Mathematics Level 7 map – template

**Use this curriculum area map to identify where content descriptions and achievement standards are explicitly addressed within your school’s teaching and learning plans. This template will help you to both map the Victorian Curriculum F–10 Version 2.0 and audit your current teaching and learning plans.**

# Instructions

1. Enter your details in the footer on page 1.
2. Enter the title of each teaching and learning unit in the first column of each mapping table. Indicate the connections to the curriculum by checking the box of the relevant content description(s) and writing the number of the relevant sentence(s) from the achievement standard.
3. Complete all the mapping tables, listing all teaching and learning units. Check that all achievement standard sentences have been covered. Detail any comments, notes and actions.
4. Complete the Assessment, Analysis of Curriculum Coverage and Next Steps sections on the final page.

**Hint:** Use your completed curriculum area map to start populating or updating your **curriculum area plan**.

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| **Achievement standard (AS) paragraph for Number strand, with numbered sentences** | **Y/N** |
| 1. By the end of Level 7, students represent natural numbers in expanded form and as products of prime factors, using exponent notation.
 |[ ]
| 1. They solve problems involving squares of numbers and square roots of perfect square numbers.
 |[ ]
| 1. Students solve problems involving addition and subtraction of integers.
 |[ ]
| 1. They use all 4 operations in calculations involving positive fractions and decimals, choosing efficient mental and written calculation strategies.
 |[ ]
| 1. Students choose between equivalent representations of rational numbers and percentages to assist in calculations and make simple estimates to judge the reasonableness of results.
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| 1. 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.
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|  | **Strand** | **Number** |
|  | **Content description (CD)** | 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 | represent natural numbers in expanded notation using powers of 10, and as products of powers of prime numbers using exponent notation VC2M7N02 | find equivalent representations of rational numbers and represent positive and negative rational numbers and mixed numbers on a number line VC2M7N03 | round decimals to a given accuracy appropriate to the context and use appropriate rounding and estimation to check the reasonableness of computationsVC2M7N04 | multiply and divide fractions and decimals using efficient mental and written strategies, and digital tools VC2M7N05 | use the 4 operations with positive rational numbers, including fractions and decimals, to solve problems using efficient mental and written calculation strategies VC2M7N06 | find percentages of quantities and express one quantity as a percentage of another, with and without digital tools VC2M7N07 | compare, order and solve problems involving addition and subtraction of integers VC2M7N08 | recognise, represent and solve problems involving ratios VC2M7N09 | 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 |
| **Teaching and learning unit** | **Semester/Year** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** |
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| **Comments, notes, actions** |  |

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| **Achievement standard (AS) paragraph for Algebra strand, with numbered sentences** | **Y/N** |
| 1. Students use algebraic expressions to represent situations, describe the relationships between variables from authentic data and substitute values into formulas to determine unknown values.
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| 1. They solve linear equations with natural number solutions and verify their solutions through substitution.
 |[ ]
| 1. Students create tables of values relating to algebraic expressions and formulas, and describe how the values change.
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|  | **Strand** | **Algebra** |
|  | **Content description (CD)** | recognise and use variables to represent everyday formulas algebraically and substitute values into formulas to determine an unknown VC2M7A01 | apply the associative, commutative and distributive laws to aid mental and written computation, and formulate algebraic expressions using constants, variables, operations and brackets VC2M7A02 | solve one-variable linear equations of increasing complexity with natural number solutions; verify equation solutions by substitution VC2M7A03 | investigate, interpret and describe relationships between variables represented in graphs of functions developed from authentic data VC2M7A04 | generate tables of values from visually changing patterns or the rule of a function; describe and plot these relationships on the Cartesian plane VC2M7A05 | manipulate formulas involving several variables using digital tools, and describe the effect of systematic variation in the values of the variablesVC2M7A06 |
| **Teaching and learning unit** | **Semester/Year** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** |
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| **Comments, notes, actions** |  |

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| **Achievement standard (AS) paragraph for Measurement strand, with numbered sentences** | **Y/N** |
| 1. Students apply knowledge of angle relationships and the sum of angles in a triangle to solve problems, giving reasons.
 |[ ]
| 1. They establish and use formulas for the areas of triangles and parallelograms and the volumes of rectangular and triangular prisms to solve problems.
 |[ ]
| 1. They describe the relationships between the radius, diameter and circumference of a circle.
 |[ ]

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|  | **Strand** | **Measurement** |
|  | **Content description (CD)** | establish the formulas for areas of rectangles, triangles and parallelograms and use these in problem-solving VC2M7M01 | solve problems involving the volume of right prisms including rectangular and triangular prisms, using established formulas and appropriate units VC2M7M02 | describe the relationship between $π$ and the circumference, radius and diameter of a circle VC2M7M03 | 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 | 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 | 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 |
| **Teaching and learning unit** | **Semester/Year** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** |
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| **Comments, notes, actions** |  |

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| **Achievement standard (AS) paragraph for Space strand, with numbered sentences** | **Y/N** |
| 1. Students classify polygons according to their features and design an algorithm to sort and classify shapes.
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| 1. They represent objects two-dimensionally in different ways, describing the usefulness of these representations.
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| 1. They use coordinates to describe transformations of points in the plane.
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| **Achievement standard (AS) paragraph for Statistics strand, with numbered sentences** | **Y/N** |
| 1. Students plan and conduct statistical investigations involving discrete and continuous numerical data, using appropriate displays.
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| 1. They interpret data in terms of the shape of distribution and summary statistics, identifying possible outliers.
 |[ ]
| 1. They decide which measure of central tendency is most suitable and explain their reasoning.
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| **Achievement standard (AS) paragraph for Probability strand, with numbered sentences** | **Y/N.** |
| 1. Students list sample spaces for single-step experiments, assign probabilities to outcomes of events and predict relative frequencies for related events.
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| 1. They conduct repeated single-step chance experiments and run simulations using digital tools, giving reasons for differences between predicted and observed results.
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|  | **Strand** | **Space** | **Statistics** | **Probability** |
|  | **Content description (CD)** | represent three-dimensional objects in 2 dimensions; discuss and reason about the advantages and disadvantages of different representationsVC2M7SP01 | classify triangles, quadrilaterals and other polygons according to their side and angle properties; identify and reason about relationships VC2M7SP02 | 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 | 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 | 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 | 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 | 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 | identify the sample space for single-stage experiments; assign probabilities to the possible outcomes and predict relative frequencies for related experiments. VC2M7P01 | 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 |
| **Teaching and learning unit** | **Semester/Year** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** | **CD** | **AS no.** |
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| **Comments, notes, actions** |  |

# Assessment

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| **Teaching and learning unit** | **Assessment task name(s) and type(s)** | **AS no.** |
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# Analysis of curriculum coverage

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| <The following questions could be used as prompts for the analysis process:* Have you addressed all the content descriptions?
* Have you addressed all the sentences in the achievement standard?
* Where are there gaps in the content description coverage?
* Where are there gaps in the achievement standard coverage?
* Are all content descriptions equal? Do you think they all take the same amount of time to teach?
* Is anything being over-taught?
* Is anything being missed completely or given insufficient attention?>
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# Next steps

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| <The following questions could be used as prompts for next steps:* What implications would gaps in content description coverage have on your teaching and learning plans?
* What implications would gaps in achievement standard coverage have on assessment?
* How will you address any gaps?

Use your completed curriculum area map to start populating or updating your curriculum area plan.>  |