Mathematics Level 3 map – example

**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(s).

**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 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.
 |[x]
| 1. They partition, rearrange and regroup two- and three-digit numbers in different ways to assist in calculations.
 |[x]
| 1. 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.
 |[x]
| 1. 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.
 |[x]
| 1. Students represent unit fractions and their multiples in different ways.
 |[x]
| 1. They make estimates and determine the reasonableness of financial and other calculations.
 |[x]

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|  | **Strand** | **Number** |
|  | **Content description (CD)** | identify, explain and use the properties of odd and even numbersVC2M3N01 | recognise, represent and order natural numbers using naming and writing conventions for numerals beyond 10 000 VC2M3N02 | recognise and represent unit fractions including $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$ and $\frac{1}{10}$ and their multiples in different ways; combine fractions with the same denominator to complete the whole VC2M3N03 | add and subtract two- and three-digit numbers using place value to partition, rearrange and regroup numbers to assist in calculations without a calculatorVC2M3N04 | multiply and divide one- and two-digit numbers, representing problems using number sentences, diagrams and arrays, and using a variety of calculation strategies VC2M3N05 | estimate the quantity of objects in collections and make estimates when solving problems to determine the reasonableness of calculations VC2M3N06 | recognise the relationships between dollars and cents and represent money values in different ways VC2M3N07 | 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 | follow and create algorithms involving a sequence of steps and decisions to investigate numbers; describe any emerging patterns VC2M3N09 |
| **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.** |
| 3.1.1 Odd and even numbers | 1 |[x]  1 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[x]  8 |
| 3.1.2 Addition, subtraction and inverse | 1 |[ ]   |[ ]   |[ ]   |[x]  2, 3 |[ ]   |[x]  6 |[ ]   |[ ]   |[ ]   |
| 3.1.7 Counting with fractions  | 1 |[ ]   |[ ]   |[x]  5 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |
| 3.1.10 Whole numbers up to 10 000 | 1 |[ ]   |[x]  1 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |
| 3.1.11 Money representations | 1 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[x]  12 |[x]  4 |[ ]   |
| 3.2.1 Multiplication and division | 2 |[ ]   |[ ]   |[ ]   |[ ]   |[x]  2 |[ ]   |[ ]   |[x]  4 |[x]  8 |
| 3.2.2 Multiplication and division facts | 2 |[ ]   |[ ]   |[ ]   |[x]  2 |[ ]   |[ ]   |[ ]   |[x]  4 |[x]  8 |
| 3.2.5 Solving practical problems using number | 2 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[x]  6 |[ ]   |[x]  4 |[ ]   |
| 3.2.6 Combining fractions | 2 |[ ]   |[ ]   |[x]  5 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |
| 3.2.10 Whole numbers beyond 10 000 | 2 |[ ]   |[x]  1 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |
| **Comments, notes, actions** | Content description VC2M3N09 is addressed in the Number strand and the Algebra strand and linked to achievement standard sentence 8. |

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| **Achievement standard (AS) paragraph for Algebra strand, with numbered sentences** | **Y/N** |
| 1. Students find unknown values in number sentences involving addition and subtraction.
 |[x]
| 1. They create algorithms to investigate numbers and explore simple patterns.
 |[x]

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| **Achievement standard (AS) paragraph for Measurement strand, with numbered sentences** | **Y/N** |
| 1. Students use familiar metric units when estimating, comparing and measuring the attributes of objects and events.
 |[x]
| 1. They identify angles as measures of turn and compare them to right angles.
 |[x]
| 1. Students estimate and compare measures of duration using formal units of time.
 |[x]
| 1. They represent money values in different ways.
 |[x]

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|  | **Strand** | **Algebra** | **Measurement** |
|  | **Content description (CD)** | recognise and explain the connection between addition and subtraction as inverse operations, apply to partition numbers and find unknown values in number sentences VC2M3A01 | 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 | recall and demonstrate proficiency with multiplication facts for 3, 4, 5 and 10; extend and apply facts to develop the related division facts VC2M3A03 | identify which metric units are used to measure everyday items; use measurements of familiar items and known units to make estimates VC2M3M01 | measure and compare objects using familiar metric units of length, mass and capacity, and instruments with labelled markings VC2M3M02 | 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 | describe the relationship between the hours and minutes on analog and digital clocks, and read the time to the nearest minute VC2M3M04 | identify angles as measures of turn and use right angles as a reference to compare angles in everyday situations VC2M3M05 |
| **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.** |
| 3.1.2 Addition, subtraction and inverse | 1 |[x]  7 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |
| 3.1.4 Measuring length | 1 |[ ]   |[ ]   |[ ]   |[x]  9 |[ ]   |[ ]   |[ ]   |[ ]   |
| 3.1.5 Applying efficient mental strategies  | 1 |[ ]   |[x]  7 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |
| 3.1.8 Angles  | 1 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[x]  10 |
| 3.1.9 Units of time and duration | 1 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[x]  11 |[ ]   |[ ]   |
| 3.2.2 Multiplication and division facts | 2 |[ ]   |[ ]   |[x]  7, 8 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |
| 3.2.3 Measure and compare objects | 2 |[ ]   |[ ]   |[ ]   |[ ]   |[x]  9 |[ ]   |[ ]   |[ ]   |
| 3.2.9 Analog and digital clocks | 2 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[x]  11 |[ ]   |
| **Comments, notes, actions** | Achievement standard sentence 12 is addressed through VC2M3N07. |

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| **Achievement standard (AS) paragraph for Space strand, with numbered sentences** | **Y/N** |
| 1. Students make, compare and classify objects using key features.
 |[x]
| 1. They interpret and create two-dimensional representations of familiar environments.
 |[x]
| **Achievement standard (AS) paragraph for Statistics strand, with numbered sentences** | **Y/N** |
| 1. Students conduct guided statistical investigations involving categorical and discrete numerical data and interpret their results in terms of the context.
 |[x]
| 1. They record, represent and compare data they have collected.
 |[x]

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| **Achievement standard (AS) paragraph for Probability strand, with numbered sentences** | **Y/N.** |
| 1. Students use practical activities, observation or experiment to identify and describe outcomes and the likelihood of everyday events explaining reasoning.
 |[x]
| 1. Students conduct repeated chance experiments and discuss variation in results.
 |[x]

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|  | **Strand** | **Space** | **Statistics** | **Probability** |
|  | **Content description (CD)** | make, compare and classify objects, identifying key features and explaining why these features make them suited to their uses VC2M3SP01 | interpret and create two-dimensional representations of familiar environments, locating key landmarks and objects relative to each other VC2M3SP02 | 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 spreadsheetsVC2M3ST01 | create and compare different graphical representations of data sets, including using software where appropriate; interpret the data in terms of the context VC2M3ST02 | 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 | 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 reasoningVC2M3P01 | conduct repeated chance experiments; identify and describe possible outcomes, record the results, and recognise and discuss the variation VC2M3P02 |
| **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.** |
| 3.1.3 Exploring objects |  |[x]  13 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |
| 3.1.6 Data representation and interpretation |  |[ ]   |[ ]   |[x]  16 |[x]  16 |[x]  15 |[ ]   |[ ]   |
| 3.2.4 Two-dimensional representations |  |[ ]   |[x]  14 |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |
| 3.2.7 Chance |  |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[x]  17 |[ ]   |
| 3.2.8 Chance experiments and variation |  |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[ ]   |[x]  18 |
| **Comments, notes, actions** |  |

# Assessment

| **Teaching and learning unit** | **Assessment task name(s) and type(s)** | **AS no.** |
| --- | --- | --- |
| 3.1.1 Odd and even numbers | Activity: Is this number odd or even? (formative)Activity: Patterns of odd and even numbers (summative)  | 1, 8 |
| 3.1.2 Addition, subtraction and inverse | Pre-test (formative, DAL) Activity: Stepping forwards and backwards (formative)Task: Organising buses (summative, VCAA Level 3 example assessment task – Addition and subtraction)End-of-unit test (summative)  | 2, 3, 6, 7 |
| 3.1.3 Exploring objects | Activity: Making and comparing objects (formative)End-of-unit test (summative)  | 13 |
| 3.1.4 Measuring length | Activity: How long might this be? (formative)Task: Units of measure (summative) | 9 |
| 3.1.5 Applying efficient mental strategies  | Activity: Exploring ‘short cuts’ (formative)End-of-unit test (summative)  | 7 |
| 3.1.6 Data representation and interpretation | Unit assignment and presentation: Statistical investigation (summative)  | 15, 16 |
| 3.1.7 Counting with fractions  | Pre-test (formative, DAL)Activity: Patterns with fractionsEnd-of-unit test (summative)  | 5 |
| 3.1.8 Angles  | Activity: Right angles (formative)End-of-unit test (summative)  | 10 |
| 3.1.9 Units of time and duration | Activity: Connecting turn, time and duration (formative)End-of-unit task: Formal units of time (summative) | 11 |
| 3.1.10 Whole numbers up to 10 000 | Pre-test (formative, DAL) Activity: Place value in the thousands (formative)End-of-unit test (summative)  | 1 |
| 3.1.11 Money representations  | Activity: Paying with notes and coins (formative)End-of-unit task: How many different ways can I pay for this? (summative) | 4, 12 |
| 3.2.1 Multiplication and division | Pre-test (formative, DAL) Activity: Using number sentences to represent practical problems (formative)End-of-unit test (summative)  | 2, 4, 8 |
| 3.2.2 Multiplication and division facts | Activity: Exploring number patterns (formative)Activity: Describing a sequence of steps (formative)End-of-unit task: Summarising multiplication and division facts (summative) | 2, 4, 7, 8 |
| 3.2.3 Measure and compare objects | Activity: Which container holds more? (formative)Activity: What units of measure should I use? (formative)End-of-unit test (summative)  | 9 |
| 3.2.4 Two-dimensional representations | Activity: My school (formative)End-of-unit task: Two-dimensional representation of ‘My place’ (summative) | 14 |
| 3.2.5 Solving practical problems using number | Activity: How much will that cost? (formative)Task: Mathematical modelling (summative, VCAA ‘Level 3 example assessment task –Mathematical modelling’) | 4, 6 |
| 3.2.6 Combining fractions | Pre-test (formative, DAL)Activity: Fractions along the number line (formative)End-of-unit test (summative)  | 5 |
| 3.2.7 Chance | Activity: How likely is that? (formative)End-of-unit test (summative)  | 17 |
| 3.2.8 Chance experiments and variation | Unit assignment and presentation: Repeated chance experiments (summative)  | 18 |
| 3.2.9 Analog and digital clocks | Activity: What’s the time, Mr Wolf? (formative)End-of-unit test (summative)  | 11 |
| 3.2.10 Whole numbers beyond 10 000 | Pre-test (formative, DAL)Activity: Writing, saying and comparing numbers beyond 10 000 (formative)End-of-unit test (summative)  | 1 |

# Analysis of curriculum coverage

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| This curriculum area map is based on two 18-week semesters and addresses all Level 3 content descriptions (CDs) and all aspects of the Level 3 achievement standard (AS).Several AS sentences have been mapped to more than one unit. In particular, the following 4 AS sentences are addressed across 3 or 4 units:* AS sentence 1. 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.
* AS sentence 4. 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.
* AS sentence 7. Students find unknown values in number sentences involving addition and subtraction.
* AS sentence 8. They create algorithms to investigate numbers and explore simple patterns.

Some notable changes between this sequence of units and the previous sequence of units (based on the Victorian Curriculum F–10 Version 1.0) are as follows:* Counting with fractions (3.1.7), Angles (3.1.8) and Units of time and duration (3.1.9) have been sequenced consecutively to support the connection between fractions, angles and duration.
* Transformations has been removed from Level 3.
* Probability is first introduced at Level 3.

The listed assessments provide a common set of formative and summative assessments to be completed by all Level 3 classes. Additional formative activities can be undertaken as required. |

# Next steps

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| Familiarise yourself with the specific Level 3 curriculum updates – see VCAA **Mathematics – comparison of curriculums document (Version 1.0 to Version 2.0)** – including the increased emphasis on the 4 mathematical processes of:* probability experiments and simulations
* statistical investigation
* mathematical modelling
* computational thinking.

In year level teams:* determine the time allocated for each of the units listed in the curriculum area map
* review existing individual Victorian Curriculum F–10 Version 1.0 teaching and learning unit plans, and update or redevelop as applicable.
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