Year 3 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 representations with number sequences, partitioning and combining numbers flexibly, representing unit fractions, using appropriate language to communicate times, and identifying environmental symmetry  *Fluency* includes recalling multiplication facts, using familiar metric units to order and compare objects, identifying and describing outcomes of chance experiments, interpreting maps and communicating positions  *Problem* *Solving* includes formulating and modelling authentic situations involving planning methods of data collection and representation, making models of three-dimensional objects and using number properties to continue number patterns  *Reasoning* includes using generalising from number properties and results of calculations, comparing angles, creating and interpreting variations in the results of data collections and data displays. | | | |
| Achievement standard | By the end of Year 3, students recognise the connection between addition and subtraction and solve problems using efficient strategies for multiplication. They model and represent unit fractions. They represent money values in various ways. Students identify symmetry in the environment. They match positions on maps with given information. Students recognise angles in real situations. They interpret and compare data displays.  Students count to and from 10 000. They classify numbers as either odd or even. They recall addition and multiplication facts for single digit numbers. Students correctly count out change from financial transactions. They continue number patterns involving addition and subtraction. Students use metric units for length, mass and capacity. They tell time to the nearest minute. Students make models of three-dimensional objects. Students conduct chance experiments and list possible outcomes. They carry out simple data investigations for categorical variables. | | | |
| 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 students will:   * investigate number patterns with addition and subtraction * investigate odd and even numbers * apply place value to 5000 * recognise and explain the connection between addition and subtraction * recall and use single-digit addition facts * represent money and count change * measure, order and compare length, mass and capacity * tell time to the minute. | During this term students will:   * partition and regroup to 5000 * recall and use single-digit addition facts * recall and use multiplication facts of 2, 3, 5 and 10 * model and represent unit fractions including 1/2, 1/4, 1/3 and 1/5 * make 3-D objects * conduct chance experiments * identify data sources * collect and display data. | During this term students will:   * apply place value to 10000 * recall and use multiplication facts and related division facts * solve problems involving multiplication * connect multiples of fractions * measure, order and compare length, mass and capacity * create and interpret simple grid maps * identify data sources * collect, display and interpret data. | **Exemplar unit: Exploring shapes and angles**  During this term students will:   * partition and regroup to 10 000 * solve problems involving multiplication * conduct simple money transactions to the nearest five cents * locate, describe and identify shapes and symmetry and angles of turn * recognise and model the key features of 3‑D objects * use time units * conduct chance experiments, recognising variation in results * interpret and compare data. |
| Aboriginal and Torres Strait Islander perspectives | Mathematics provides opportunities for students 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, students 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, students 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  cc_asia | | Opportunities to engage with:  gc_literacygc_numeracygc_ictgc_critical  cc_asia | | Opportunities to engage with:  gc_literacygc_numeracygc_ictgc_critical  cc_asia | | Opportunities to engage with:  gc_literacygc_numeracygc_ictgc_criticalgc_intercultural  cc_asia | | |
| Key to general capabilities and cross-curriculum priorities | gc_literacy Literacy  gc_numeracy Numeracy  gc_ict ICT capability  gc_critical Critical and creative thinking  gc_ethical Ethical behaviour  gc_personal_social Personal and social capability  gc_intercultural Intercultural understanding   Aboriginal and Torres Strait Islander histories and cultures  cc_asia Asia and Australia’s engagement with Asia  cc_sust Sustainability | | | | | | | | |
| Develop assessment | Assessment  For advice and guidelines on assessment, see [www.qsa.qld.edu.au](http://www.qsa.qld.edu.au) | A folio is a targeted selection of evidence of student learning and includes a range of responses to a variety of assessment techniques. A folio is used to make an overall on-balance judgment about student achievement and progress at appropriate points and informs the reporting process. | | | | | | | | |
| Term 1 | | Term 2 | | Term 3 | | Term 4 | | |
| Week | Assessment instrument | Week | Assessment instrument | Week | Assessment instrument | Week | Assessment instrument | |
| 1 | Initial assessment  Identify Year 3 consolidation needs and learning goals (e.g. KWL, teacher/student conference). | 2–10 | Observation record:   * apply place value to partition and regroup * investigate addition and subtraction facts * recall multiplication facts * use different media to represent fractions. | 2–10 | Observation record:   * apply place value * calculate multiplication facts and problems * explore fractions and their multiples * apply place value to partition and regroup numbers to 10 000. | 2–10 | | Observation record:   * apply place value to partition and regroup numbers to 10 000 * explore money with change to 5 cents * solve multiplication problems. |
| 2–10 | Observation record:   * apply place value * investigate addition and subtraction facts * make connections between addition and subtraction. | 3 | Modelling and problem-solving task (Demonstration)  Model 3-D objects. | 3–4 | Modelling and problem solving task: Using a map (Written)  Show position on a map. | 4–5 | | Mathematical investigation: Graphic organiser (Written)  Represent and interpret data from a chance experiment. |
| 3–4 | Modelling and problem-solving task (Spoken/signed)  Explain the concept of odd and even. | 6–7 | Mathematical investigation: Graphic organiser (Written)  Display data from chance experiments. | 8–9 | Modelling and problem-solving task (Demonstration)  Measure, order and compare length, mass and capacity. | 8–9 | | Mathematical investigation: Journal (Written)  Investigate shapes and angles.  The assessment package *Exploring 3D objects, angles and symmetry* in the QSA Assessment Bank could be used in this unit. |
|  |  |  | **NAPLAN** |  |  |  | |  |
| Make judgments and use feedback | Moderation | Teachers develop tasks and plan units.  Teachers moderate tasks. | | Curriculum leaders randomly sample folios to check for consistency of teacher judgments.  Teachers moderate representative folios. | | Teachers cross-mark sample folios to ensure consistency of judgments and task development. | | Curriculum leaders and teachers randomly sample folios. | | |

Year 3 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 the conditions required for a number to be odd or even and identify odd and even numbers [(ACMNA051)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA051) | ✓ |  |  |  |
| Recognise, model, represent and order numbers to at least 10 000 [(ACMNA052)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA052) | ✓ | ✓ | ✓ | ✓ |
| Apply place value to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems [(ACMNA053)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA053) | ✓ | ✓ | ✓ | ✓ |
| Recognise and explain the connection between addition and subtraction  [(ACMNA054)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA054) | ✓ |  |  |  |
| Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation [(ACMNA055)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA055) | ✓ | ✓ |  |  |
| Recall multiplication facts of two, three, five and ten and related division facts [(ACMNA056)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA056) |  | ✓ | ✓ |  |
| Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies [(ACMNA057)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA057) |  |  | ✓ | ✓ |
| Fractions and decimals | | | | |
| Model and represent unit fractions including 1/2, 1/4, 1/3, 1/5 and their multiples to a complete whole [(ACMNA058)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA058) |  | ✓ | ✓ |  |
| Money and financial mathematics | | | | |
| Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents  [(ACMNA059)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA059) | ✓ |  |  | ✓ |
| Patterns and algebra | | | | |
| Describe, continue, and create number patterns resulting from performing addition or subtraction [(ACMNA060)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA060) | ✓ |  |  |  |

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| **Measurement and Geometry** | **1** | **2** | **3** | **4** |
| Using units of measurement | | | | |
| Measure, order and compare objects using familiar metric units of length, mass and capacity [(ACMMG061)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG061) | ✓ |  | ✓ |  |
| Tell time to the minute and investigate the relationship between units of time [(ACMMG062)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG062) | ✓ |  |  | ✓ |
| Shape | | | | |
| Make models of three-dimensional objects and describe key features [(ACMMG063)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG063) |  | ✓ |  | ✓ |
| Location and transformation | | | | |
| Create and interpret simple grid maps to show position and pathways [(ACMMG065)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG065) |  |  | ✓ |  |
| Identify symmetry in the environment [(ACMMG066)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG066) |  |  |  | ✓ |
| Geometric reasoning | | | | |
| Identify angles as measures of turn and compare angle sizes in everyday situations [(ACMMG064)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMMG064) |  |  |  | ✓ |

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| **Statistics and Probability** | **1** | **2** | **3** | **4** |
| Chance | | | | |
| Conduct chance experiments, identify and describe possible outcomes and recognise variation in results [(ACMSP067)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMSP067) |  | ✓ |  | ✓ |
| Data representation and interpretation | | | | |
| Identify questions or issues for categorical variables. Identify data sources and plan methods of data collection and recording [(ACMSP068)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMSP068) |  | ✓ | ✓ |  |
| 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 [(ACMSP069)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMSP069) |  | ✓ | ✓ |  |
| Interpret and compare data displays [(ACMSP070)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMSP070) |  | ✓ | ✓ | ✓ |

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