 Changes to Mathematics Content Descriptions

**Victorian Curriculum F – 10 compared to the AusVELS Curriculum**

**Level F to 6**

Key: revised and new content descriptions are **bolded**. The column for new algorithms and coding content descriptions is shaded in light grey.

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| --- | --- | --- | --- |
| Strand | Number and Algebra | Measurement and Geometry | Statistics and Probability |
| Level | Number and place value | Patterns and algebra | Using units of measurement | Location and transformation | Shape | Data representation and interpretation |
| Foundation | Represent practical situations to model addition **and subtraction** [(VCMNA073)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA073) | **Represent practical situations to model sharing** [(VCMNA074)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA074) | **Follow a short sequence of instructions**[(VCMNA077)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA077) |  |  |  | **Organise answers to yes/no questions into simple data displays using objects and drawings** [(VCMSP084)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMSP084) | **Interpret simple data displays about yes/no questions** [(VCMSP085)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMSP085) |
| 1 | **Represent practical situations that model sharing** [(VCMNA090)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA090) |  | **Recognise the importance of repetition of a process in solving problems**[(VCMNA094)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA094) | Measure and compare the lengths, **masses** and capacities of pairs of objects using uniform informal units [(VCMMG095)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG095) |  |  |  |  |
| 2 |  |  | **Apply repetition in arithmetic operations, including multiplication as repeated addition and division as repeated subtraction**[(VCMNA114)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA114) |  |  |  |  |  |
| 3 |  |  | **Use a function machine and the inverse machine as a model to apply mathematical rules to numbers or shapes**[(VCMNA139)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA139) | Measure, order and compare objects using familiar metric units of length, **area,** mass and capacity[(VCMMG140)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG140) | **Identify and describe slides and turns found in the natural and built environment**[(VCMMG145)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG145) |  |  |  |
| 4 |  |  | **Define a simple class of problems and solve them using an effective algorithm that involves a short sequence of steps and decisions**[(VCMNA164)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA164) |  |  | **Explain and compare the geometric properties of two-dimensional shapes and three-dimensional objects**[(VCMMG171)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG171) |  |  |
| 5 | **Recognise, represent and order numbers to at least hundreds of thousands**[(VCMNA186)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA186) |  | **Follow a mathematical algorithm involving branching and repetition (iteration)**[(VCMNA194)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA194) |  |  |  |  |  |
| 6 | 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)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA209) |  | **Design algorithms involving branching and iteration to solve specific classes of mathematical problems**[(VCMNA221)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA221) |  | Investigate the effect of **combinations of transformations on simple and composite shapes, including creating tessellations,** with and without the use of digital technologies [(VCMMG229)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG229) |  | **Construct,** interpret and compare a range of data displays, including side-by-side column graphs for two categorical variables [(VCMSP235)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMSP235) | **Pose and refine questions to collect categorical or numerical data by observation or survey** [(VCMSP237)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMSP237) |

**Level 7 to 10A**

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| Strand | Number and Algebra | Measurement and Geometry | Statistics and Probability |
| Level | Number and place value | Patterns and algebra | Real numbers | Linear and non-linear relationships | Using units of measurement | Geometric reasoning | Data representation and interpretation |
| 7 | Apply the associative, commutative and distributive laws to aid mental and written computation **and make estimates for these computations** [(VCMNA240)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA240) | Investigate, interpret and analyse graphs from real life data**, including consideration of domain and range** [(VCMNA257)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA257) |  | **Design and implement mathematical algorithms using a simple general purpose programming language**[(VCMNA254)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA254) |  |  |  |  |  |  |  |  |  |  |
| 8 | 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)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA273) |  |  | **Use algorithms and related testing procedures to identify and correct errors**[(VCMNA282)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA282) | Solve problems involving the use of percentages, including percentage increases and decreases **and percentage error**, with and without digital technologies [(VCMNA276)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA276) | 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)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA277) | **Plot graphs of non-linear real life data with and without the use of digital technologies, and interpret and analyse these graphs**[(VCMNA285)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA285) |  |  | 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)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG288) | 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)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMMG291) | **Distinguish between a population and a sample** and investigate techniques for collecting data, including census, sampling and observation [(VCMSP297)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMSP297) | Investigate the effect of individual data values including outliers, on the **range,** mean and median[(VCMSP300)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMSP300) |  |
| 9 |  |  |  | **Apply set structures to solve real-world problems**[(VCMNA307)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA307) |  |  |  |  |  |  |  |  |  |  |
| 10 |  |  | Substitute values into formulas to determine an unknown **and re-arrange formulas to solve for a particular term**[(VCMNA333)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA333) | **Implement algorithms using data structures in a general-purpose programming language**[(VCMNA334)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA334) | **Solve simple problems involving inverse proportion**[(VCMNA327)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA327) |  | Solve problems involving **gradients** of parallel and perpendicular lines [(VCMNA338)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA338) | Explore the connection between algebraic and graphical representations of relations such as simple quadratic, **reciprocal,** circle and exponential, using digital technology as appropriate [(VCMNA339)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA339) | **Solve equations using systematic guess-check-and-refine with digital technology**[(VCMNA342)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA342) |  |  | Determine quartiles and interquartile range **and investigate the effect of individual data values, including outliers on the interquartile range**[(VCMSP349)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMSP349) | Compare shapes of box plots to corresponding histograms and dot plots **and discuss the distribution of data** [(VCMSP351)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMSP351) | Investigate and describe bivariate numerical data, **including** where the independent variable is time[(VCMSP353)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMSP353) |
| 10A |  |  |  | **Devise and use algorithms and simulations to solve mathematical problems**[(VCMNA358)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA358) | Use the definition of a logarithm to establish and apply the laws of logarithms **and investigate logarithmic scales in measurement**[(VCMNA356)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA356) |  | Use function notation to describe the relationship between dependent and independent variables in modelling contexts [(VCMNA363)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA363) | **Solve simultaneous equations using systematic guess-check-and-refine with digital technology**[(VCMNA364)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMNA364) |  |  |  | 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)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMSP372) | 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)](http://victoriancurriculum.vcaa.vic.edu.au/Curriculum/ContentDescription/VCMSP373) |  |