where appropriate; interpret any remainder according to the context and express results as a whole number, decimal or fraction  VC2M5N07 | Combined and split |
| Use estimation and rounding to check the reasonableness of answers to calculations (VCMNA182) | check and explain the reasonableness of solutions to problems, including financial contexts using estimation strategies appropriate to the context  VC2M5N08 | Refined for clarity |
| Create simple financial plans (VCMNA191)  Use efficient mental and written strategies and apply appropriate digital technologies to solve problems (VCMNA185) | use mathematical modelling to solve practical problems involving additive and multiplicative situations, including simple financial planning contexts; formulate the problems, choosing operations and efficient mental and written calculation strategies, and using digital tools where appropriate; interpret and communicate solutions in terms of the situation  VC2M5N09 | Combined and split |
| Follow a mathematical algorithm involving branching and repetition (iteration) (VCMNA194) | follow a mathematical algorithm involving branching and repetition (iteration); create and use algorithms involving a sequence of steps and decisions and digital tools to experiment with factors, multiples and divisibility; identify, interpret and describe emerging patterns  VC2M5N10 | Content description and new content consolidated to facilitate connections in sequencing |
|  |

#### VC2 strand: Algebra

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
|  | recognise and explain the connection between multiplication and division as inverse operations and use this to develop families of number facts  VC2M5A01 | New content description |
| Use equivalent number sentences involving multiplication and division to find unknown quantities (VCMNA193) | find unknown values in numerical equations involving multiplication and division using the properties of numbers and operations  VC2M5A02 | Refined for clarity |
| Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction (VCMNA192) |  | Removed to reduce duplication |

#### VC2 strand: Measurement

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Choose appropriate units of measurement for length, area, volume, capacity and mass (VCMMG195) | choose appropriate metric units when measuring the length, mass and capacity of objects; use smaller units or a combination of units to obtain a more accurate measure  VC2M5M01 | Refined and realigned from Level 4 Measurement and Geometry |
| Calculate the perimeter and area of rectangles and the volume and capacity of prisms using familiar metric units (VCMMG196) | solve practical problems involving the perimeter and area of regular and irregular shapes using appropriate metric units  VC2M5M02 | Refined for clarity |
| Compare 12- and 24-hour time systems and convert between them (VCMMG197) | compare 12- and 24-hour time systems and solve practical problems involving the conversion between them  VC2M5M03 | Refined for clarity |
| Estimate, measure and compare angles using degrees. Construct angles using a protractor (VCMMG202) | estimate, construct and measure angles in degrees, using appropriate tools, including a protractor, and relate these measures to angle names  VC2M5M04 | Refined for clarity |

#### VC2 strand: Space

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Connect three-dimensional objects with their nets and other two-dimensional representations (VCMMG198) | connect objects to their nets and build objects from their nets using spatial and geometric reasoning  VC2M5SP01 | Refined for clarity |
| Use a grid reference system to describe locations. Describe routes using landmarks and directional language (VCMMG199) | construct a grid coordinate system that uses coordinates to locate positions within a space; use coordinates and directional language to describe position and movement  VC2M5SP02 | Refined for clarity |
| Describe translations, reflections and rotations of two-dimensional shapes. Identify line and rotational symmetries (VCMMG200) | describe and perform translations, reflections and rotations of shapes, using dynamic geometry software where appropriate; recognise what changes and what remains the same, and identify any symmetries  VC2M5SP03 | Refined for clarity |
| Apply the enlargement transformation to familiar two dimensional shapes and explore the properties of the resulting image compared with the original (VCMMG201) |  | Removed to reduce duplication |

#### VC2 strand: Statistics

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Construct displays, including column graphs, dot plots and tables, appropriate for data type, with and without the use of digital technologies (VCMSP206)  Describe and interpret different data sets in context (VCMSP207) | acquire, validate and represent data for nominal and ordinal categorical and discrete numerical variables to address a question of interest or purpose using software including spreadsheets; discuss and report on data distributions in terms of highest frequency (mode) and shape, in the context of the data  VC2M5ST01 | Combined and refined |
|  | interpret line graphs representing change over time; discuss the relationships that are represented and conclusions that can be made  VC2M5ST02 | New content description |
| Pose questions and collect categorical or numerical data by observation or survey (VCMSP205)  Describe and interpret different data sets in context (VCMSP207) | plan and conduct statistical investigations by posing questions or identifying a problem and collecting relevant data; choose appropriate displays and interpret the data; communicate findings within the context of the investigation  VC2M5ST03 | Split and refined |

#### VC2 strand: Probability

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| List outcomes of chance experiments involving equally likely outcomes and represent probabilities of those outcomes using fractions (VCMSP203) | list the possible outcomes of chance experiments involving equally likely outcomes and compare to those that are not equally likely  VC2M5P01 | Refined for clarity |
|  | conduct repeated chance experiments, including those with and without equally likely outcomes, and observe and record the results; use frequency to compare outcomes and estimate their likelihoods  VC2M5P02 | New content description |

## Level 6

### Achievement standard

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| 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. | By the end of Level 6, students use integers to represent points on a number line and on the Cartesian plane. They solve problems using the properties of prime, composite, square and triangular numbers. Students order common fractions, giving reasons, and add and subtract fractions with related denominators. They use all 4 operations with decimals and connect decimal representations of measurements to the metric system. Students solve problems involving finding a fraction, decimal or percentage of a quantity and use estimation to find approximate solutions to problems involving rational numbers and percentages. They use mathematical modelling to solve financial and other practical problems involving percentages and rational numbers, formulating and solving the problem, and justifying choices.  Students find unknown values in numerical equations involving combinations of arithmetic operations. They identify and explain rules used to create growing patterns. They design and use algorithms to generate sets of numbers, using a rule.  Students interpret and use timetables, and measure, calculate and compare elapsed time. They convert between common units of length, mass and capacity. They use the formula for the area of a rectangle and angle properties to solve problems.  Students identify the parallel cross-section for right prisms. They create tessellating patterns using combinations of transformations. They locate an ordered pair in any one of the 4 quadrants on the Cartesian plane.  Students compare distributions of discrete and continuous numerical and ordinal categorical data sets as part of their statistical investigations, using digital tools. They critique arguments presented in the media based on statistics.  Students assign probabilities using common fractions, decimals and percentages. They conduct simulations using digital tools, to generate and record the outcomes from many trials of a chance experiment. They compare observed frequencies to the expected frequencies of the outcomes of chance experiments. | Removed the 3 strand headings because no longer relevant. Achievement standards have been split, refined and realigned to the revised Victorian curriculum. |

### Content descriptions

#### VC2 strand: Number

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Investigate everyday situations that use integers. Locate and represent these numbers on a number line (VCMNA210) | recognise situations, including financial contexts, that use integers; locate and represent integers on a number line and as coordinates on the Cartesian plane  VC2M6N01 | Refined for clarity |
| Identify and describe properties of prime, composite, square and triangular numbers (VCMNA208) | identify and describe the properties of prime, composite, square and triangular numbers and use these properties to solve problems and simplify calculations  VC2M6N02 | Refined |
| Compare fractions with related denominators and locate and represent them on a number line (VCMNA211) | apply knowledge of equivalence to compare, order and represent common fractions, including halves, thirds and quarters, on the same number line and justify their order  VC2M6N03 | Refined for clarity |
| Add and subtract decimals, with and without digital technologies, and use estimation and rounding to check the reasonableness of answers (VCMNA214) | apply knowledge of place value to add and subtract decimals, using digital tools where appropriate; use estimation and rounding to check the reasonableness of answers  VC2M6N04 | Refined for clarity |
| Solve problems involving addition and subtraction of fractions with the same or related denominators (VCMNA212)  Make connections between equivalent fractions, decimals and percentages (VCMNA217) | solve problems involving addition and subtraction of fractions using knowledge of equivalent fractions  VC2M6N05 | Split and combined |
| 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) | multiply and divide decimals by multiples of powers of 10 without a calculator, applying knowledge of place value and proficiency with multiplication facts, using estimation and rounding to check the reasonableness of answers  VC2M6N06 | Combined and refined |
| Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies (VCMNA213) | solve problems that require finding a familiar fraction, decimal or percentage of a quantity, including percentage discounts, choosing efficient calculation strategies with and without digital tools  VC2M6N07 | Refined to improve clarity and to remove ambiguity around the key emphasis on computation both with and without digital tools |
| Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies (VCMNA218) |  | Content consolidated into VC2M6N07 to facilitate connections in sequencing and reduce duplication |
| Make connections between equivalent fractions, decimals and percentages (VCMNA217) | approximate numerical solutions to problems involving rational numbers and percentages, using appropriate estimation strategies  VC2M6N08 | Refined for clarity |
| 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)  Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies (VCMNA213)  Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies (VCMNA218) | use mathematical modelling to solve practical problems involving rational numbers and percentages, including in financial contexts; formulate the problems, choosing operations and using efficient mental and written calculation strategies, and using digital tools where appropriate; interpret and communicate solutions in terms of the situation, justifying the choices made  VC2M6N09 | Combined and refined |
| Connect volume and capacity and their units of measurement (VCMMG225) |  | Realigned to Level 8 Measurement. The concept involves a high cognitive load due to counterintuitive relationship between volume and capacity. On balance students at Level 6 will not be ready for the concept, whereas students at Level 8 will be. |

#### VC2 strand: Algebra

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Continue and create sequences involving whole numbers, fractions and decimals. Describe the rule used to create the sequence (VCMNA219) | recognise and use rules that generate visually growing patterns and number patterns involving rational numbers  VC2M6A01 | Refined for clarity |
| Explore the use of brackets and order of operations to write number sentences (VCMNA220)  Apply the associative, commutative and distributive laws to aid mental and written computation and make estimates for these computations (VCMNA240) | find unknown values in numerical equations involving brackets and combinations of arithmetic operations, using the properties of numbers and operations  VC2M6A02 | Combined, refined and realigned from Level 7 Number and Algebra |
| Design algorithms involving branching and iteration to solve specific classes of mathematical problems (VCMNA221) | design and use algorithms involving a sequence of steps and decisions that use rules to generate sets of numbers; identify, interpret and explain emerging patterns  VC2M6A03 | Refined content description |

#### VC2 strand: Measurement

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Connect decimal representations to the metric system (VCMMG222)  Convert between common metric units of length, mass and capacity (VCMMG223) | convert between common metric units of length, mass and capacity; choose and use decimal representations of metric measurements relevant to the context of a problem  VC2M6M01 | Combined and refined |
| Solve problems involving the comparison of lengths and areas using appropriate units (VCMMG224) | establish the formula for the area of a rectangle and use it to solve practical problems  VC2M6M02 | Refined for clarity |
| Interpret and use timetables (VCMMG226)  Measure, calculate and compare elapsed time (VCMMG227) | measure, calculate and compare elapsed time; interpret and use timetables and itineraries to plan activities and determine the duration of events and journeys  VC2M6M03 | Refined |
| 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) | identify the relationships between angles on a straight line, angles at a point and vertically opposite angles; use these to determine unknown angles, communicating reasoning  VC2M6M04 | Refined for clarity |

#### VC2 strand: Space

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Construct simple prisms and pyramids (VCMMG228) | compare the parallel cross-sections of objects and recognise their relationships to right prisms  VC2M6SP01 | Refined for clarity |
| Introduce the Cartesian coordinate system using all four quadrants (VCMMG230)  Given coordinates, plot points on the Cartesian plane, and find coordinates for a given point (VCMNA255) | locate points in the 4 quadrants of the Cartesian plane; describe changes to the coordinates when a point is moved to a different position in the plane  VC2M6SP02 | Combined and realigned from Level 7 Number and Algebra |
| Investigate the effect of combinations of transformations on simple and composite shapes, including creating tessellations, with and without the use of digital technologies (VCMMG229) | recognise and use combinations of transformations to create tessellations and other geometric patterns, using dynamic geometry software where appropriate  VC2M6SP03 | Refined for clarity |

#### VC2 strand: Statistics

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Construct, interpret and compare a range of data displays, including side-by-side column graphs for two categorical variables (VCMSP235) | interpret and compare data sets for ordinal and nominal categorical, discrete and continuous numerical variables using comparative displays or visualisations and digital tools; compare distributions in terms of mode, range and shape  VC2M6ST01 | Refined for clarity |
| Interpret secondary data presented in digital media and elsewhere (VCMSP236) | identify statistically informed arguments presented in traditional and digital media; discuss and critique methods, data representations and conclusions  VC2M6ST02 | Refined for clarity |
| Pose and refine questions to collect categorical or numerical data by observation or survey (VCMSP237) | plan and conduct statistical investigations by posing and refining questions to collect categorical or numerical data by observation or survey, or identifying a problem and collecting relevant data; analyse and interpret the data and communicate findings within the context of the investigation  VC2M6ST03 | Combined and refined |

#### VC2 strand: Probability

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Recognise that probabilities range from 0 to 1 (VCMSP204)  Describe probabilities using fractions, decimals and percentages (VCMSP232) | describe probabilities using fractions, decimals and percentages; recognise that probabilities lie on numerical scales of 0–‍1 or 0%–100%; use estimation to assign probabilities that events occur in a given context, using common fractions, percentages and decimals  VC2M6P01 | Combined and realigned from Level 5 Statistics and Probability |
| Conduct chance experiments with both small and large numbers of trials using appropriate digital technologies (VCMSP233)  Compare observed frequencies across experiments with expected frequencies (VCMSP234) | conduct repeated chance experiments and run simulations with an increasing number of trials using digital tools; compare observations with expected results and discuss the effect on variation of increasing the number of trials  VC2M6P02 | Combined and refined |

## Level 7

### Achievement standard

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Number and Algebra  Students solve problems involving the order, addition and subtraction of integers. They make the connections between whole numbers and index notation and the relationship between perfect squares and square roots. They solve problems involving all four operations with fractions, decimals, percentages and their equivalences, and express fractions in their simplest form. Students compare the cost of items to make financial decisions, with and without the use of digital technology. They make simple estimates to judge the reasonableness of results. Students use variables to represent arbitrary numbers and connect the laws and properties of number to algebra and substitute numbers into algebraic expressions. They assign ordered pairs to given points on the Cartesian plane and interpret and analyse graphs of relations from real data. Students develop simple linear models for situations, make predictions based on these models, solve related equations and check their solutions.  Measurement and Geometry  Students use formulas for the area and perimeter of rectangles. They classify triangles and quadrilaterals and represent transformations of these shapes on the Cartesian plane, with and without the use of digital technology. Students name the types of angles formed by transversals crossing parallel lines and solve simple numerical problems involving these lines and angles. They describe different views of three-dimensional objects, and use models, sketches and digital technology to represent these views. Students calculate volumes of rectangular prisms.  Statistics and Probability  Students identify issues involving the collection of discrete and continuous data from primary and secondary sources. They construct stem-and-leaf plots and dot-plots. Students identify or calculate mean, mode, median and range for data sets, using digital technology for larger data sets. They describe the relationship between the median and mean in data displays. Students determine the sample space for simple experiments with equally likely outcomes, and assign probabilities outcomes. | By the end of Level 7, students represent natural numbers in expanded form and as products of prime factors, using exponent notation. They solve problems involving squares of numbers and square roots of perfect square numbers. Students solve problems involving addition and subtraction of integers. They use all 4 operations in calculations involving positive fractions and decimals, choosing efficient mental and written calculation strategies. Students choose between equivalent representations of rational numbers and percentages to assist in calculations and make simple estimates to judge the reasonableness of results. They use mathematical modelling to solve practical problems involving rational numbers, percentages and ratios in spatial, financial and other applied contexts, justifying choices of representation.  Students use algebraic expressions to represent situations, describe the relationships between variables from authentic data and substitute values into formulas to determine unknown values. They solve linear equations with natural number solutions and verify their solutions through substitution. Students create tables of values relating to algebraic expressions and formulas, and describe how the values change.  Students apply knowledge of angle relationships and the sum of angles in a triangle to solve problems, giving reasons. They establish and use formulas for the areas of triangles and parallelograms and the volumes of rectangular and triangular prisms to solve problems. They describe the relationships between the radius, diameter and circumference of a circle.  Students classify polygons according to their features and design an algorithm to sort and classify shapes. They represent objects two-dimensionally in different ways, describing the usefulness of these representations. They use coordinates to describe transformations of points in the plane.  Students plan and conduct statistical investigations involving discrete and continuous numerical data, using appropriate displays. They interpret data in terms of the shape of distribution and summary statistics, identifying possible outliers. They decide which measure of central tendency is most suitable and explain their reasoning.  Students list sample spaces for single-step experiments, assign probabilities to outcomes of events and predict relative frequencies for related events. They conduct repeated single-step chance experiments and run simulations using digital tools, giving reasons for differences between predicted and observed results. | Removed the 3 strand headings because no longer relevant. Achievement standards have been split, refined and realigned to the revised Victorian curriculum. |

### Content descriptions

#### VC2 strand: Number

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Investigate and use square roots of perfect square numbers (VCMNA239) | describe the relationship between perfect square numbers and square roots, and use squares of numbers and square roots of perfect square numbers to solve problems  VC2M7N01 | Refined for clarity |
| Investigate index notation and represent whole numbers as products of powers of prime numbers (VCMNA238) | represent natural numbers in expanded notation using powers of 10, and as products of powers of prime numbers using exponent notation  VC2M7N02 | Content description consolidated with new content to facilitate connections in sequencing |
|  |
| Compare fractions using equivalence. Locate and represent positive and negative fractions and mixed numbers on a number line (VCMNA242)  Connect fractions, decimals and percentages and carry out simple conversions (VCMNA247) | find equivalent representations of rational numbers and represent positive and negative rational numbers and mixed numbers on a number line  VC2M7N03 | Combined and refined |
| Round decimals to a specified number of decimal places (VCMNA246) | round decimals to a given accuracy appropriate to the context and use appropriate rounding and estimation to check the reasonableness of computations  VC2M7N04 | Refined for clarity |
| Solve problems involving addition and subtraction of fractions, including those with unrelated denominators (VCMNA243)  Multiply and divide fractions and decimals using efficient written strategies and digital technologies (VCMNA244)  Find percentages of quantities and express one quantity as a percentage of another, with and without digital technologies. (VCMNA248) | multiply and divide fractions and decimals using efficient mental and written strategies, and digital tools  VC2M7N05 | No change |
| use the 4 operations with positive rational numbers, including fractions and decimals, to solve problems using efficient mental and written calculation strategies  VC2M7N06 | Combined and refined |
| find percentages of quantities and express one quantity as a percentage of another, with and without digital tools  VC2M7N07 | No change |
| Compare, order, add and subtract integers (VCMNA241) | compare, order and solve problems involving addition and subtraction of integers  VC2M7N08 | Refined for clarity |
| Express one quantity as a fraction of another, with and without the use of digital technologies (VCMNA245)  Recognise and solve problems involving simple ratios (VCMNA249) | recognise, represent and solve problems involving ratios  VC2M7N09 | Combined and refined |
| Solve problems involving addition and subtraction of fractions, including those with unrelated denominators (VCMNA243)  Find percentages of quantities and express one quantity as a percentage of another, with and without digital technologies. (VCMNA248)  Investigate and calculate 'best buys', with and without digital technologies (VCMNA250) | use mathematical modelling to solve practical problems involving rational numbers and percentages, including financial contexts such as ‘best buys’; formulate problems, choosing representations and efficient calculation strategies, designing algorithms and using digital tools as appropriate; interpret and communicate solutions in terms of the situation, justifying choices made about the representation  VC2M7N10 | Combined and split |
| Design and implement mathematical algorithms using a simple general purpose programming language (VCMNA254) |  | Removed to reduce duplication. |

#### VC2 strand: Algebra

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Introduce the concept of variables as a way of representing numbers using letters (VCMNA251) | recognise and use variables to represent everyday formulas algebraically and substitute values into formulas to determine an unknown  VC2M7A01 | Combined and refined |
| Apply the associative, commutative and distributive laws to aid mental and written computation and make estimates for these computations (VCMNA240)  Create algebraic expressions and evaluate them by substituting a given value for each variable (VCMNA252)  Extend and apply the laws and properties of arithmetic to algebraic terms and expressions (VCMNA253) | apply the associative, commutative and distributive laws to aid mental and written computation, and formulate algebraic expressions using constants, variables, operations and brackets  VC2M7A02 | Content descriptions consolidated to facilitate connections in sequencing |
| Solve simple linear equations (VCMNA256) | solve one-variable linear equations of increasing complexity with natural number solutions; verify equation solutions by substitution  VC2M7A03 | Refined |
| Investigate, interpret and analyse graphs from real life data, including consideration of domain and range (VCMNA257) | investigate, interpret and describe relationships between variables represented in graphs of functions developed from authentic data  VC2M7A04 | Refined |
| Create algebraic expressions and evaluate them by substituting a given value for each variable (VCMNA252)  Extend and apply the laws and properties of arithmetic to algebraic terms and expressions (VCMNA253)  Given coordinates, plot points on the Cartesian plane, and find coordinates for a given point (VCMNA255) | generate tables of values from visually changing patterns or the rule of a function; describe and plot these relationships on the Cartesian plane  VC2M7A05 | Combined and split |
|  | manipulate formulas involving several variables using digital tools, and describe the effect of systematic variation in the values of the variables  VC2M7A06 | New content description |

#### VC2 strand: Measurement

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Establish the formulas for areas of rectangles, triangles and parallelograms and use these in problem solving (VCMMG258) | establish the formulas for areas of rectangles, triangles and parallelograms and use these in problem-solving  VC2M7M01 | Refined |
| Calculate volumes of rectangular prisms (VCMMG259)  Develop the formulas for volumes of rectangular and triangular prisms and prisms in general. Use formulas to solve problems involving volume (VCMMG289) | solve problems involving the volume of right prisms including rectangular and triangular prisms, using established formulas and appropriate units  VC2M7M02 | Combined and realigned from Level 8 Measurement and Geometry |
| 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) | describe the relationship between and the circumference, radius and diameter of a circle  VC2M7M03 | Split and realigned from Level 8 Measurement and Geometry |
| Identify corresponding, alternate and co-interior angles when two straight lines are crossed by a transversal (VCMMG264)  Investigate conditions for two lines to be parallel and solve simple numerical problems using reasoning (VCMMG265) | identify corresponding, alternate and co-interior relationships between angles formed when parallel lines are crossed by a transversal; use them to solve problems and explain reasons  VC2M7M04 | Combined and refined |
| Demonstrate that the angle sum of a triangle is 180° and use this to find the angle sum of a quadrilateral (VCMMG263) | demonstrate that the interior angle sum of a triangle in the plane is 180° and apply this to determine the interior angle sum of other shapes and the size of unknown angles  VC2M7M05 | Refined for clarity |
| Recognise and solve problems involving simple ratios (VCMNA249) | use mathematical modelling to solve practical problems involving ratios of lengths, areas and volumes; formulate problems, interpret and communicate solutions in terms of the situation, justifying choices made about the representation  VC2M7M06 | Split and refined |

#### VC2 strand: Space

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Draw different views of prisms and solids formed from combinations of prisms (VCMMG260) | represent three-dimensional objects in 2 dimensions; discuss and reason about the advantages and disadvantages of different representations  VC2M7SP01 | Refined |
| Classify triangles according to their side and angle properties and describe quadrilaterals (VCMMG262) | classify triangles, quadrilaterals and other polygons according to their side and angle properties; identify and reason about relationships  VC2M7SP02 | Refined for clarity |
| Describe translations, reflections in an axis, and rotations of multiples of 90° on the Cartesian plane using coordinates. Identify line and rotational symmetries (VCMMG261) | describe the effect of transformations of a set of points using coordinates in the Cartesian plane, including translations, reflections in an axis, and rotations about the origin  VC2M7SP03 | Refined |
|  | design algorithms involving a sequence of steps and decisions that will sort and classify sets of shapes according to their attributes, and describe how the algorithms work  VC2M7SP04 | New content description |

#### VC2 strand: Statistics

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Calculate mean, median, mode and range for sets of data. Interpret these statistics in the context of data (VCMSP270)  Describe and interpret data displays using median, mean and range (VCMSP271) | acquire data sets for discrete and continuous numerical variables and calculate the range, median, mean and mode; make and justify decisions about which measures of central tendency provide useful insights into the nature of the distribution of data  VC2M7ST01 | Combined and refined |
| Construct and compare a range of data displays including stem-and-leaf plots and dot plots (VCMSP269)  Describe and interpret data displays using median, mean and range (VCMSP271)  Calculate mean, median, mode and range for sets of data. Interpret these statistics in the context of data (VCMSP270)  Investigate the effect of individual data values including outliers, on the range, mean and median (VCMSP300) | create different types of displays of numerical data, including dot plots and stem-and-leaf plots, using software where appropriate; describe and compare the distribution of data, commenting on the shape, centre and spread including outliers and determining the range, median, mean and mode  VC2M7ST02 | Combined, refined and realigned from Level 8 Number and Algebra |
| Identify and investigate issues involving numerical data collected from primary and secondary sources (VCMSP268) | plan and conduct statistical investigations for issues involving discrete and continuous numerical data, and data collected from primary and secondary sources; analyse and interpret distributions of data and report findings in terms of shape and summary statistics  VC2M7ST03 | Content description consolidated with new content into VC2M7ST03 to facilitate connections in sequencing |
|  |

#### VC2 strand: Probability

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Construct sample spaces for single-step experiments with equally likely outcomes (VCMSP266)  Assign probabilities to the outcomes of events and determine probabilities for events (VCMSP267) | identify the sample space for single-stage experiments; assign probabilities to the possible outcomes and predict relative frequencies for related experiments.  VC2M7P01 | Combined and refined |
|  | conduct repeated chance experiments and run simulations with a large number of trials using digital tools; compare predicted with observed results, explaining the differences and the effect of sample size on the outcomes  VC2M7P02 | New content description |

## Level 8

### Achievement standard

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Number and Algebra  Students use efficient mental and written strategies to make estimates and carry out the four operations with integers, and apply the index laws to whole numbers. They identify and describe rational and irrational numbers in context. Students estimate answers and solve everyday problems involving profit and loss rates, ratios and percentages, with and without the use of digital technology. They simplify a variety of algebraic expressions and connect expansion and factorisation of linear expressions. Students solve linear equations and graph linear relationships on the Cartesian plane.  Measurement and Geometry  Students convert between units of measurement for area and for volume. They find the perimeter and area of parallelograms, rhombuses and kites. Students name the features of circles, calculate circumference and area, and solve problems relating to the volume of prisms. They make sense of time duration in real applications, including the use of 24-hour time. Students identify conditions for the congruence of triangles and deduce the properties of quadrilaterals. They use tools, including digital technology, to construct congruent shapes.  Statistics and Probability  Students explain issues related to the collection of sample data and discuss the effect of outliers on means and medians of the data. They use various approaches, including the use of the digital technology, to generate simple random samples from a population. Students model situations with Venn diagrams and two-way tables and explain the use of ‘not’, ‘and’ and ‘or’. Students choose appropriate language to describe events and experiments. They determine complementary events and calculate the sum of probabilities. | By the end of Level 8, students recognise irrational numbers as numbers that cannot develop from the division of integer values by natural numbers and terminating or recurring decimals. They apply the exponent laws to calculations with numbers involving positive integer exponents. Students solve problems involving the 4 operations with integers and positive rational numbers. They use mathematical modelling to solve practical problems involving ratios, percentages and rates in measurement and financial contexts.  Students apply algebraic properties to simplify, rearrange, expand and factorise linear expressions. They graph linear relations and solve linear equations with rational solutions and one-variable inequalities, graphically and algebraically. Students plot linear and non-linear relations on the Cartesian plane, with and without the use of digital tools. Students use mathematical modelling to solve problems using linear relations, interpreting and reviewing the model in context. They make and test conjectures involving linear relations by developing algorithms and using digital tools.  Students use appropriate metric units when solving measurement problems involving the perimeter and area of composite shapes, and volume of right prisms. They use Pythagoras’ theorem to solve measurement problems involving unknown lengths of right-angled triangles. Students use formulas to solve problems involving the area and circumference of circles. They solve problems of duration involving 12- and 24-hour cycles across multiple time zones.  Students use 3 dimensions to locate and describe position. They identify conditions for congruency and similarity in triangles and other common shapes, and design and test algorithms to test for congruency and similarity. Students apply the properties of quadrilaterals to solve problems.  Students conduct statistical investigations and explain the implications of obtaining data through sampling. Students analyse and describe the distribution of data. They compare the variation in distributions of random samples of the same and different size from a given population with respect to shape, measures of central tendency and range.  Students represent the possible combinations of 2 events with tables and diagrams, and determine related probabilities to solve practical problems. They conduct experiments or simulations using digital tools to determine related probabilities of compound events. | Removed the 3 strand headings because no longer relevant. Achievement standards have been split, refined and realigned to the revised Victorian curriculum. |

### Content descriptions

#### VC2 strand: Number

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Investigate the concept of irrational numbers, including π (VCMNA275) | recognise irrational numbers in applied contexts, including and numbers that develop from the square root of positive real numbers that are not perfect squares, and recognise that irrational numbers cannot develop from the division of integer values by natural numbers  VC2M8N01 | Refined |
| Use index notation with numbers to establish the index laws with positive integral indices and the zero index (VCMNA272) | establish and apply the exponent laws with positive integer exponents and the zero exponent, using exponent notation with numbers  VC2M8N02 | Refined for clarity |
| Investigate terminating and recurring decimals (VCMNA274) | convert between fractions and terminating or recurring decimals, using digital tools as appropriate  VC2M8N03 | Refined |
| 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) | use the 4 operations with integers and with rational numbers, choosing and using efficient mental and written strategies, and digital tools where appropriate, and making estimates for these computations  VC2M8N04 | Refined |
| Solve problems involving the use of percentages, including percentage increases and decreases and percentage error, with and without digital technologies (VCMNA276) | solve problems involving the use of percentages, including percentage increases and decreases and percentage error, with and without digital tools  VC2M8N05 | No change |
| 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) |  | Removed and content consolidated into VC2M8M07 to facilitate connections in sequencing |
| 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)  Solve problems involving simple interest (VCMNA304) | use mathematical modelling to solve practical problems involving rational numbers and percentages, including financial contexts involving profit and loss; formulate problems, choosing efficient mental and written calculation strategies and using digital tools where appropriate; interpret and communicate solutions in terms of the context, reviewing the appropriateness of the model  VC2M8N06 | Combined, refined and realigned from Level 9 Number and Algebra |

#### VC2 strand: Algebra

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| 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) | create, expand, factorise, rearrange and simplify linear expressions, applying the associative, commutative, identity, distributive and inverse properties  VC2M8A01 | Combined and refined |
| Plot linear relationships on the Cartesian plane with and without the use of digital technologies (VCMNA283)  Solve linear equations using algebraic and graphical techniques. Verify solutions by substitution (VCMNA284)  Sketch linear graphs using the coordinates of two points and solve linear equations (VCMNA310)  Solve problems involving linear equations, including those derived from formulas (VCMNA335) | graph linear relations on the Cartesian plane using digital tools where appropriate; solve linear equations and one-variable inequalities using graphical and algebraic techniques; verify solutions by substitution  VC2M8A02 | Split, combined and realigned from Level 9 and Level 10 Number and Algebra |
| Plot graphs of non-linear real life data with and without the use of digital technologies, and interpret and analyse these graphs (VCMNA285) | – | Removed. Content outside the scope of the strand for this level |
|  | use mathematical modelling to solve applied problems involving linear relations, including financial contexts involving profit and loss; formulate problems with linear functions, and choose a representation; interpret and communicate solutions in terms of the context, and review the appropriateness of the model  VC2M8A03 | New content description |
| Use algorithms and related testing procedures to identify and correct errors (VCMNA282) | use algorithms and related testing procedures to identify and correct errors  VC2M8A04 | No change |
|  | experiment with linear functions and relations using digital tools, making and testing conjectures and generalising emerging patterns  VC2M8A05 | New content description |

#### VC2 strand: Measurement

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Find perimeters and areas of parallelograms, trapeziums, rhombuses and kites (VCMMG287)  Choose appropriate units of measurement for area and volume and convert from one unit to another (VCMMG286)  Calculate the areas of composite shapes (VCMMG312) | solve problems involving the area and perimeter of irregular and composite shapes using appropriate units  VC2M8M01 | Split, combined and realigned from Level 9 Measurement and Geometry |
| Develop the formulas for volumes of rectangular and triangular prisms and prisms in general. Use formulas to solve problems involving volume (VCMMG289)  Connect volume and capacity and their units of measurement (VCMMG225)  Choose appropriate units of measurement for area and volume and convert from one unit to another (VCMMG286) | solve problems involving the volume and capacity of right prisms using appropriate units  VC2M8M02 | Split, combined and realigned from Level 6 Measurement and Geometry |
| 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) | solve problems involving the circumference and area of a circle using formulas and appropriate units  VC2M8M03 | Split and refined |
| Solve problems involving duration, including using 12- and 24-hour time within a single time zone (VCMMG290) | solve problems involving time and duration, including using 12- and 24-hour time across multiple time zones  VC2M8M04 | Refined |
| 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) | recognise and use rates to solve problems involving the comparison of 2 related quantities of different units of measure  VC2M8M05 | Split and refined |
| Investigate Pythagoras’ Theorem and its application to solving simple problems involving right angled triangles (VCMMG318) | use Pythagoras’ theorem to solve problems involving the side lengths of right-angled triangles  VC2M8M06 | Split and realigned from Level 9 Measurement and Geometry |
| 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) | use mathematical modelling to solve practical problems involving ratios and rates, including distance-time problems for travel at a constant speed and financial contexts; formulate problems; interpret and communicate solutions in terms of the situation, reviewing the appropriateness of the model  VC2M8M07 | Content description and new content consolidated to facilitate connections in sequencing |

#### VC2 strand: Space

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| 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) | identify the conditions for congruence and similarity of triangles and explain the conditions for other sets of common shapes to be congruent or similar, including those formed by transformations  VC2M8SP01 | Combined and refined |
| Establish properties of quadrilaterals using congruent triangles and angle properties, and solve related numerical problems using reasoning (VCMMG293) | establish properties of quadrilaterals using congruent triangles and angle properties, and solve related problems explaining reasoning  VC2M8SP02 | Refined for clarity |
|  | describe in different ways the position and location of three-dimensional objects in 3 dimensions, including using a three-dimensional Cartesian coordinate system with the use of dynamic geometry software or other digital tools  VC2M8SP03 | New content description |
|  | design and test algorithms involving a sequence of steps and decisions that identify congruency or similarity of shapes, and describe how the algorithm works  VC2M8SP04 | New content description |

#### VC2 strand: Statistics

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| 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) | distinguish between a population and a sample, and investigate techniques for data collection including census, sampling, experiment and observation, and explain the practicalities and implications of obtaining data through these techniques  VC2M8ST01 | Split and combined |
| Explore the practicalities and implications of obtaining data through sampling using a variety of investigative processes (VCMSP298) | analyse and report on the distribution of data from primary and secondary sources using random and non-random sampling techniques  VC2M8ST02 | Refined |
| Explore the variation of means and proportions of random samples drawn from the same population (VCMSP299) | compare variations in distributions and proportions obtained from random samples of the same size drawn from a population and recognise the effect of sample size on this variation  VC2M8ST03 | Refined for clarity |
|  | plan and conduct statistical investigations involving samples of a population; use ethical and fair methods to make inferences about the population and report findings, acknowledging uncertainty  VC2M8ST04 | New content description |

#### VC2 strand: Probability

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Identify complementary events and use the sum of probabilities to solve problems (VCMSP294) | recognise that complementary events have a combined probability of one; use this relationship to calculate probabilities in applied contexts  VC2M8P01 | Refined for clarity |
| 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) | determine all possible outcome combinations for 2 events, using two-way tables, tree diagrams and Venn diagrams, and use these to determine probabilities of specific events in practical situations  VC2M8P02 | Combined and refined |
|  | conduct repeated chance experiments and simulations, using digital tools to determine probabilities for compound events, and describe results  VC2M8P03 | New content description |

## Level 9

### Achievement standard

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Number and Algebra  Students apply the index laws using integer indices to variables and numbers, express numbers in scientific notation, solve problems involving very small and very large numbers, and check the order of magnitude of calculations. They solve problems involving simple interest. Students use the distributive law to expand algebraic expressions, including binomial expressions, and simplify a range of algebraic expressions. They find the distance between two points on the Cartesian plane and the gradient and midpoint of a line segment using a range of strategies including the use of digital technology. Students sketch and draw linear and non-linear relations, solve simple related equations and explain the relationship between the graphical and symbolic forms, with and without the use of digital technology.  Measurement and Geometry  Students solve measurement problems involving perimeter and area of composite shapes, surface area and volume of rectangular prisms and cylinders, with and without the use of digital technology. They relate three-dimensional objects to two-dimensional representations. Students explain similarity of triangles, interpret ratios and scale factors in similar figures, and apply Pythagoras’s theorem and trigonometry to solve problems involving angles and lengths in right-angled triangles.  Statistics and Probability  Students compare techniques for collecting data from primary and secondary sources, and identify questions and issues involving different data types. They construct histograms and back-to-back stem-and-leaf plots with and without the use of digital technology. Students identify mean and median in skewed, symmetric and bi-modal displays and use these to describe and interpret the distribution of the data. They calculate relative frequencies to estimate probabilities. Students list outcomes for two-step experiments and assign probabilities for those outcomes and related events. | By the end of Level 9, students recognise and use rational and irrational numbers to solve problems.  Students extend and apply the exponent laws with positive integers and the zero exponent to variables. They expand binomial products and factorise monic quadratic expressions. They find the distance between 2 points on the Cartesian plane, sketch linear graphs and find the gradient and midpoint of a line segment. Students use mathematical modelling to solve problems involving change, including simple interest in financial contexts and change in other applied contexts, choosing to use linear and quadratic functions. They graph quadratic functions and use null factor law to solve monic quadratic equations with integer roots algebraically. Students investigate and describe the effects of variation of parameters on functions and relations, using digital tools where appropriate, and make connections between their graphical and algebraic representations.  Students apply formulas to solve problems involving the surface area and volume of right prisms, cylinders and composite shapes. They solve problems involving ratio, similarity and scale in two-dimensional situations. They determine percentage errors in measurements. Students apply Pythagoras’ theorem and use trigonometric ratios to solve problems involving right-angled triangles. They use mathematical modelling to solve practical problems involving direct and indirect proportion, ratio and scale, evaluating the model and communicating their methods and findings. Students express small and large numbers in scientific notation.  Students apply the enlargement transformation to images of shapes and objects, and interpret results. They design, use and test algorithms based on geometric constructions or theorems.  Students compare and analyse the distributions of multiple numerical data sets, choose representations, describe features of these data sets using summary statistics and the shape of distributions, and consider the effect of outliers. They explain how sampling techniques and representation can be used to support or question conclusions or to promote a point of view.  Students determine sets of outcomes for two-step chance experiments and represent these in various ways. They assign probabilities to the outcomes of two-step chance experiments. They design and conduct experiments or simulations for combined events using digital tools. | Removed the 3 strand headings because no longer relevant. Achievement standards have been split, refined and realigned to the revised Victorian curriculum. |

### Content descriptions

#### VC2 strand: Number

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
|  | recognise that the real number system includes the rational numbers and the irrational numbers, and solve problems involving real numbers with and without using digital tools  VC2M9N01 | New content description |
| Apply set structures to solve real-world problems (VCMNA307) |  | Removed to reduce duplication |

#### VC2 strand: Algebra

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Apply index laws to numerical expressions with integer indices (VCMNA302)  Extend and apply the index laws to variables, using positive integer indices and the zero index (VCMNA305) | apply the exponent laws to numerical expressions with integer exponents and the zero exponent, and extend to variables  VC2M9A01 | Combined and refined |
| Apply the distributive law to the expansion of algebraic expressions, including binomials, and collect like terms where appropriate (VCMNA306)  Expand binomial products and factorise monic quadratic expressions using a variety of strategies (VCMNA332) | simplify algebraic expressions, apply the distributive law to expand algebraic expressions including binomial products, and factorise monic quadratic expressions  VC2M9A02 | Split, combined, refined and realigned from Level 2 Number and Algebra |
| Sketch linear graphs using the coordinates of two points and solve linear equations (VCMNA310) | sketch linear graphs of equations in various algebraic forms, using the coordinates of 2 points, and solve linear equations  VC2M9A03 | No change |
| Find the distance between two points located on a Cartesian plane using a range of strategies, including graphing software (VCMNA308)  Find the midpoint and gradient of a line segment (interval) on the Cartesian plane using a range of strategies, including graphing software (VCMNA309) | find the gradient of a line segment, the midpoint of the line interval and the distance between 2 distinct points on the Cartesian plane  VC2M9A04 | Combined and refined |
| Graph simple non-linear relations with and without the use of digital technologies and solve simple related equations (VCMNA311)  Solve simple quadratic equations using a range of strategies (VCMNA341) | identify and graph quadratic functions, solve quadratic equations graphically and numerically, and use null factor law to solve monic quadratic equations with integer roots algebraically, using graphing software and digital tools as appropriate  VC2M9A05 | Combined and realigned from Level 10 Number and Algebra |
|  | use mathematical modelling to solve applied problems involving change, including financial contexts involving simple interest; formulate problems, choosing to use either linear or quadratic functions or other simple variations; interpret solutions in terms of the context; evaluate the model and report methods and findings  VC2M9A06 | New content description |
|  | experiment with the effects of the variation of parameters on graphs of related functions, using digital tools, making connections between graphical and algebraic representations, and generalising emerging patterns  VC2M9A07 | New content description |

#### VC2 strand: Measurement

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Calculate the surface area and volume of cylinders and solve related problems (VCMMG313)  Solve problems involving the surface area and volume of right prisms (VCMMG314) | solve problems involving the volume and surface area of right prisms, cylinders and composite objects using appropriate units  VC2M9M01 | Combined and refined |
| Investigate very small and very large time scales and intervals (VCMMG315)  Express numbers in scientific notation (VCMNA303) | solve problems involving very small and very large measurements, timescales and intervals expressed in scientific notation  VC2M9M02 | Combined and refined |
| Investigate Pythagoras’ Theorem and its application to solving simple problems involving right angled triangles (VCMMG318)  Apply trigonometry to solve right-angled triangle problems (VCMMG320)  Use the enlargement transformation to explain similarity and develop the conditions for triangles to be similar (VCMMG316)  Solve problems using ratio and scale factors in similar figures (VCMMG317) | solve spatial problems, applying angle properties, scale, similarity, ratio, Pythagoras’ theorem and trigonometry in right-angled triangles  VC2M9M03 | Combined and split |
|  | calculate and interpret absolute, relative and percentage errors in measurements  VC2M9M04 | New content description |
| Solve problems involving direct proportion. Explore the relationship between graphs and equations corresponding to simple rate problems (VCMNA301)  Solve problems using ratio and scale factors in similar figures (VCMMG317) | use mathematical modelling to solve practical problems involving direct proportion, rates, ratio and scale, including financial contexts; formulate the problems and interpret solutions in terms of the situation; evaluate the model and report methods and findings  VC2M9M05 | Split and refined |

#### VC2 strand: Space

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Use similarity to investigate the constancy of the sine, cosine and tangent ratios for a given angle in right-angled triangles (VCMMG319) | recognise the constancy of the sine, cosine and tangent ratios for a given angle in right-angled triangles using properties of similarity  VC2M9SP01 | Refined for clarity |
| Use the enlargement transformation to explain similarity and develop the conditions for triangles to be similar (VCMMG316) | apply the enlargement transformation to shapes and objects using dynamic geometry software as appropriate; identify and explain, using language of similarity, ratio and scale, aspects that remain the same and those that change  VC2M9SP02 | Split and refined |
|  | design, test and refine algorithms involving a sequence of steps and decisions based on geometric constructions and theorems; discuss and evaluate refinements  VC2M9SP03 | New content description |

#### VC2 strand: Statistics

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Investigate reports of surveys in digital media and elsewhere for information on how data were obtained to estimate population means and medians (VCMSP323) | analyse reports of surveys in digital media and elsewhere for information on how data was obtained around everyday questions and issues involving at least one numerical and at least one categorical variable, to estimate population means and medians  VC2M9ST01 | Refined |
|  | analyse how different sampling methods, and different samples using the same method, can affect the results of surveys and how choice of representation can be used to support a particular point of view  VC2M9ST02 | New content description |
| Construct back-to-back stem-and-leaf plots and histograms and describe data, using terms including ‘skewed’, ‘symmetric’ and ‘bi modal’ (VCMSP325)  Compare data displays using mean, median and range to describe and interpret numerical data sets in terms of location (centre) and spread (VCMSP326) | represent the distribution of multiple data sets for numerical variables using comparative representations such as back-to-back stem-and-leaf plots and histograms; describe data, using terms including ‘skewed’, ‘symmetric’ and ‘bi-modal’; compare data distributions using mean, median and range to describe and interpret numerical data sets with consideration of centre, spread and shape, and the effect of outliers on these measures  VC2M9ST03 | Combined and refined |
|  | choose appropriate forms of display or visualisation for a given type of data; justify selections and interpret displays for a given context  VC2M9ST04 | New content description |
| Identify everyday questions and issues involving at least one numerical and at least one categorical variable, and collect data directly from secondary sources (VCMSP324) | plan and conduct statistical investigations involving the collection and analysis of different kinds of data; report findings and discuss the strength of evidence to support any conclusions  VC2M9ST05 | Refined for clarity |

#### VC2 strand: Probability

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| List all outcomes for two-step chance experiments, both with and without replacement using tree diagrams or arrays. Assign probabilities to outcomes and determine probabilities for events (VCMSP321) | list all outcomes for two-step chance experiments both with and without replacement, using lists, tree diagrams, tables or arrays; assign probabilities to outcomes and events  VC2M9P01 | Refined |
| Calculate relative frequencies from given or collected data to estimate probabilities of events involving ‘and’ or ‘or’ (VCMSP322) | calculate relative frequencies from given or collected data to estimate probabilities of events involving ‘and’, inclusive ‘or’ and exclusive ‘or’  VC2M9P02 | Refined for clarity |
|  | design and conduct repeated chance experiments and simulations using digital tools to estimate probabilities that cannot be determined exactly  VC2M9P03 | New content description |

## Level 10

### Achievement standard

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Number and Algebra  Students recognise the connection between simple and compound interest. They solve problems involving linear equations and inequalities, quadratic equations and pairs of simultaneous linear equations and related graphs, with and without the use of digital technology. Students substitute into formulas, find unknown values, manipulate linear algebraic expressions, expand binomial expressions and factorise monic and simple non-monic quadratic expressions, with and without the use of digital technology. They represent linear, quadratic and exponential functions numerically, graphically and algebraically, and use them to model situations and solve practical problems.  Measurement and Geometry  Students solve and explain surface area and volume problems relating to composite solids. They use parallel and perpendicular lines, angle and triangle properties, similarity, trigonometry and congruence to solve practical problems and develop proofs involving lengths, angles and areas in plane shapes. They use digital technology to construct and manipulate geometric shapes and objects, and explore symmetry and pattern in two dimensions.  Statistics and Probability  Students compare univariate data sets by referring to summary statistics and the shape of their displays. They describe bivariate data where the independent variable is time and use scatter-plots generated by digital technology to investigate relationships between two continuous variables. Students evaluate the use of statistics in the media. They list outcomes for multi-step chance experiments involving independent and dependent events, and assign probabilities for these experiments. | By the end of Level 10, students recognise the effect of approximations of real numbers in repeated calculations.  Students use mathematical modelling to solve problems involving growth and decay in financial and other applied situations, applying linear, quadratic and exponential functions as appropriate, and solve related equations, numerically and graphically. They make and test conjectures involving functions and relations using digital tools. Students substitute into formulas, find unknown values, manipulate linear and quadratic algebraic expressions, expand binomial expressions and factorise monic and simple non-monic quadratic expressions, with and without the use of digital tools. They solve problems involving linear equations and inequalities, quadratic equations and pairs of simultaneous linear equations and related graphs, algebraically and graphically, with and without the use of digital tools, and justify solutions. They represent linear, quadratic and exponential functions numerically, graphically and algebraically, and use them to model situations and solve practical problems. Students can design and implement simple algorithms using pseudocode or other general purpose programming language.  Students solve measurement problems involving surface area and volume of composite objects. They interpret and use logarithmic scales representing small or large quantities or change in applied contexts. Students apply Pythagoras’ theorem and trigonometry to solve practical problems involving right-angled triangles. They identify the impact of measurement errors on the accuracy of results. Students use mathematical modelling to solve practical problems involving direct and inverse proportion and scaling, evaluating and modifying models, and reporting assumptions, methods and findings.  Students use deductive reasoning, theorems and algorithms to solve spatial problems. They interpret networks used to represent practical situations and describe connectedness.  Students compare univariate data sets by referring to summary statistics and the shape of their displays. They plan and conduct statistical investigations involving bivariate data, including where the independent variable is time. They represent the distribution of data involving 2 variables, using tables and scatterplots, and comment on possible association. They analyse inferences and conclusions in the media, noting potential sources of bias. Students compare the distribution of continuous numerical data, using various displays, and discuss distributions in terms of centre, spread, shape and outliers.  Students apply conditional probability to solve problems involving compound events. They design and conduct simulations involving conditional probability, using digital tools. | Removed the 3 strand headings because no longer relevant. Achievement standards have been split, refined and realigned to the revised Victorian curriculum. |

### Content descriptions

#### VC2 strand: Number

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Solve simple problems involving inverse proportion (VCMNA327) |  | Removed to reduce duplication and consolidated into VC2M10A15 to facilitate connections in sequencing |
|  | recognise the effect of using approximations of real numbers in repeated calculations and compare the results when using exact representations  VC2M10N01 | New content description |

#### VC2 strand: Algebra

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Factorise algebraic expressions by taking out a common algebraic factor (VCMNA329)  Simplify algebraic products and quotients using index laws (VCMNA330)  Apply the four operations to simple algebraic fractions with numerical denominators (VCMNA331)  Expand binomial products and factorise monic quadratic expressions using a variety of strategies (VCMNA332) | factorise algebraic expressions by taking out a common algebraic factor  VC2M10A01 | No change |
| simplify algebraic products and quotients using exponent laws  VC2M10A02 | No change |
| apply the 4 operations to simple algebraic fractions with numerical or single variable denominators  VC2M10A03 | No change |
| expand binomial products and factorise monic quadratic expressions using a variety of strategies  VC2M10A04 | No change |
| Substitute values into formulas to determine an unknown and re-arrange formulas to solve for a particular term (VCMNA333) | substitute values into formulas to determine an unknown and rearrange formulas to solve for a particular term  VC2M10A05 | No change |
| Implement algorithms using data structures in a general-purpose programming language (VCMNA334) | implement algorithms that use data structures using pseudocode or a general purpose programming language  VC2M10A06 | Inclusion of pseudocode as an option for computational thinking contexts |
| Solve problems involving linear equations, including those derived from formulas (VCMNA335) | solve problems involving linear equations, including those derived from formulas  VC2M10A07 | No change |
| Solve linear inequalities and graph their solutions on a number line (VCMNA336)  Solve simultaneous linear equations, using algebraic and graphical techniques including using digital technology (VCMNA337) | solve linear inequalities and graph their solutions on a number line  VC2M10A08 | No change |
| solve simultaneous linear equations, using algebraic and graphical techniques including using digital tools  VC2M10A09 | No change |
| Solve problems involving gradients of parallel and perpendicular lines (VCMNA338) | solve problems involving gradients of parallel and perpendicular lines  VC2M10A10 | No change |
| Explore the connection between algebraic and graphical representations of relations such as simple quadratic, reciprocal, circle and exponential, using digital technology as appropriate (VCMNA339)  Solve simple exponential equations (VCMNA360) | explore the connection between algebraic and graphical representations of relations such as simple quadratic, reciprocal, circle and exponential, using digital tools as appropriate  VC2M10A11 | Combined and realigned from Level 10A Number and Algebra |
| Solve linear equations involving simple algebraic fractions (VCMNA340) | solve linear equations involving simple algebraic fractions  VC2M10A12 | No change |
| Solve simple quadratic equations using a range of strategies (VCMNA341) | solve simple quadratic equations using a range of strategies, including null factor law  VC2M10A13 | No change |
| Solve simple exponential equations (VCMNA360) | solve simple exponential equations  VC2M10A14 | No change |
| Connect the compound interest formula to repeated applications of simple interest using appropriate digital technologies (VCMNA328)  Solve problems involving linear equations, including those derived from formulas (VCMNA335) | use mathematical modelling to solve applied problems involving inverse proportion, growth and decay, including in financial contexts to establish the compound interest formula as repeated applications of simple interest; formulate problems, choosing to apply linear, quadratic or exponential models; interpret solutions in terms of the situation; evaluate and modify models as necessary and report assumptions, methods and findings  VC2M10A15 | Content descriptions consolidated to facilitate connections in sequencing |
| Solve equations using systematic guess-check-and-refine with digital technology (VCMNA342) | solve equations graphically or using systematic numerical guess-check-and-refine with digital tools, with consideration of whether all solutions have been found  VC2M10A16 | No change |

#### VC2 strand: Measurement

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Solve problems involving surface area and volume for a range of prisms, cylinders and composite solids (VCMMG343) | solve problems involving the surface area and volume of composite objects using appropriate units  VC2M10M01 | Refined for clarity |
|  | interpret and use logarithmic scales in applied contexts involving small and large quantities and change  VC2M10M02 | New content description |
| Solve right-angled triangle problems including those involving direction and angles of elevation and depression (VCMMG346) | solve practical problems by applying Pythagoras’ theorem and trigonometry to right-angled triangles, including problems involving direction and angles of elevation and depression  VC2M10M03 | Refined for clarity |
|  | use mathematical modelling to solve practical problems involving direct and inverse proportion and scaling of objects; formulate problems and interpret solutions in terms of the situation, including the impact of measurement errors on the accuracy of results; evaluate and modify models as necessary, and report assumptions, methods and findings  VC2M10M04 | Content description VCMNA327 incorporated here to facilitate connections in sequencing |
|  |

#### VC2 strand: Space

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Formulate proofs involving congruent triangles and angle properties (VCMMG344)  Apply logical reasoning, including the use of congruence and similarity, to proofs and numerical exercises involving plane shapes (VCMMG345) | apply deductive reasoning to formulate proofs involving shapes in the plane and use theorems to solve spatial problems  VC2M10SP01 | Combined and refined |
|  | interpret networks and network diagrams used to represent relationships in practical situations and describe connectedness  VC2M10SP02 | New content description |

#### VC2 strand: Statistics

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Determine quartiles and interquartile range and investigate the effect of individual data values, including outliers on the interquartile range (VCMSP349)  Construct and interpret box plots and use them to compare data sets (VCMSP350)  Compare shapes of box plots to corresponding histograms and dot plots and discuss the distribution of data (VCMSP351) | compare data distributions for continuous numerical variables using quartiles and interquartile range and appropriate data displays including boxplots, histograms and dot plots; discuss the shapes of these distributions in terms of centre, spread, shape and outliers in the context of the data  VC2M10ST01 | Content descriptions consolidated to facilitate connections in sequencing |
| Use scatter plots to investigate and comment on relationships between two numerical variables (VCMSP352) | construct scatterplots and consider a line of good fit; comment on the association between the 2 numerical variables in terms of strength, direction and linearity  VC2M10ST02 | Refined for clarity |
| Investigate and describe bivariate numerical data, including where the independent variable is time (VCMSP353) | construct two-way tables and discuss possible relationship between categorical variables  VC2M10ST03 | Removed – combined with VC2M10ST05 |
| Evaluate statistical reports in the media and other places by linking claims to displays, statistics and representative data (VCMSP354) | analyse claims, inferences and conclusions of statistical reports in the media and other places, by linking claims to displays, statistics and representative data, including ethical considerations and identification of potential sources of bias  VC2M10ST04 | Refined |
|  | plan and conduct statistical investigations of situations that involve bivariate data, including where the independent variable is time; evaluate and report findings with consideration of limitations of any inferences  VC2M10ST05 | New content description |

#### VC2 strand: Probability

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Use the language of ‘if ....then, ‘given’, ‘of’, ‘knowing that’ to investigate conditional statements and identify common mistakes in interpreting such language (VCMSP348) | use the language of ‘if … then …’, ‘given’, ‘of’ and ‘knowing that’ to investigate conditional statements and identify common mistakes in interpreting such language, and describe and interpret situations involving conditional probability; design and conduct simulations using digital tools to model conditional probability and interpret results  VC2M10P01 | Content description and new content consolidated to facilitate connections in sequencing |
| Describe the results of two- and three-step chance experiments, both with and without replacements, assign probabilities to outcomes and determine probabilities of events. Investigate the concept of independence (VCMSP347) | describe the results of two- and three-step chance experiments, both with and without replacements, assign probabilities to outcomes and determine probabilities of events; investigate the concept of independence  VC2M10P02 | No difference |

## Level 10A

### Achievement standard

No achievement standard for Level 10A. Content is optional.

### Content descriptions

#### VC2 strand: Number

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Define rational and irrational numbers and perform operations with surds and fractional indices (VCMNA355) | define rational and irrational numbers and perform operations with surds and fractional indices  VC2M10AN01 | No change |
|  | perform operations on numbers involving fractional exponents and surds  VC2M10AN02 | New content description |
| Use the definition of a logarithm to establish and apply the laws of logarithms and investigate logarithmic scales in measurement (VCMNA356) | use the definition of a logarithm to establish and apply the laws of logarithms and investigate logarithmic scales in measurement  VC2M10AN03 | No change |

#### VC2 strand: Algebra

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Investigate the concept of a polynomial and apply the factor and remainder theorems to solve problems (VCMNA357) | investigate the concept of a polynomial and apply the factor and remainder theorems to solve problems  VC2M10AA01 | No change |
| Devise and use algorithms and simulations to solve mathematical problems (VCMNA358) | devise and use algorithms and simulations to solve mathematical problems  VC2M10AA02 | No change |
|  | simplify combinations of linear expressions with rational coefficients and the solution of related equations  VC2M10AA03 | New content description |
|  | explore the inverse relationship between exponential functions and logarithmic functions and the solution of related equations  VC2M10AA04 | New content description |
| Describe, interpret and sketch parabolas, hyperbolas, circles and exponential functions and their transformations (VCMNA359) | describe, interpret, and sketch parabolas, hyperbolas, circles and exponential functions and their transformations  VC2M10AA05 | No change |
| Apply understanding of polynomials to sketch a range of curves and describe the features of these curves from their equation (VCMNA361) | apply understanding of polynomials to sketch a range of curves and describe the features of these curves from their equation  VC2M10AA06 | No change |
| Factorise monic and non-monic quadratic expressions and solve a wide range of quadratic equations derived from a variety of contexts (VCMNA362) | factorise monic and non-monic quadratic expressions and solve a wide range of quadratic equations derived from a variety of contexts  VC2M10AA07 | No change |
| Use function notation to describe the relationship between dependent and independent variables in modelling contexts (VCMNA363) | use function notation to describe the relationship between dependent and independent variables in modelling contexts  VC2M10AA08 | No change |
| Solve simultaneous equations using systematic guess-check-and-refine with digital technology (VCMNA364) | solve linear and non-linear simultaneous equations using graphing or systematic guess-check-and-refine with digital tools  VC2M10AA09 | No change |
|  | experiment with functions and relations using digital tools, making and testing conjectures and generalising emerging patterns  VC2M10AA10 | New content description |

#### VC2 strand: Measurement

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Solve problems involving surface area and volume of right pyramids, right cones, spheres and related composite solids (VCMMG365) | solve problems involving surface area and volume of right pyramids, right cones, spheres and related composite solids  VC2M10AM01 | No change |
| Prove and apply angle and chord properties of circles (VCMMG366) |  | Combined into VC2M10ASP01 |
|  | explore the effect of increasingly small changes in the value of variables on the average rate of change and in relation to limiting values  VC2M10AM02 | New content description |

#### VC2 strand: Space

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
|  | prove and apply relationships between angles and various lines associated with circles (radii, diameters, chords, tangents)  VC2M10ASP01 | New content description |
| Establish the sine, cosine and area rules for any triangle and solve related problems (VCMMG367) | establish the sine, cosine and area rules for any triangle and solve related problems  VC2M10ASP02 | No change |
| Use the unit circle to define trigonometric functions as functions of a real variable, and graph them with and without the use of digital technologies (VCMMG368) | use the unit circle to define the simple trigonometric functions of , and as functions of a real variable, and graph them with and without the use of digital tools  VC2M10ASP03 | No change |
| Solve simple trigonometric equations (VCMMG369) | solve simple trigonometric equations  VC2M10ASP04 | No change |
| Apply Pythagoras’ theorem and trigonometry to solving three-dimensional problems in right-angled triangles (VCMMG370) | apply Pythagoras’ theorem and trigonometry to solving three-dimensional problems in right-angled triangles  VC2M10ASP05 | No change |
|  | design, test and refine solutions to spatial problems using algorithms and digital tools; communicate and justify solutions  VC2M10ASP06 | New content description |

#### VC2 strand: Statistics

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
| Calculate and interpret the mean and standard deviation of data and use these to compare data sets. Investigate the effect of individual data values including outliers, on the standard deviation (VCMSP372) | calculate and interpret the mean and standard deviation of data and use these to compare data sets; investigate the effect of individual data values, including outliers, on the standard deviation  VC2M10AST01 | No change |
|  | identify measures of spread, and understand their interpretation and usefulness with respect to different data distributions  VC2M10AST02 | New content description |
| Use digital technology to investigate bivariate numerical data sets. Where appropriate use a straight line to describe the relationship allowing for variation, make predictions based on this straight line and discuss limitations (VCMSP373) | use digital tools to investigate bivariate numerical data sets; where appropriate use a straight line to describe the relationship allowing for variation, make predictions based on this straight line and discuss limitations  VC2M10AST03 | No change |

#### VC2 strand: Probability

| Victorian Curriculum F–10 Version 1.0 | Victorian Curriculum F–10 Version 2.0 | Comment |
| --- | --- | --- |
|  | explore counting principles, and factorial notation as a representation that provides efficient counting in multiplicative contexts, including calculations of probabilities  VC2M10AP01 | New content description |
| Investigate reports of studies in digital media and elsewhere for information on their planning and implementation (VCMSP371) | investigate reports of studies in digital media and elsewhere for information on their planning and implementation  VC2M10AP02 | No change |