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|  | Australian Curriculum Prep Year Mathematics sample assessment ׀ Teacher guidelines  I can count |

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| Assessment description | Category |
| Children count the number of objects (1–20) in a collection, record the solution, and describe the strategy used. | Spoken/signed written |
| Technique |
| Observation record |
| Context for assessment | Alignment |
| This assessment provides diagnostic information to inform future planning. Teachers observe, record and assess the child’s learning in counting a sequence, subitising and one-to-one correspondence.  Children use concrete materials to make a collection. They count the number in the collection. Children select ways to record their solution (i.e. pictorially, symbolically, in text or electronically) and describe the strategy used.  This assessment is appropriate to embed in everyday contexts where these numbers are applicable (e.g. making groups, counting images in texts or patterns in music).  This assessment can be used with the QCAA Australian Curriculum resource titled  *Prep plan—Mathematics exemplar*, available at: [www.qcaa.qld.edu.au/prep-maths-resources.html](http://www.qcaa.qld.edu.au/prep-maths-resources.html). | *Australian Curriculum* [*v7.0*](http://www.australiancurriculum.edu.au/Home/CurriculumHistory) Prep Year Mathematics Australian Curriculum content and achievement standard [www.australiancurriculum.edu.au](http://www.australiancurriculum.edu.au/Mathematics/Curriculum/F-10)  Prep Year Mathematics standard elaborations  [www.qcaa.qld.edu.au/downloads/p\_10/ac\_math\_ prep\_se.pdf](http://www.qcaa.qld.edu.au/downloads/p_10/ac_math_prep_se.pdf) |
| Connections |
| This assessment can be used with the QCAA Australian Curriculum resource titled *Comparison Challenges* *Prep Year unit overview — Mathematics exemplar* available at: [www.qcaa.qld.edu.au/prep-maths-resources.html](http://www.qcaa.qld.edu.au/prep-maths-resources.html). |
| Definitions |
| **One-to-one correspondence**: The matching of one, and only one, number-word to each element of a collection. **Subitising**: Recognising the number of objects in a collection without consciously counting. |
| In this assessment | Resources |
| * Teacher guidelines (this document) * Task-specific standards — continua * Task-specific standards — matrix * Assessment resource: Sample observation record * Assessment resource: Observation record * Assessment resource: Number representation   Note: No student booklet | * Coloured buttons or counting discs * Counters * Pencils * Small toys * Printed number cards 1 to 20 or a number chart * Unifix blocks * Mathematical attribution blocks |

# Teacher guidelines

## Identify curriculum

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| Content descriptions to be taught | |
| Number and Algebra | |
| 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](http://www.australiancurriculum.edu.au/Glossary?a=M&t=Point) [(ACMNA001)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA001) * Connect [number](http://www.australiancurriculum.edu.au/Glossary?a=M&t=Number) names, numerals and quantities, including zero, initially up to 10 and then beyond [(ACMNA002)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA002) * Subitise small collections of objects [(ACMNA003)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACMNA003) | |
| General capabilities (GCs) and cross‑curriculum priorities (CCPs)  This assessment may provide opportunities to engage with the following GCs and CCPs. Refer also to the Resources tab on the Mathematics curriculum and assessment page:  [www.qcaa.qld.edu.au/prep-maths-resources.html](http://www.qcaa.qld.edu.au/prep-maths-resources.html) | |
| Description: gc_literacy Literacy  Description: Description: gc_numeracy Numeracy | Aboriginal and Torres Strait Islander histories and cultures |
| Achievement standard  This assessment provides opportunities for children to demonstrate the following highlighted aspects. | |
| By the end of the Foundation year, students make connections between [number](http://www.australiancurriculum.edu.au/Glossary?a=M&t=Number) names, numerals and quantities up to 10. They compare objects using mass, length and [capacity](http://www.australiancurriculum.edu.au/Glossary?a=M&t=Capacity). Students connect events and the days of the week. They explain the order and duration of events. They use appropriate language to describe location.  Students count to and from 20 and order small collections. They group objects based on common characteristics and sort shapes and objects. Students answer simple questions to collect information. | |
| Source: ACARA, The Australian Curriculum v7.0, [www.australiancurriculum.edu.au](http://www.australiancurriculum.edu.au) | |

## Sequence learning

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| Suggested learning experiences |
| This assessment leads on from the learning experiences outlined in the QCAA’s Prep Year Mathematics unit overview. The knowledge, understanding and skills developed in the exemplar unit will prepare children to engage in this assessment:  See unit overview — Mathematics exemplar titled *Comparison challenges*  [www.qcaa.qld.edu.au/prep-maths-resources.html](http://www.qcaa.qld.edu.au/prep-maths-resources.html) |
| Adjustments for needs of learners |
| To make adjustments, teachers refer to learning area content aligned to the child’s chronological age, personalise learning by emphasising alternate levels of content, general capabilities or cross‑curriculum priorities in relation to the chronological age learning area content. The emphasis placed on each area is informed by the child’s current level of learning and their strengths, goals and interests. Advice on the process of curriculum adjustment for all children and in particular for those with disability, gifted and talented or for whom English is an additional language or dialect are addressed in *Australian Curriculum — Student Diversity* materials.  For information to support children with diverse learning needs, see:   * Queensland Curriculum and Assessment Authority materials for supporting children with diverse learning needs [www.qcaa.qld.edu.au/10188.html](http://www.qcaa.qld.edu.au/10188.html) * Australian Curriculum Student Diversity [www.australiancurriculum.edu.au/StudentDiversity/Overview](http://www.australiancurriculum.edu.au/StudentDiversity/Overview) * The *Melbourne Declaration on Educational Goals for Young Australians* [www.mceecdya.edu.au/mceecdya/melbourne\_declaration,25979.html](http://www.mceecdya.edu.au/mceecdya/melbourne_declaration,25979.html) * The *Disability Standards for Education* [www.ag.gov.au](http://www.ag.gov.au) |
| Resources |
| **Online**   * Mathematics and numeracy learning objects for the Australian Curriculum.  National digital learning resources network,  e.g. *Number trains* series, *Counting beetles* series under Early years > Number and Algebra [log-in required] [www.ndlrn.edu.au/using\_the\_resources/australian\_curriculum\_resources/mathematics.html](http://www.ndlrn.edu.au/using_the_resources/australian_curriculum_resources/mathematics.html) * Strategies for teaching numbers, including the counting sequence and addition and subtraction. Queensland Studies Authority, Mathematics (2004) support materials, *About number*, under Information for teachers [www.qcaa.qld.edu.au/1184.html](http://www.qcaa.qld.edu.au/1184.html) |

## Develop assessment

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| Preparing for the assessment |
| Develop a mathematical vocabulary related to numbers (including two-digit numbers), such as:   * numerals, numeral names, -teen, -ty, ones place value, tens place value, hundreds place value * count forwards, count backwards, number before, number after, more than, less than, zero, is the same as * more, less, first, last, different, order, same, same as, not the same as (when comparing characteristics of objects) * first, second, third.   Rote learn numbers 1 to 20 by:   * naming numbers to and from 20 * playing games involving counting (e.g. hide-and-seek, skipping) * listening to and reciting rhymes with numbers  (e.g. ‘One, two, three, four, five, once I caught a fish alive’; ‘One, two, buckle my shoe’; ‘Ten green bottles’) * pointing to ordered cards (pictorial and symbolic) saying the name of the number * removing a card from a sequence of 1 to 20 and asking the child what number is missing.   Match between different representations of numbers, such as:   * spoken numerals * images of objects (e.g. groups of dots) of the same number * numerals * numeral names * places on a number line * number grids (e.g. 2 x 5, 1 x 10, 2 x 10).   Explore multiple strategies for counting collections, such as:   * using a counting cloud * using their eyes * moving the objects into a row and from left to right as they count until 1:1 is established * placing individual objects into small numbered containers * subitising, then counting on * moving the objects into groups to count objects into twos, fives or tens while counting.   Note: Emphasise to children that they can start counting at any position. Moving objects around in the collection doesn’t change the number of objects. The order that the objects are counted in does not matter.  Practise counting:   * with and without touching the object * objects in a shape * back in ones * from the middle object.   Practise counting, such as the number of:   * stairs to the classroom * pavers as they are stepped on * claps in a song * individual movements * moving objects (e.g. cars in traffic) * things in a lunch box * children absent * children at a table. |

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| Implementing | |
| Section 1. Organisation | |
| Child role  Children work in pairs and:   * decide who will make the collection of objects first * start with different numbers of objects in the collection of items each time. | Teacher role  Each pair of children will be supervised by an adult.   * Arrange for children to work in pairs of similar ability. * Determine appropriate target numbers for each child to count to, and pair accordingly. |
| Section 2. The assessment | |
| Child role  Working in pairs:   * Child 1  makes a collection of items and asks,  ‘How many are there?’ * Child 2  responds with answer * Child 2  explains the counting strategy used * Child 1  checks the answer   Children exchange roles and repeat the process outlined above using different numbers of objects. | Teacher role  Provide a collection of objects (between one and 20) appropriate to the level of the pair of children.   * Ask Child 1 to make a collection of items and ask their partner to count the number of items. Ensure Child 2 understands the request. * Encourage children to respond using their preferred method of representation (refer to Assessment resource: Number representation) and to check their own answers before responding. * Ask Child 2 to explain how they have counted the number of objects (e.g. pointing, moving the objects, using their eyes, subitising). Make observations about the children’s responses — their thinking processes and numeric answers throughout the assessment. * Ask Child 1 to check the answer. If child checks incorrectly, ask them to check again. * Support children when exchanging roles. Ensure each child has the opportunity to count collections that have both had objects removed and objects added to them. |

## Make judgments

When making judgments about the evidence in children’s responses to this assessment, teachers are advised to use the task-specific standards provided. The development of these task-specific standards has been informed by the Queensland Prep Year standard elaborations. See [www.qcaa.qld.edu.au/prep-maths-resources.html](http://www.qcaa.qld.edu.au/prep-maths-resources.html)

### The Queensland standard elaborations for Mathematics

The Queensland Prep Year standard elaborations for Mathematics are a resource to assist teachers to make consistent and comparable evidence-based A to E (or the Early Years equivalent) judgments. They should be used in conjunction with the Australian Curriculum achievement standard and content descriptions for the relevant year level.

The Queensland Mathematics standard elaborations provide a basis for judging *how well* children have demonstrated what they know, understand and can do using the Australian Curriculum achievement standard.

The dimensions of the Australian Curriculum achievement standards, Understanding and Skills, are used to organise the Queensland Mathematics standard elaborations. Understanding and Skills in Mathematics are organised as Understanding & Fluency, and Problem solving & Reasoning.

The valued features of Mathematics, drawn from the achievement standard and the content descriptions for Understanding and Skills, are organised as:

* conceptual understanding
* procedural fluency
* mathematical language and symbols
* problem-solving approaches
* modelling
* reasoning and justification.

#### Task-specific standards

Task-specific standards give teachers:

* a tool for directly matching the evidence of learning in the response to the standards
* a focal point for discussing children’s responses
* a tool to help provide feedback to children.

Task-specific standards are not a checklist; rather they are a guide that:

* highlights the valued features that are being targeted in the assessment and the qualities that will inform the overall judgment
* specifies particular *targeted aspects* of the curriculum content and achievement standard
* aligns the valued feature, task-specific descriptor and assessment
* allows teachers to make consistent and comparable on-balance judgments about a child’s work by matching the qualities of children’s responses with the descriptors
* clarifies the curriculum expectations for learning at each of the five grades (A to E or the Early Years equivalent)
* shows the connections between what children are expected to know and do, and how their responses will be judged and the qualities that will inform the overall judgment
* supports evidence-based discussions to help children gain a better understanding of how they can critique their own responses and achievements, and identify the qualities needed to improve
* encourages and provides the basis for conversations among teachers, children and parents/carers about the quality of children’s work and curriculum expectations and related standards.

#### Task-specific valued features

Task-specific valued features are the discrete aspects of the valued features of Mathematics targeted in a particular assessment and incorporated into the task-specific standards for that assessment. They are selected from the Queensland Mathematics standard elaborations valued features drawn from the Australian Curriculum achievement standard and content descriptions.

##### Task-specific valued features for this assessment

The following table identifies the valued features for this assessment and makes explicit the understandings and skills that children will have the opportunity to demonstrate. This ensures that the alignment between what is taught, what is assessed and what is reported is clear.

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| Australian Curriculum achievement standard dimensions | Proficiency strands | Queensland standard elaborations valued features | Task-specific valued features |
| Understanding and Skills | Understanding & Fluency | Mathematical language and symbols | Use of everyday and some appropriate mathematical language, actions, materials, and recordings to count and represent numbers to twenty |
| Procedural fluency | Recall and use of facts and procedures, including subitising and one-to-one correspondence, to count objects in a collection |
| Problem solving & Reasoning | Problem-solving approaches | Uses problem-solving approaches to count objects in a collection of twenty objects |
| Reasoning and justification | Description of mathematical thinking, including demonstration of strategies used to count a collection of objects |

The task-specific standards for this assessment are provided in two models using the same task‑specific valued features:

* a matrix
* a continua.

Evidence for this assessment is gathered through an observation record.

#### Matrix and continua

Task-specific standards can be prepared as a matrix or continua. Both the continua and the matrix:

* use the Queensland standard elaborations to develop task-specific descriptors to convey expected qualities in children’s work — A to E (or the Early Years equivalent)
* highlight the same valued features from the Queensland standard elaborations that are being targeted in the assessment and the qualities that will inform the overall judgment
* incorporate the same task-specific valued features, that is, make explicit the particular understanding / skills that children have the opportunity to demonstrate for each selected valued feature
* provide a tool for directly matching the evidence of learning in the child’s response to the standards to make an on-balance judgment about achievement
* assist teachers to make consistent and comparable evidence-based A to E (or the Early Years equivalent) judgments.

##### Continua

The continua model of task-specific standards uses the dimensions of the Australian Curriculum achievement standard to organise task-specific valued features and standards as a number of reference points represented progressively along an A to E (or Early Years equivalent) continuum. The task-specific valued features at each point are described holistically. The task‑specific descriptors of the standard, use the relevant degrees of quality described in the Queensland standard elaborations.

Teachers determine a position along each continuum that best matches the evidence in the children’s responses to make an on-balance judgment about achievement on the task.

The continua model is a tool for making an overall on-balance judgment about the assessment and for providing feedback on task-specific valued features.

##### Matrix

The matrix model of task-specific standards uses the structure of the Queensland standard elaborations to organise the task-specific valued features and standards A to E (or the Early Years equivalent). The task-specific descriptors of the standard described in the matrix model, use the same degrees of quality described in the Queensland standard elaborations.

Teachers make a judgment about the task-specific descriptor in the A to E (or the Early Years equivalent) cell of the matrix that best matches the evidence in the children’s responses, in order to make an on-balance judgment about how well the pattern of evidence meets the standard.

The matrix is a tool for making both overall on-balance judgments and analytic judgments about the assessment. Achievement in each valued feature of the Queensland standard elaboration targeted in the assessment can be recorded and feedback can be provided on the task-specific valued features.

## Use feedback

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| Feedback to children | Evaluate the information gathered from the assessment to inform teaching and learning strategies. Focus feedback on the child’s personal progress and the next steps in the learning journey.  Offer feedback that:   * makes explicit the strategies the child is using and advances their knowledge and understanding of counting and ways of working to generate and check for reasonableness of the solution * identifies difficulties children might have with the difference in suffixes in two-digit numbers (i.e. -teen, -ty) * uses correct number names when transitioning from one decade to the next * assists with writing numbers correctly and in the correct order (e.g. sixteen as ‘16’, not ‘61’) * identifying notions of conservation when counting. |
| Resources | For guidance on providing feedback, see the professional development packages titled:   * *About feedback* [www.qcaa.qld.edu.au/downloads/p\_10/as\_feedback\_about.docx](http://www.qcaa.qld.edu.au/downloads/p_10/as_feedback_about.docx) * *Seeking and providing feedback* [www.qcaa.qld.edu.au/downloads/p\_10/as\_feedback\_provide.docx](http://www.qcaa.qld.edu.au/downloads/p_10/as_feedback_provide.docx) |