*Mapping the Mathematics Online Interview to the AusVELS: Mathematics*

The following table links tasks from the Mathematics Online Interview to the Points of Growth (PoG), the Early Numeracy Research Project (ENRP) Growth Points (GP) and  the achievement standard, content description and levels Foundation to 5 of the *AusVELS: Mathematics* where applicable. A list of the AusVELS Mathematics content strands, sub strands and descriptions that do not directly link to Mathematics Online Interview have also been included (Appendix 1)

The table enables mapping of student responses in the Mathematics Online Interview to the AusVELS Mathematics.

Interpreting the table:

* Blank cells indicate no obvious match from the task to the AusVELS Mathematics.
* Tasks in the First Year Detour are mapped to the AusVELS Mathematics and Points of Growth only, as these tasks do not link to Growth Points.

Further details on the Mathematics Content, Achievement Standards and Progression point examples can be accessed from the AusVELS website at: <http://ausvels.vcaa.vic.edu.au/Mathematics/>

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| Section A: COUNTING | | | | | | | |
| **1** | **Teddy task** | PoG 12. Confidently count a collection of around 20 objects | GP 2. Counting collections | **F** | **Number and Algebra**  Students connect number names and numerals with sets of up to 20 elements, estimate the size of these sets, and use counting strategies to solve problems that involve comparing, combining and separating these sets. Students order the first 10 elements of a set. | **Number and Place Value**  Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point |
| **1** | **Teddy task (successfully counts 10 objects but unsuccessful beyond 10)** | PoG 1. Know some number names but have difficulty stating them in sequence above 10 |  |
| PoG 2. Rote count the number sequence to 10 but are unable to reliably count a collection of that size |
| PoG 7. Count a collection of around 10 objects |
| **2a only** | **Counting forwards, backwards, and breaking the sequence** | PoG 11. Rote count the number sequence to at least 20 | GP 1. Rote counting | **F** | **Number and Place Value**  Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point |
| **2** | **Counting forwards, backwards, and breaking the sequence**  **(a, b, c, d, e)** | PoG 18. Count by 1s forward/backward from various starting points between 1 and 100 | GP 3. Counting by 1s (forward/  backward, including variable starting points; before/after) |
| **3** | **Before and after task (a, b)** | PoG 19. Know numbers before and after a given number up to 100 | **1** | **Number and Algebra**  Students count to and from 100 and locate these numbers on a number line. They partition numbers using place value and carry out simple additions and subtractions, using counting strategies. | **Number and place value**  Develop confidence with [number](http://www.australiancurriculum.edu.au/Glossary?a=M&t=number) sequences to and from 100 by ones from any starting [point](http://www.australiancurriculum.edu.au/Glossary?a=M&t=point). Skip count by twos, fives and tens starting from zero |
| **4** | **Counting from 0 by 10s, 5s, and 2s** | PoG 22. Count from 0 by 2s, 5s and 10s to a given target | GP 4. Counting from 0 by 10s, 5s, and 2s |  |  |
| **5** | **Counting from x by 10s and 5s** | PoG 23. Count from any two-digit number by 10s | GP 5. Counting from x (x>0) by 2s, 5s, and 10s | **2** | **Number and Algebra**  Students recognise the connection between addition and subtraction, and solve problems using efficient strategies for multiplication with and without the need for digital technology. Students recall addition and multiplication facts for single digit numbers. They classify numbers as either odd or even, continue number patterns involving addition or subtraction, and explore simple number sequences based on multiples. | **Number and place value**  Investigate [number](http://www.australiancurriculum.edu.au/Glossary?a=M&t=number) sequences, initially those increasing and decreasing by twos, threes, fives and ten from any starting [point](http://www.australiancurriculum.edu.au/Glossary?a=M&t=point), then moving to other sequences. |
| PoG 28. Given a non-zero starting point, can count by 2s, 5s, and 10s to a given target |
| **6** | **Counting from x by a single digit number** | PoG 33. Count from a non-zero starting point by any single-digit number | GP 6. Extending and applying counting skills |
| **7** | **Counting money** | PoG 34. Can apply counting skills in practical tasks | **2** | **Money and financial maths**  Count and order small collections of Australian coins and notes according to their value. |
| **First Year Detour**  **There are no growth points for the First Year Detour tasks as indicated by the alternative shading in the middle column** | | | | | | |
| **D1** | **Simpler counting tasks / Conservation**  **(a, b, d, e)** | PoG 3. Can conserve number  PoG 8. Recognise models of numbers from 0–10 |  | **F** | **Number and Algebra**  Students connect number names and numerals with sets of up to 20 elements, estimate the size of these sets, and use counting strategies to solve problems that involve comparing, combining and separating these sets. Students order the first 10 elements of a set. | **Number and place value**  Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond. |
| **D1c** | **More or Less** | PoG 9. Compare two small collections | **Number and place value**  Compare, order and make correspondences between collections, initially to 20, and explain reasoning |
| **D2a**  **only** | **Location**  **(a)** | PoG 59. Understand some simple everyday location words | **Measurement and Geometry**  Students use simple statements and gestures to describe location. | **Location and transformation**  Describe position and movement |
| **D2** | **Pattern (b, c, d, e)** | PoG 5. Recognise simple patterns | **Number and Algebra**  Students connect number names and numerals with sets of up to 20 elements, estimate the size of these sets, and use counting strategies to solve problems that involve comparing, combining and separating these sets. Students order the first 10 elements of a set. | **Patterns and algebra**  Sort and classify familiar objects and explain the basis for these classifications. Copy, continue and create patterns with objects and drawings |
| **D2f** | **Ordinal Number**  **(f)** | PoG 6. Can place objects in order 1 st  to 5th |
| **D3** | **Subitising / Matching numerals to quantities / Ordering / One to One Correspondence / Part-part-whole (a, b, c, d, e, h, i)** | PoG 4. Read and record some single digit numbers  PoG 8. Recognise models of numbers from 0-10 | **Number and place value**  Subitise small collections of objects  **Number and place value**  Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond. |
| **D3f & g** | **Before/after**  **(f, g)** | PoG 10. Know numbers before and after a given number to 10 |
| **D3 i & j** | **Ordering smallest to largest**  **(i & j)** | PoG 41. Compare, order and match objects by length |  | **F** | **Measurement and Geometry**  Students identify measurement attributes in practical situations and compare lengths, masses and capacities of familiar objects. | **Using units of measurement**  Use direct and indirect comparisons to decide which is longer, heavier or holds more, and explain reasoning in everyday language |
| **Section B: PLACE VALUE** | | | | | | |
| **8**  **9**  **10** | **All 1-digit numbers in:**  **-Reading numbers task**  **-Calculator task**  **-Ordering task** | PoG 13. Read, record, interpret and order single-digit numbers | GP 1. Reading, writing, interpreting, and ordering single digit numbers | **F** | **Number and Algebra**  Students connect number names and numerals with sets of up to 20 elements, estimate the size of these sets, and use counting strategies to solve problems that involve comparing, combining and separating these sets. Students order the first 10 elements of a set. | **Number and place value**  Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond. |
| **8**  **9**  **10** | **All 2 digit numbers** in:  **-Reading numbers task**  **-Calculator task**  **-Ordering task** | PoG 20. Read, record, interpret and order two-digit numbers | GP 2. Reading, writing, interpreting, and ordering two-digit numbers | **1** | **Number and Algebra**  Students count to and from 100 and locate these numbers on a number line. They partition numbers using place value and carry out simple additions and subtractions, using counting strategies. | **Number and place value**  Recognise, model, read, write and order numbers to at least 100. *Locate* *these numbers on a* [*number line*](http://www.australiancurriculum.edu.au/Glossary?a=M&t=number+line) |
| **11** | **Bundling task** | **Number and place value**  Count collections to 100 by [partitioning](http://www.australiancurriculum.edu.au/Glossary?a=M&t=partitioning) numbers using [place value](http://www.australiancurriculum.edu.au/Glossary?a=M&t=place+value) |
| **12** | **2-Digit Chart task** | **Patterns and algebra**  Investigate and describe [number](http://www.australiancurriculum.edu.au/Glossary?a=M&t=number) patterns formed by skip counting *and patterns with objects* |
| **8**  **9**  **10**  **13** | **All 3 digit numbers in:**  **-Reading numbers task**  **-Calculator task**  **-Ordering task**  **-3-Digit Chart task** | PoG 24. Read, record, interpret and order three-digit numbers | GP 3. Reading, writing, interpreting, and ordering three-digit numbers | **2** | **Number and Algebra**  Students recognise the connection between addition and subtraction, and solve problems using efficient strategies for multiplication with and without the need for digital technology. Students recall addition and multiplication facts for single digit numbers. They classify numbers as either odd or even, continue number patterns involving addition or subtraction, and explore simple number sequences based on multiples.  Student count and order numbers to and from 10,000. They recognise the connection between addition and subtraction, and solve problems using efficient strategies for multiplication with and without the use of digital technology. Students recall additional and multiplication facts for single-digit numbers. They classify numbers as either odd or even, continue number patterns involving addition or subtraction, and explore simple number sequences based on multiples. | **Number and place value**  Recognise, *model, represent* and order numbers to at least 1000 |
| **8**  **9**  **10**  **14** | **All 4 digit numbers in:**  **-Reading numbers task**  **-Calculator task**  **-Ordering task**  **-Ten more** | PoG 29. Read, record, interpret and order numbers beyond 1000 | GP 4. Reading, writing, interpreting, and ordering numbers beyond 1000 | **3** | **Number and Algebra**  Student count and order numbers to and from 10,000. They recognise the connection between addition and subtraction, and solve problems using efficient strategies for multiplication with and without the use of digital technology. Students recall additional and multiplication facts for single-digit numbers. They classify numbers as either odd or even, continue number patterns involving addition or subtraction, and explore simple number sequences based on multiples. | **Number and place value**  Recognise, *model, represent* and order numbers to at least 10 000 |
| **14**  **15** | **Ten more**  **One hundred less** |  |  | **3** | **Number and place value**  Apply [place value](http://www.australiancurriculum.edu.au/Glossary?a=M&t=place+value) to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems |
| 15  16  17 | **One hundred less**  **Sorting the capital cities (a, b, c, d, e)**  **Interpreting the number line**  **(a, b, c, d)** | PoG 35. Can extend and apply knowledge of place value in solving problems | GP 5. Extending and applying place value knowledge | **3** | **Number and place value**  Recognise, model, represent and order numbers to at least 10,000 |
| **3.5** | **Number and place value**  Recognise, *represent* and order numbers to at least tens of thousands |
| **17**  **a & c only** | **Interpreting the number line**  **(a & c only)** |  |  | **1** | **Number and Algebra**  Students count to and from 100 and locate these numbers on a number line. They partition numbers using place value and carry out simple additions and subtractions, using counting strategies. | **Number and place value**  Recognise, *model, read, write and order numbers* to at least 100. Locate these numbers on a [number line](http://www.australiancurriculum.edu.au/Glossary?a=M&t=number+line) |

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| Section C: STRATEGIES for ADDITION and SUBTRACTION | | | | | | |
| **18** | **Counting on**  **(a, b, c) or d** | PoG 14. Count all to find the total of two collections | GP 1. Count all | **F** | **Number and Algebra**  Students connect number names and numerals with sets of up to 20 elements, estimate the size of these sets, and use counting strategies to solve problems that involve comparing, combining and separating these sets. Students order the first 10 elements of a set. | **Number and place value**  Represent practical situations to model addition *and sharing* |
| **18** | **Counting on**  **(a, b, c)** | PoG 16. Count on from one number to find the total of two collections | GP 2. Count on | **1** | **Number and Algebra**  Students count to and from 100 and locate these numbers on a number line. They partition numbers using place value and carry out simple additions and subtractions, using counting strategies. | **Number and place value**  Represent and solve simple addition *and subtraction* problems using a range of strategies including [counting on](http://www.australiancurriculum.edu.au/Glossary?a=M&t=counting+on), [*partitioning*](http://www.australiancurriculum.edu.au/Glossary?a=M&t=partitioning) *and rearranging parts* |
| **19**  **20** | **- Counting back**  **- Counting down to/ counting up from** | PoG 17. Choose appropriately from strategies including count back, count down to and count up from in subtraction situations | GP 3. Count back/count down to/count up from | **1** | **Number and place value**  Represent and solve*simple addition and*subtraction problems using a range of strategies *including* [*counting on*](http://www.australiancurriculum.edu.au/Glossary?a=M&t=counting+on)*,* [*partitioning*](http://www.australiancurriculum.edu.au/Glossary?a=M&t=partitioning) *and rearranging parts* |
| **21** | **Basic strategies**  **(a, c, e only)** | PoG 21. Add and subtract single digit numbers using basic number facts and strategies |  | **2** | **Number and Algebra**  Students recognise the connection between addition and subtraction, and solve problems using efficient strategies for multiplication with and without the need for digital technology. Students recall addition and multiplication facts for single digit numbers. They classify numbers as either odd or even, continue number patterns involving addition or subtraction, and explore simple number sequences based on multiples. | **Number and place value**  Explore the connection between addition and subtraction |
| **21** | **Basic strategies**  **(a, b, c, d, e)** | PoG 25. In addition or subtraction problems, use strategies such as doubles, commutativity, adding 10, tens facts, and other known facts | GP 4. Basic strategies | **2** | **Number and place value**  Solve simple addition and subtraction problems using a range of efficient mental and written strategies |
| **22** | **Derived strategies**  **(a, b, c, d, e)** | PoG 30. In addition or subtraction problems, use strategies such as near doubles, adding 9, build to next ten, fact families and intuitive strategies | GP 5. Derived strategies | **3** | **Number and Algebra**  Student count and order numbers to and from 10,000. They recognise the connection between addition and subtraction, and solve problems using efficient strategies for multiplication with and without the use of digital technology. Students recall additional and multiplication facts for single-digit numbers. They classify numbers as either odd or even, continue number patterns involving addition or subtraction, and explore simple number sequences based on multiples. | **Number and place value**  Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation  **Number and place value**  Recognise and explain the connection between addition and subtraction |
| **23**  **24**  **25**  **26** | **Multi-digit strategies**  **(a, b, c, d, e)**  **How many digits?**  **(a, b) (c, d)**  **Estimating and calculating addition**  **(a, b, c)**  **Estimating and calculating subtraction**  **(a, b, c)** | PoG 36. Given a range of tasks (including multi-digit numbers), can solve them mentally, using the appropriate strategies and a clear understanding of key concepts | GP 6. Extending and applying addition and subtraction using basic, derived and intuitive strategies |  |

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| Section D: STRATEGIES for MULTIPLICATION and DIVISION | | | | | | |
| **27** | **Teddy cars**  **(a, b, c)** | PoG 15. Find the total in a multiple group situation referring to individual items only | GP 1. Counting group items as ones |  |  |  |
| **27** | **Teddy cars**  **(a, b)** | PoG 26. Model all objects to solve multiplicative and sharing situations | GP 2. Modelling multiplication and division (all objects perceived) | **2** | **Number and Algebra**  Students recognise the connection between addition and subtraction, and solve problems using efficient strategies for multiplication with and without the need for digital technology. Students recall addition and multiplication facts for single digit numbers. They classify numbers as either odd or even, continue number patterns involving addition or subtraction, and explore simple number sequences based on multiples. | **Number and place value**  Recognise and represent [multiplication](http://www.australiancurriculum.edu.au/Glossary?a=M&t=multiplication+) as repeated addition, groups *and arrays* |
| **28** | **Sharing teddies on the mats**  **(a, b)** | **F** | **Number and Algebra**  Students connect number names and numerals with sets of up to 20 elements, estimate the size of these sets, and use counting strategies to solve problems that involve comparing, combining and separating these sets. Students order the first 10 elements of a set. | **Number and place value**  Represent practical situations to model*addition and* sharing |
| Recognise and represent division as grouping into equal sets and solve simple problems using these representations |
| **29** | **Tennis balls task**  **(a, b, c)** | PoG 27. Solve multiplication and division problems where objects are not all modelled or perceived | GP 3. Abstracting multiplication and division | **3** | **Number and Algebra**  Student count and order numbers to and from 10,000. They recognise the connection between addition and subtraction, and solve problems using efficient strategies for multiplication with and without the use of digital technology. Students recall additional and multiplication facts for single-digit numbers. They classify numbers as either odd or even, continue number patterns involving addition or subtraction, and explore simple number sequences based on multiples. | **Number and place value**  *Represent and* solve problems involving [multiplication](http://www.australiancurriculum.edu.au/Glossary?a=M&t=multiplication+) using efficient mental *and written* strategies *and appropriate digital technologies* |
| **30** | **Dot array task**  **(a, b, c)** |  |

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| 31 | Teddies at the movies |  |  | 4 | Number and Algebra  Students recall multiplication facts to 10 x 10 and related division facts. They choose appropriate strategies for calculations involving multiplication and division, with and without the use of digital technology, and estimate answers accurately enough for the context. Students solve simple purchasing problems with and without the use of digital technology. They locate familiar fractions on a number line, recognize common equivalent fractions in familiar contexts and make connections between fractions and decimals notations up to two decimal places. Students identify unknown quantities in number sentences. They use the properties of odd and even numbers and describe number patterns resulting from multiplication. Students continue number sequences involving multiples of single-digit numbers and unit fractions, and locate them on a number line. | Number and place value  Develop efficient mental *and written* strategies *and use appropriate digital technologies for* [*multiplication*](http://www.australiancurriculum.edu.au/Glossary?a=M&t=multiplication+) *and* for division where there is no [remainder](http://www.australiancurriculum.edu.au/Glossary?a=M&t=remainder) |
| **32** | **Multiplication problems**  **(a, b, c, d, e, f)** | PoG 31. Can solve a range of multiplication problems using strategies such as commutativity, skip counting and building up from known facts | GP 4. Basic, derived and intuitive strategies for multiplication | **3** | **Number and Algebra**  Student count and order numbers to and from 10,000. They recognise the connection between addition and subtraction, and solve problems using efficient strategies for multiplication with and without the use of digital technology. Students recall additional and multiplication facts for single-digit numbers. They classify numbers as either odd or even, continue number patterns involving addition or subtraction, and explore simple number sequences based on multiples. | **Number and place value**  *Represent and* solve problems involving [multiplication](http://www.australiancurriculum.edu.au/Glossary?a=M&t=multiplication+) using efficient mental *and written strategies and appropriate digital technologies*  Recall [multiplication](http://www.australiancurriculum.edu.au/Glossary?a=M&t=multiplication+) facts of two, three, five and ten *and related division facts* |
| **33** | **Division problems**  **(a, b, c, d, e, f)** | PoG 32. Can solve a range of division problems using strategies such as fact families and building up from known facts | GP 5. Basic, derived and intuitive strategies for division | **3** | **Number and Algebra**  Student count and order numbers to and from 10,000. They recognise the connection between addition and subtraction, and solve problems using efficient strategies for multiplication with and without the use of digital technology. Students recall additional and multiplication facts for single-digit numbers. They classify numbers as either odd or even, continue number patterns involving addition or subtraction, and explore simple number sequences based on multiples. | **Number and place value**  Recall [multiplication](http://www.australiancurriculum.edu.au/Glossary?a=M&t=multiplication+) facts of two, three, five and ten and related division facts |
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| **4** | **Number and Algebra**  **S**tudents recall multiplication facts to 10 x 10 and related division facts. They choose appropriate strategies for calculations involving multiplication and division, with and without the use of digital technology, and estimate answers accurately enough for the context. Students solve simple purchasing problems with and without the use of digital technology. They locate familiar fractions on a number line, recognize common equivalent fractions in familiar contexts and make connections between fractions and decimals notations up to two decimal places. Students identify unknown quantities in number sentences. They use the properties of odd and even numbers and describe number patterns resulting from multiplication. Students continue number sequences involving multiples of single-digit numbers and unit fractions, and locate  them on a number line. | **Number and place value**  Develop efficient mental*and written*strategies *and use appropriate digital technologies for* [*multiplication*](http://www.australiancurriculum.edu.au/Glossary?a=M&t=multiplication+) *and* for division where there is no [remainder](http://www.australiancurriculum.edu.au/Glossary?a=M&t=remainder) |
| **34** | **Off to the circus** | PoG 37. Solve a range of multiplication and division problems (including multi-digit numbers) in practical contexts | GP 6. Extending and applying multiplication and division | **5** | **Number and Algebra**  Students solve simple problems involving the four operations using a range of strategies including digital technology. They estimate to check the reasonableness of answers and approximate answers by rounding. Students identify and describe factors and multiples. They explain plans for simple budgets. Students order decimals and unit fractions and locate them on a number line. Students add and subtract fractions with the same denominator. They find unknown quantities in number sentences and continue patterns by adding or subtracting fractions and decimals. | **Number and place value**  Solve problems involving division by a one digit [number](http://www.australiancurriculum.edu.au/Glossary?a=M&t=number), including those that result in a [remainder](http://www.australiancurriculum.edu.au/Glossary?a=M&t=remainder) |
| **35** | **Sharing our money** | **4** | **Number and Algebra**  **S**tudents recall multiplication facts to 10 x 10 and related division facts. They choose appropriate strategies for calculations involving multiplication and division, with and without the use of digital technology, and estimate answers accurately enough for the context. Students solve simple purchasing problems with and without the use of digital technology. They locate familiar fractions on a number line, recognize common equivalent fractions in familiar contexts and make connections between fractions and decimals notations up to two decimal places. Students identify unknown quantities in number sentences. They use the properties of odd and even numbers and describe number patterns resulting from multiplication. Students continue number sequences involving multiples of single-digit numbers and unit fractions, and locate them on a number line. | **Number and place value**  Develop efficient mental and written strategies *and use appropriate digital technologies* for [multiplication](http://www.australiancurriculum.edu.au/Glossary?a=M&t=multiplication+) and for division where there is no [remainder](http://www.australiancurriculum.edu.au/Glossary?a=M&t=remainder) |
| **36** | **In your head**  **(a, b)** | **Patterns and algebra**  Use equivalent [number](http://www.australiancurriculum.edu.au/Glossary?a=M&t=number) sentences involving [multiplication](http://www.australiancurriculum.edu.au/Glossary?a=M&t=multiplication+) and division to find unknown quantities |
| **37** | **Missing number**  **(a, b, c)** |  |  | **5** | **Number and Algebra**  Students solve simple problems involving the four operations using a range of strategies including digital technology. They estimate to check the reasonableness of answers and approximate answers by rounding. Students identify and describe factors and multiples. They explain plans for simple budgets. Students order decimals and unit fractions and locate them on a number line. Students add and subtract fractions with the same denominator. They find unknown quantities in number sentences and continue patterns by adding or subtracting fractions and decimals. |  |

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| Section E: TIME | | | | | | |
| **38** | **My clock** | PoG 40. Describe at least one feature and one purpose of clockfaces | GP 1. Awareness of time, its descriptive language, and some features of clockfaces | **F** | **Measurement and Geometry** Students identify measurement attributes in practical situations and compare lengths, masses and capacities of familiar objects. They order events, explain their duration, and match days of the week to familiar events. Students identify simple shapes in their environment and sort shapes by their common and distinctive features. They use simple statements and gestures to describe location. |  |
| **39a**  **only** | **Telling the time**  **(a)** | PoG 45. Know clock times to the hour |  | **1** | **Measurement and Geometry** Students use informal units of measurement to order objects based on length and capacity. They tell time to the half-hour and explain time durations. Students describe two-dimensional shapes and three-dimensional objects. They use the language of distance and direction to move from place to place. |  |
| **39**  **a & b** | **Telling the time**  **(a, b)** |  | GP 2. Knowing some clock times, some days of week and months of year, and relating key events (personal, community) to these |  |  |  |
| **40**  **a & b** | **The days and months (a, b)** | **F** | **Measurement and Geometry** Students identify measurement attributes in practical situations and compare lengths, masses and capacities of familiar objects. They order events, explain their duration, and match days of the week to familiar events. Students identify simple shapes in their environment and sort shapes by their common and distinctive features. They use simple statements and gestures to describe location. | **Using units of measurement**  Connect days of the week to familiar events and actions |
| **39b**  **only** | **Telling the time**  **(b)** | PoG 48. Know clock times to half-hour, all days of week and months of year (including order) | GP 3. Knowing clock times to half-hour, all days of week and months of year (including order) | **1** | **Measurement and Geometry** Students use informal units of measurement to order objects based on length and capacity. They tell time to the half-hour and explain time durations. Students describe two-dimensional shapes and three-dimensional objects. They use the language of distance and direction to move from place to place. | **Using units of measurement**  Tell time to the half-hour |
| **40** | **The days and months**  **(a, b, c)** | **2** | **Measurement and Geometry** Students order shapes and objects, using informal units for a range of measures. They tell time to the quarter hour and use a calendar to identify the date, days, weeks and months included in seasons and other events. Students draw two-dimensional shapes, specify their features and explain the effects of one-0step transformations. They recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. | **Using units of measurement**  Name and order months *and seasons* |
| **39c**  **only** | **Telling the time**  **(c)** | PoG 52. Read analogue clock times to nearest five minutes and has good working facility with calendars | GP 4. Facility with clocks and calendars | **2** | **Measurement and Geometry** Students order shapes and objects, using informal units for a range of measures. They tell time to the quarter hour and use a calendar to identify the date, days, weeks and months included in seasons and other events. Students draw two-dimensional shapes, specify their features and explain the effects of one-0step transformations. They recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. | **Using units of measurement**  Tell time to the quarter-hour, using the language of 'past' and 'to' |
| **41** | **Calendar tasks**  **(a, b, c, d, e)** | **2** | **Measurement and Geometry** Students order shapes and objects, using informal units for a range of measures. They tell time to the quarter hour and use a calendar to identify the date, days, weeks and months included in seasons and other events. Students draw two-dimensional shapes, specify their features and explain the effects of one-0step transformations. They recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. | **Using units of measurement**  Use a calendar to identify the date and determine the [number](http://www.australiancurriculum.edu.au/Glossary?a=M&t=number) of days in each month |
| **42** | **Duration tasks**  **(a, b)** | PoG 55. Solve a range of problems involving duration, and digital and analogue time to the nearest minute | GP 5. Extending and applying knowledge, skills and concepts with time | **4** | **Measurement and Geometry** Students compare areas of regular and irregular shapes, using informal units. They solve problems involving time duration. Students use scaled instruments to measure length, angle, area, mass, capacity and temperature of shapes and objects. They convert between units of time. Students create symmetrical simple and composite shapes and patterns, with and without the use of digital technology. They classify angles in relation to a right angle. Students interpret information contained in maps. | **Using units of measurement**  Use am and pm notation and solve simple time problems  Convert between units of time |
| **43** | **TV guide** |
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| **444** | **Linking digital and analogue time** |  |  | **3**  **3** | **Measurement and Geometry** Students use metric units for length, mass and capacity. They tell time to the nearest minute. Students identify symmetry in natural and constructed environments. They use angle size as a measure of turn in real situations and make models of three-dimensional objects. Students match position on maps with given information and create simple maps. | **Using units of measurement**  Tell time to the minute and investigate the relationship between units of time |

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| Section F: LENGTH MEASUREMENT | | | | | | |
| **45** | **The string and the stick**  **(a, b)** | PoG 38. Have awareness of the attribute of length and its descriptive language | GP 1. Awareness of the attribute of length and use of descriptive language | **F** | **Measurement and Geometry** Students identify measurement attributes in practical situations and compare lengths, masses and capacities of familiar objects. They order events, explain their duration, and match days of the week to familiar events. Students identify simple shapes in their environment and sort shapes by their common and distinctive features. They use simple statements and gestures to describe location. | **Using units of measurement**  Use direct *and indirect* comparisons to decide which is longer, *heavier or holds more*,and explain reasoning in everyday language |
| **45** | **The string and the stick**  **(a, b, c)** | PoG 41. Compare, order and match objects by length | GP 2. Comparing, ordering, & matching with the attribute of length | **2** | **Measurement and Geometry** Students order shapes and objects, using informal units for a range of measures. They tell time to the quarter hour and use a calendar to identify the date, days, weeks and months included in seasons and other events. Students draw two-dimensional shapes, specify their features and explain the effects of one-0step transformations. They recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. | **Using units of measurement**  Compare and order *several shapes and* objects based on length, *area,* [*volume*](http://www.australiancurriculum.edu.au/Glossary?a=M&t=volume) *and* [*capacity*](http://www.australiancurriculum.edu.au/Glossary?a=M&t=capacity) using appropriate uniform informal units |
| **46** | **The straw and the paper clips**  **(a, b)** | PoG 44. Use informal units to estimate and measure length | GP 3. Quantifying length accurately, using units and attending to measurement principles | **1** | **Measurement and Geometry** Students use informal units of measurement to order objects based on length and capacity. They tell time to the half-hour and explain time durations. Students describe two-dimensional shapes and three-dimensional objects. They use the language of distance and direction to move from place to place. | **Using units of measurement**  Measure and compare the lengths *and capacities* of pairs of objects using uniform informal units |
| **47** | **Using the ruler**  **(a, b)** | PoG 46. Use uniform units appropriately to quantify length, assigning number and unit to the measure | GP 4. Choosing standard units for estimating and measuring length, with accuracy | **3** | **Measurement and Geometry** Students use metric units for length, mass and capacity. They tell time to the nearest minute. Students identify symmetry in natural and constructed environments. They use angle size as a measure of turn in real situations and make models of three-dimensional objects. Students match position on maps with given information and create simple maps. | **Using units of measurement**  Measure, order and compare objects using familiar metric units of length, *mass and* [*capacity*](http://www.australiancurriculum.edu.au/Glossary?a=M&t=capacity) |
| **48** | **Tearing the streamer**  **(a, b, c)** | PoG 53. Solve a range of problems involving key concepts of length | GP 5. Applying knowledge, skills and concepts of length | **4** | **Measurement and Geometry** Students compare areas of regular and irregular shapes, using informal units. They solve problems involving time duration. Students use scaled instruments to measure length, angle, area, mass, capacity and temperature of shapes and objects. They convert between units of time. Students create symmetrical simple and composite shapes and patterns, with and without the use of digital technology. They classify angles in relation to a right angle. Students interpret information contained in maps. | **Using units of measurement**  Use scaled instruments to measure and compare lengths, *masses, capacities and temperatures* |
| Choose appropriate units of measurement for length, *area,* [*volume*](http://www.australiancurriculum.edu.au/Glossary?a=M&t=volume)*,* [*capacity*](http://www.australiancurriculum.edu.au/Glossary?a=M&t=capacity) *and mass* |
| **Section G: MASS MEASUREMENT** | | | | | | |
| **49** | **What do you notice?**  **(a, b)** | PoG 39. Have awareness of the attribute of mass and its descriptive language | GP 1. Awareness of the attribute of mass and use of descriptive language | **F** | **Measurement and Geometry** Students identify measurement attributes in practical situations and compare lengths, masses and capacities of familiar objects. They order events, explain their duration, and match days of the week to familiar events. Students identify simple shapes in their environment and sort shapes by their common and distinctive features. They use simple statements and gestures to describe location. | **Using units of measurement**  Use direct*and indirect* comparisons to decide which is*longer*, heavier *or holds more*, and explain reasoning in everyday language |
| **49** | **What do you notice?**  **(c, d, e, f)** | PoG 42. Compare, order and match objects by mass | GP 2. Comparing, ordering, & matching with the attribute of mass | **2** | **Measurement and Geometry** Students order shapes and objects, using informal units for a range of measures. They tell time to the quarter hour and use a calendar to identify the date, days, weeks and months included in seasons and other events. Students draw two-dimensional shapes, specify their features and explain the effects of one-0step transformations. They recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. | **Using units of measurement**  Compare masses of objects using balance scales |
| **50** | **Teddies and coins** | PoG 44. Use informal units to estimate and measure mass | GP 3. Quantifying mass accurately, using units and attending to measurement principles | **2** | **Measurement and Geometry** Students order shapes and objects, using informal units for a range of measures. They tell time to the quarter hour and use a calendar to identify the date, days, weeks and months included in seasons and other events. Students draw two-dimensional shapes, specify their features and explain the effects of one-0step transformations. They recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. | **Using units of measurement**  Compare masses of objects using balance scales |
| PoG 47. Use uniform units appropriately to quantify mass, assigning number and unit to the measure |
| **51** | **One kilogram**  **(a, b)** | PoG 51. Use formal units for estimating and measuring mass, with accuracy | GP 4. Choosing standard units for estimating and measuring mass, with accuracy | **3** | **Measurement and Geometry** Students use metric units for length, mass and capacity. They tell time to the nearest minute. Students identify symmetry in natural and constructed environments. They use angle size as a measure of turn in real situations and make models of three-dimensional objects. Students match position on maps with given information and create simple maps. | **Using units of measurement**  Measure, order and compare objects using familiar metric units of *length,* mass and [*capacity*](http://www.australiancurriculum.edu.au/Glossary?a=M&t=capacity) |
| **52** | **Using formal units (a, b)** |
| **53** | **Using kitchen scales**  **(a, b, c, d)** | PoG 54. Solve a range of problems involving key concepts of mass | GP 5. Applying knowledge, skills and concepts of mass | **4** | **Measurement and Geometry** Students compare areas of regular and irregular shapes, using informal units. They solve problems involving time duration. Students use scaled instruments to measure length, angle, area, mass, capacity and temperature of shapes and objects. They convert between units of time. Students create symmetrical simple and composite shapes and patterns, with and without the use of digital technology. They classify angles in relation to a right angle. Students interpret information contained in maps. | **Using units of measurement**  Use scaled instruments to measure and compare*lengths*, masses, *capacities and temperatures* |
| **Section H: PROPERTIES OF SHAPE** | | | | | | |
| **54** | **Sorting shapes**  **(a)**  **(b)** | PoG 56. Sort simple shapes  PoG 57. Recognise resemblances and match some simple shapes, using standard ‘prototypes’ | GP 1. Holistic recognition of shape | **F** | **Measurement and Geometry** Students identify measurement attributes in practical situations and compare lengths, masses and capacities of familiar objects. They order events, explain their duration, and match days of the week to familiar events. Students identify simple shapes in their environment and sort shapes by their common and distinctive features. They use simple statements and gestures to describe location. | **Shape**  Sort, describe and name familiar two-dimensional shapes *and three-dimensional objects in the environment* |
| **54** | **Sorting shapes**  **(a ,b, c)** | PoG 58. Sort and compare circles, triangles and rectangles (including squares) using everyday language to describe their features | GP 2. Classification of shapes, attending to visual features | **1** | **Measurement and Geometry** Students use informal units of measurement to order objects based on length and capacity. They tell time to the half-hour and explain time durations. Students describe two-dimensional shapes and three-dimensional objects. They use the language of distance and direction to move from place to place. | **Shape**  Recognise and classify familiar two-dimensional shapes *and three-dimensional* *objects* using obvious features |
| PoG 60. Sort and compare shapes using some geometrical language to describe their features | **2** | **Measurement and Geometry** Students order shapes and objects, using informal units for a range of measures. They tell time to the quarter hour and use a calendar to identify the date, days, weeks and months included in seasons and other events. Students draw two-dimensional shapes, specify their features and explain the effects of one-0step transformations. They recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. | **Shape**  Describe *and draw* two-dimensional shapes, *with and without digital technologies* |
| **55** | **Choosing triangles**  **(a, b)** | PoG 63. Use properties of shapes to classify shapes into classes, using appropriate language | GP 3. Identification of “classes of shapes” by some properties | **2** | **Measurement and Geometry** Students order shapes and objects, using informal units for a range of measures. They tell time to the quarter hour and use a calendar to identify the date, days, weeks and months included in seasons and other events. Students draw two-dimensional shapes, specify their features and explain the effects of one-0step transformations. They recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. | **Shape**  Describe*and draw*two-dimensional shapes, *with and without digital technologies* |
| **55** | **Choosing triangles**  **(a, b, c)** | PoG 65. Can state and understand conditions for defining key shapes | GP 4. Definition of shapes using properties |

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| Section I: VISUALISATION | | | | | | |
| **56** | **Shapes in the environment** | PoG 61. Recognise static images in embedded situations | GP 1. Static, pictorial images formed in conjunction with models or manipulatives | **F** | **Measurement and Geometry** Students identify measurement attributes in practical situations and compare lengths, masses and capacities of familiar objects. They order events, explain their duration, and match days of the week to familiar events. Students identify simple shapes in their environment and sort shapes by their common and distinctive features. They use simple statements and gestures to describe location. | **Location and transformation**  Describe position and movement |
| **56** | **Shapes in the environment** | PoG 62. Can show the effect of simple flipping, sliding and turning of shapes | GP 2. Re-orientation of shapes mentally | **2** | **Measurement and Geometry** Students order shapes and objects, using informal units for a range of measures. They tell time to the quarter hour and use a calendar to identify the date, days, weeks and months included in seasons and other events. Students draw two-dimensional shapes, specify their features and explain the effects of one-0step transformations. They recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. | **Location and transformation**  Investigate the effect of one-step slides and flips *with and* without digital technologies |
| **57** | **Peeking over**  **(a, b, c)** | PoG 64. Can visualise the effect of simple flipping, sliding and turning of shapes |
| **58** | **Triads**  **(a, or b, or c)** |  | **F** | **Measurement and Geometry** Students identify measurement attributes in practical situations and compare lengths, masses and capacities of familiar objects. They order events, explain their duration, and match days of the week to familiar events. Students identify simple shapes in their environment and sort shapes by their common and distinctive features. They use simple statements and gestures to describe location. | **Location and transformation**  Describe position and movement |

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| 58 | Triads  (a, b, c) | PoG 66. Use dynamic imagery to visualise manipulation of shapes by transforming and rearranging | GP 3. Dynamic imagery | 2 | Measurement and Geometry Students order shapes and objects, using informal units for a range of measures. They tell time to the quarter hour and use a calendar to identify the date, days, weeks and months included in seasons and other events. Students draw two-dimensional shapes, specify their features and explain the effects of one-0step transformations. They recognise the features of three-dimensional objects. They interpret simple maps of familiar locations. | Location and transformation  Investigate the effect of one-step slides *and* flips *with and* without digital technologies |
| **59** | **Puzzle** | PoG 64. Can visualise the effect of simple flipping, sliding and turning of shapes |
| **60** | **Design** | PoG 67. Can combine a range of visualisation strategies in increasingly complex situations | GP 4. Extending and applying visualisation and orientation |  |  |  |
| **61** | **Rearrange the square** |

# Appendix 1:

# AusVELS Mathematics Content Descriptions not linked to Mathematics Online Interview

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| **Content Strand** | **Content Sub Strand and Content Description** | **Level** | |
| **Number and Algebra** | **Number and place value** | | |
| Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting | | 2 |
| Investigate the conditions required for a [number](http://www.australiancurriculum.edu.au/Glossary?a=M&t=number) to be odd or even and identify odd and even numbers | | 3 |
| Investigate and use the properties of odd and even numbers | | 4 |
| Investigate [number](http://www.australiancurriculum.edu.au/Glossary?a=M&t=number) sequences involving multiples of 3, 4, 6, 7, 8, and 9 | | 4 |
| Recall [multiplication](http://www.australiancurriculum.edu.au/Glossary?a=M&t=multiplication+) facts up to 10 × 10 and related division facts | | 4 |
| **Measurement and Geometry** | **Using units of measurement** | | |
| Compare and order the duration of events using the everyday language of time | | F |
| Describe duration using months, weeks, days and hours | | 1 |
| **Shape** | | |
| Describe the features of three-dimensional objects | | 2 |
| Make models of three-dimensional objects and describe key features | | 3 |
| Compare the areas of regular and irregular shapes by informal means | | 4 |
| Compare and describe two dimensional shapes that result from combining and splitting common shapes, with and without the use of digital technologies | | 4 |
| **Location and transformation** | | |
| Give and follow directions to familiar locations | | 1 |
| Interpret simple maps of familiar locations and identify the relative positions of key features | | 2 |
| Identify and describe half and quarter turns | | 2 |
| Create and interpret simple grid maps to show position and pathways | | 3 |
| Identify symmetry in the environment | | 3 |
| Use simple scales, legends and directions to interpret information contained in basic maps | | 4 |
| **Geometric reasoning** | | |
| Identify angles as measures of turn and compare [angle](http://www.australiancurriculum.edu.au/Glossary?a=M&t=angle) sizes in everyday situations | | 3 |
| Compare angles and classify them as equal to, greater than or less than a right [angle](http://www.australiancurriculum.edu.au/Glossary?a=M&t=angle) | | 4 |