Year 2 plan — Australian Curriculum: Mathematics

Implementation year: School name:

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| Identify curriculum | Year level description | The proficiency strands *Understanding*, *Fluency*, *Problem* *Solving* and *Reasoning* are an integral part of mathematics content across the three content strands: *Number and Algebra*, *Measurement and Geometry*, and *Statistics and Probability*. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics.  At this year level:  *Understanding* includes connecting number calculations with counting sequences, partitioning and combining numbers flexibly, identifying and describing the relationship between addition and subtraction and between multiplication and division  *Fluency* includes counting numbers in sequences readily, using informal units iteratively to compare measurements, using the language of chance to describe outcomes of familiar chance events and describing and comparing time durations  *Problem* *Solving* includes formulating problems from authentic situations, making models and using number sentences that represent problem situations, and matching transformations with their original shape  *Reasoning* includes using known facts to derive strategies for unfamiliar calculations, comparing and contrasting related models of operations and creating and interpreting simple representations of data. | | | |
| Achievement standard | By the end of Year 2, students recognise increasing and decreasing number sequences involving 2s, 3s and 5s. They represent multiplication and division by grouping into sets. They associate collections of Australian coins with their value. Students identify the missing element in a number sequence. Students recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. They explain the effects of one-step transformations. Students make sense of collected information.  Students count to and from 1000. They perform simple addition and subtraction calculations using a range of strategies. They divide collections and shapes into halves, quarters and eighths. Students order shapes and objects using informal units. They tell time to the quarter hour and use a calendar to identify the date and the months included in seasons. They draw two- dimensional shapes. They describe outcomes for everyday events. Students collect data from relevant questions to create lists, tables and picture graphs. | | | |
| Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), *Australian Curriculum v3.0: Mathematics for Foundation–10*, <www.australiancurriculum.edu.au/Mathematics/Curriculum/F-10>. | | | |
| Teaching and learning | Term overview | Term 1 | Term 2 | Term 3 | Term 4 |
| During this term children will:   * explore sequencing, counting, grouping, partitioning and ordering collections to at least 1000 * investigate the connection between addition and subtraction through mental and written strategies, sequences and representations of problems * explore monthly and seasonal data and use it in the creation of data displays * revise and consolidate number and place value. | **Exemplar unit: Is the whole greater than the sum of its parts?**  During this term children will:   * explore sequencing, counting, grouping, partitioning and ordering collections to at least 1000 * investigate the connection between addition and subtraction through mental and written strategies, sequences and representations of problems * recognise and represent multiplication and division as arrays, groups and patterns * describe and compare halves, quarters and eighths of collections, time and turns * interpret maps of familiar locations * explore geometrical and spatial reasoning through 2-D shapes, 3-D objects, flips and slides * compare and contrast informal units and use the language of measurement. | During this term children will:   * recognise and represent multiplication and division as arrays, groups and patterns * investigate pattern through comparing and ordering shapes and objects based on length, area, volume and capacity, using uniform informal units * investigate more precise patterning through mass and balance scales * compare mass and capacity through description of the features of 3-D objects. | During this term children will:   * explore the connection between addition and subtraction, and the links to multiplication and division * count and order small collections of Australian coins and notes according to their value * explore the chance of likely, unlikely, certain and impossible events through data collection, interpretation and representation. Variables used are everyday and relevant to children’s experience (bus timetables, bells, the sun coming up, coin toss). |
| Aboriginal and Torres Strait Islander perspectives | Mathematics provides opportunities for children to strengthen their appreciation and understanding of Aboriginal peoples and Torres Strait Islander peoples and their living cultures. Specific content and skills within relevant sections of the curriculum can be drawn upon to encourage engagement with:   * Aboriginal and Torres Strait Islander frameworks of knowing and ways of learning * Social, historical and cultural contexts associated with different uses of mathematical concepts in Australian Indigenous societies * Aboriginal peoples’ and Torres Strait Islander peoples’ contributions to Australian society and cultures.   Mathematics provides opportunities to explore aspects of Australian Indigenous knowing in connection to, and with guidance from, the communities who own them. Using a respectful inquiry approach, children have the opportunity to explore mathematical concepts in Aboriginal and Torres Strait Islander lifestyles including knowledge of number, space, measurement and time. Through these experiences, children have opportunities to learn that Aboriginal peoples and Torres Strait Islander peoples have sophisticated applications of mathematical concepts which may be applied in other peoples’ ways of knowing. | | | |

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| Teaching and learning | General capabilities and cross‑curriculum priorities | Opportunities to engage with:  gc_literacygc_numeracygc_critical  Description: cc_asiaDescription: cc_sust | | Opportunities to engage with:  gc_literacygc_numeracygc_ictgc_criticalgc_personal_social  Description: cc_asiaDescription: cc_sust | | Opportunities to engage with:  gc_literacygc_numeracygc_critical | | Opportunities to engage with:  gc_literacygc_numeracygc_critical  Description: cc_asiaDescription: cc_sust | | |
| Key to general capabilities and cross-curriculum priorities | Description: gc_literacy Literacy  Description: gc_numeracy Numeracy  Description: gc_ict ICT capability  Description: gc_critical Critical and creative thinking  Description: gc_ethical Ethical behaviour  Description: gc_personal_social Personal and social capability  Description: gc_intercultural Intercultural understanding   Aboriginal and Torres Strait Islander histories and cultures  Description: cc_asia Asia and Australia’s engagement with Asia  Description: cc_sust Sustainability | | | | | | | | |
| Develop assessment | Assessment  For advice and guidelines on assessment, see [www.qsa.qld.edu.au](http://www.qsa.qld.edu.au) | An assessment folio is a targeted collection of a child’s work for ongoing review and analysis, and for reporting a child’s achievement and progress at a point in time. Administrators and teachers determine the evidence that will be collected to demonstrate a pattern of achievement within the child’s learning across the Australian Curriculum and the remaining Queensland learning areas, where applicable. | | | | | | | | |
| Term 1 | | Term 2 | | Term 3 | | Term 4 | | |
| Week | Assessment instrument | Week | Assessment instrument | Week | Assessment instrument | Week | Assessment instrument | |
| 2–10 | Observation record:   * consolidate number and place value * explore monthly and seasonal data * create data displays * investigate addition and subtraction * explore collections to at least 1000. | 2–10 | Observation record:   * consolidate number and place value * represent multiplication and division as arrays, groups and patterns * describe halves, quarters and eighths * interpret maps of familiar locations * explore geometrical and spatial reasoning * compare informal units. | 2–10 | Observation record:   * consolidate number and place value * represent multiplication and division as arrays, groups and patterns * investigate patterning * compare mass and capacity. | 2–10 | | Observation record:   * explore connections between addition and subtraction * count and order small collections * explore chance events. |
| 2–3 | Mathematical investigation (Spoken/signed)  Discuss counting in twos, fives and tens. | 4–5 | Modelling and problem-solving task (Demonstration)  Design a fruit platter (fractions). | 2–3 | Modelling and problem-solving task (Written)  Use repeated addition, groups and arrays as basis for multiplication. | 2 | | Modelling and problem-solving task (Demonstration)  Count Australian money (5s and 10s). |
| 4–6 | Supervised assessment: Short response (Written)  Use mental and written addition and subtraction strategies. | 8–9 | Modelling and problem-solving task (Demonstration)  Compare length and area of 2-D shapes using uniform informal units. | 4–5 | Supervised assessment: Short response (Written)  Identify and describe grouping patterns to solve division problems for sharing large numbers and small collections. | 3–7 | | Mathematical investigation: Graphic organiser (Written)  Identify everyday events and one categorical variable. Collect, check and classify data about questions of interest. |
| 2–10 | Mathematical investigation: Graphic organiser (Written)  Investigate months, seasons and numbers of days in each month and create a display of data. |  |  | 5–10 | Modelling and problem-solving task (Demonstration)  Compare and order mass and capacity of shapes and objects using uniform informal units. Describe the features of 3-D shapes. | 8–10 | | Supervised assessment: Short response (Written)  Identify and describe the relationship between addition and subtraction, with possible links to multiplication and division. |
|  | Year 2 Diagnostic Net continua |  | Year 2 Diagnostic Net Validation |  |  |  | |  |
| Make judgments and use feedback | Moderation | Teachers and children develop tasks.  Teachers co-mark tasks to ensure consistency of judgments. | | Teachers and children develop tasks.  Curriculum leaders randomly sample folios to check for consistency of teacher judgments.  Teachers select representative folios and meet to ensure consistency of judgments to inform future planning. | | Teachers develop and review tasks.  Teachers moderate randomly sampled folios to ensure consistency of judgments.  Teachers meet to review data collected using the Year 2 Diagnostic Net. | | School cluster moderates data collected using the Year 2 Diagnostic Net to ensure comparability of standards across the state.  Curriculum leaders and teachers meet to review samples of A–E work from across the year and moderate to ensure consistency of judgments. | | |

Year 2 Mathematics: review for balance and coverage of content descriptions

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| Number and Algebra | 1 | 2 | 3 | 4 |
| Number and place value | | | | |
| Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and ten from any starting point, then moving to other sequences [(ACMNA026)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA026) | ✓ | ✓ |  |  |
| Recognise, model, represent and order numbers to at least 1000 [(ACMNA027)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA027) | ✓ | ✓ |  |  |
| Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting [(ACMNA028)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA028) | ✓ | ✓ |  | ✓ |
| Explore the connection between addition and subtraction [(ACMNA029)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA029) | ✓ | ✓ |  | ✓ |
| Solve simple addition and subtraction problems using a range of efficient mental and written strategies [(ACMNA030)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA030) | ✓ | ✓ |  | ✓ |
| Recognise and represent multiplication as repeated addition, groups and arrays  [(ACMNA031)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA031) |  | ✓ | ✓ | ✓ |
| Recognise and represent division as grouping into equal sets and solve simple problems using these representations [(ACMNA032)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA032) |  | ✓ | ✓ | ✓ |
| Fractions and decimals | | | | |
| Recognise and interpret common uses of halves, quarters and eighths of shapes and collections [(ACMNA033)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA033) |  | ✓ |  |  |
| Money and financial mathematics | | | | |
| Count and order small collections of Australian coins and notes according to their value [(ACMNA034)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA034) |  |  |  | ✓ |
| Patterns and algebra | | | | |
| Describe patterns with numbers and identify missing elements [(ACMNA035)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA035) | ✓ | ✓ | ✓ | ✓ |
| Solve problems by using number sentences for addition or subtraction [(ACMNA036)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA036) | ✓ | ✓ | ✓ | ✓ |

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| Measurement and Geometry | 1 | 2 | 3 | 4 |
| Using units of measurement | | | | |
| Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units [(ACMMG037)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG037) |  | ✓ | ✓ |  |
| Compare masses of objects using balance scales [(ACMMG038)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG038) |  |  | ✓ |  |
| Tell time to the quarter-hour, using the language of 'past' and 'to' [(ACMMG039)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG039) |  | ✓ |  |  |
| Name and order months and seasons [(ACMMG040)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG040) | ✓ |  |  |  |
| Use a calendar to identify the date and determine the number of days in each month [(ACMMG041)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG041) | ✓ |  |  |  |
| Shape | | | | |
| Describe and draw two-dimensional shapes, with and without digital technologies [(ACMMG042)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG042) |  | ✓ |  |  |
| Describe the features of three-dimensional objects [(ACMMG043)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG043) |  | ✓ |  |  |
| Location and transformation | | | | |
| Interpret simple maps of familiar locations and identify the relative positions of key features  [(ACMMG044)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG044) |  | ✓ |  |  |
| Investigate the effect of one-step slides and flips with and without digital technologies [(ACMMG045)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG045) |  | ✓ |  |  |
| Identify and describe half and quarter turns [(ACMMG046)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG046) |  | ✓ |  |  |

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| Statistics and Probability | 1 | 2 | 3 | 4 |
| Chance | | | | |
| Identify practical activities and everyday events that involve chance. Describe outcomes as ‘likely’ or ‘unlikely’ and identify some events as ‘certain’ or ‘impossible’ [(ACMSP047)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMSP047) |  |  |  | ✓ |
| Data representation and interpretation | | | | |
| Identify a question of interest based on one categorical. Gather data relevant to the question  [(ACMSP048)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMSP048) | ✓ |  |  | ✓ |
| Collect, check and classify data [(ACMSP049)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMSP049) | ✓ |  |  | ✓ |
| Create displays of data using lists, table and picture graphs and interpret them [(ACMSP050)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMSP050) | ✓ |  |  | ✓ |

Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), *Australian Curriculum v3.0: Mathematics for Foundation–10*, <www.australiancurriculum.edu.au/Mathematics/Curriculum/F-10>.