**Australian Curriculum:  
Digital Technologies**

**Years F–2**

**Sample assessment task**

**Stepping out**

**Assessment focus:** Australian Curriculum:Digital Technologies   
(Data)

**About this assessment task**

This sample assessment task has been prepared to assist teachers with the implementation of the Australian Curriculum: Digital Technologies, with a particular focus on *data*. It shows how aspects of the Digital Technologies curriculum related to data can be assessed using contexts from other learning areas and subjects. These contexts may be content that students have recently completed or are learning concurrently. This approach should enhance the manageability of the curriculum while still providing a targeted focus on Digital Technologies.

**Purpose**

The sample task aims to:

* demonstrate meaningful curriculum links to:
* Digital Technologies curriculum:
  + - achievement standard
    - content descriptions
    - content strands
    - key concepts
    - key ideas (Technologies)
* general capabilities
* cross-curriculum priorities
* other learning areas. See Appendix 1 for detailed links.
* provide teacher support materials, suggested adjustments for students with diverse needs and resources. See Appendix 2.
* provide a template to create your own assessment task. See Appendix 3.

**How to use this sample task**

The sample task can be implemented as a standalone task or it can be used to inform planning of a:

* unit of work that might accompany the sample task
* similar task and/or unit of work with a focus on data.

**Title: Stepping out**

**Assessment focus:** Australian Curriculum: Digital Technologies (Data). This task is also linked to Mathematics. Depending on modifications made to this task, opportunities may exist to link this task to other learning areas.

**Band:** YearsF–2 (intended cohort Year 1)

**Context:** Measurement (Mathematics)

**Duration:** *Dependent on how task is to be implemented*

**Prior learning:** Students will have previously collected data of various kinds such as preferred ice-cream flavours, students’ height and insects in their nature reserve. To successfully complete this assessment, students should be able to reflect on previous instances of collecting data about themselves and the world around them through Mathematics and Science activities throughout the year. The teacher may need to scaffold this activity by revisiting previous learning experiences and by providing feedback to the students as the task progresses.

## **Task summary**

Discuss with the students how knowing the distance between places is important for planning journeys.They will be aware of how to accurately measure a step, for example from the back of the first foot to the back of the second foot. Students can use yarn or string to measure their step and then put the pieces of yarn to compare the length of steps with the entire class. Working through a prediction phase early in the topic, students will have opportunities to compare predicted data with actual data collected to increase understanding.

Students will:

* research their movements around the school
* collect data on their physical movement around different parts of the school
* collect data using a variety of techniques to count the steps taken, for example tally marks, cardboard feet, string, counting with numbers
* collate and sort their data and represent them to show steps taken at different points around the school
* produce a graph which shows the steps required to walk from point A in the school to point B in the school
* make decisions and answer questions about their movement
* interpret their own data
* interpret the data of other students
* compare the number of steps to the same location and explain why there are differences between students, for example longer strides, shorter path to the same location
* present the data appropriately to an audience.

**Notes for teachers:** Data sets do not need to be large for this activity. Data interpretation and representation are the key focus. See Appendix 2 and [Student task sheet](http://www.digitaltechnologieshub.edu.au/docs/default-source/resource-bank/acara_f-2_student_task_sheet_data.pdf)*.*

**Background information**

**Teacher guidance and support**

Students should be guided towards understanding that to compare measurements in a standardised way, the unit of measurement needs to be consistent. Figure 1 shows some examples of what data collection may involve. It will depend on the resources that your school has access to. Students may use the following to calculate steps:

* students’ own feet, one in front of the other
  + Ask students to walk three separate journeys, record their steps and compare with others to see that footsteps are an approximation, but can be wildly different, hence a standardised unit is preferable.
* cardboard cut-out of one foot
* materials such as blocks
* lengths of yarn or string.

Ask students from an older grade to help code a micro:bit as a step counter. See Resources section, Appendix 2.

Figure 1 shows some examples of what data representation may look like for the student, depending on the resources which your school has access to.

|  |  |  |  |
| --- | --- | --- | --- |
| C:\Users\mhughes\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\9CEDE164.tmp | | C:\Users\mhughes\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\5BFCB2F0.tmp | |
| ***C:\Users\mhughes\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\3EB9C67E.tmp*** | ***C:\Users\mhughes\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\E9A2B73C.tmp*** | | ***C:\Users\mhughes\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\60032112.tmp*** |

Figure 1: Some examples of what data representation may look like for the student

*Images CC 4.0 ACARA and ACA except Lego image source:* [*https://images.app.goo.gl/tKyB6Yuxbd2aj9eg6*](https://images.app.goo.gl/tKyB6Yuxbd2aj9eg6) *and micro:bit image:* [*https://make.techwillsaveus.com/microbit/activities/step-counter-by-the-faraday-institute*](https://make.techwillsaveus.com/microbit/activities/step-counter-by-the-faraday-institute) *accessed 8/4/2019*

**Links to the Australian Curriculum**

Table 1 provides an opportunity for teachers to see all the related Australian Curriculum links to this task. For a more in-depth exploration of the links to the curriculum, see Appendix 1.

Table 1: Links from the task to the Australian Curriculum

|  |  |  |  |
| --- | --- | --- | --- |
| **Digital Technologies**  ***Achievement standard***  Aspects of the achievement standard addressed by this task are highlighted. | By the end of Year 2, students identify how common digital systems (hardware and software) are used to meet specific purposes. They use digital systems to represent simple patterns in data in different ways.  Students design solutions to simple problems using a sequence of steps and decisions. They collect familiar data and display them to convey meaning. They create and organise ideas and information using information systems, and share information in safe online environments. | | |
| ***Strands*** | Digital Technologies knowledge and understanding   * Representation of data   Digital Technologies processes and production skills   * Collecting, managing and analysing data | | |
| ***Content descriptions*** | Recognise and explore patterns in data and represent data as pictures, symbols and diagrams ([ACTDIK002](http://www.scootle.edu.au/ec/search?accContentId=ACTDIK002))  Collect, explore and sort data, and use digital systems to present the data creatively ([ACTDIP003](http://www.scootle.edu.au/ec/search?accContentId=ACTDIP003)) | | |
| ***Key concepts*** | * data collection * data representation * data interpretation | ***Key ideas*** | * Thinking in Technologies * Computational thinking |
| ***Cross-curriculum priorities*** | N/A | ***General capabilities*** | * Information and Communication Technology (ICT) Capability * Literacy * Numeracy |

**Assessment**

**Assessment planner**

|  |  |
| --- | --- |
| **Achievement standard**  (relevant aspect of the achievement standard to be assessed) | **Student evidence**  (what student evidence will be considered to judge if the achievement standard aspect has been met). |
| **Digital Technologies** | Student: |
| They collect familiar data and display them to convey meaning. | * collects and sorts data, e.g. tally charts * creates an image of data collected using hands-on manipulatives or digital applications |
| They use digital systems to represent simple patterns in data in different ways. | * uses digital systems to visualise data * explains how the same data sets can be represented in different ways * identifies patterns in data |
| They create and organise ideas and information using information systems. | * manipulates different data when creating information and digital solutions * evaluates the way they represented their findings |
| Students identify how common digital systems (hardware and software) are used to meet specific purposes. | * evaluates the process of collecting data and how it can be displayed and shared * identifies and uses information systems to show their findings |

**Sample assessment rubric F–2 (Data)**

**Note:** The rubric below shows only Digital Technologies. There are opportunities to include other learning areas in the assessment.

‘The purpose of using rubrics is to provide students with feedback on tasks to inform their learning. The feedback can be specific, as it relates to one of a number of different aspects of a student’s work. Rather than an overall “grade” being given, the teacher provides targeted feedback against the criteria. The criteria can range across a number of skills and/or understandings relevant to the task.’ ESA (2019) <http://www.scootle.edu.au/ec/viewing/R11921/index.html>

This rubric is an example; the intention is that you can customise it to suit the unit of work you have developed and your school context. Some further tools to support you are: <http://rubistar.4teachers.org/index.php> and <http://www.teach-nology.com/web_tools/rubrics/>

|  |  |  |  |
| --- | --- | --- | --- |
| They collect familiar data and display them to convey meaning. | | | |
|  | **Below standard**  Student: | **At standard**  Student: | **Above standard**  Student: |
| **Collecting data** | gathers data with support by observing and counting | gathers data independently by observing and counting objects | gathers data independently by observing, counting and measuring objects |
| records images with support | records data independently as images | records data independently as images, numbers or text |
| **Interpreting data** | explores data by classifying, grouping and sorting | comprehends what someone else’s graph represents | discusses inferences within the data collected |
| They use digital systems to represent simple patterns in data in different ways. | | | |
| **Representing data** | uses a digital system to present data with support | uses digital systems independently to present data in different ways | uses digital systems independently to present data in different ways to answer simple questions |
| observes patterns in data with support and repetition | observes patterns in data independently | observes patterns in data independently and explains why |
| explains what the data represent with support | makes simple generalisations and predictions about the data (e.g. organises objects by colour and size) | makes complex generalisations about the data (e.g. what do these data **not** tell us?) |

**Appendix 1**

**Australian Curriculum links (in detail)**

**Links to the Australian Curriculum**

**Digital Technologies**

**Achievement standard**

By the end of Year 2, students identify how common digital systems (hardware and software) are used to meet specific purposes. They use digital systems to represent simple patterns in data in different ways.

Students design solutions to simple problems using a sequence of steps and decisions. They collect familiar data and display them to convey meaning. They create and organise ideas and information using information systems, and share information in safe online environments.

**Content descriptions**

|  |
| --- |
| Collect, explore and sort data, and use digital systems to present the data creatively ([ACTDIP003](http://www.scootle.edu.au/ec/search?accContentId=ACTDIP003))  Recognise and explore patterns in data and represent data as pictures, symbols and diagrams ([ACTDIK002](http://www.scootle.edu.au/ec/search?accContentId=ACTDIK002)) |

**Content strands**

This assessment task links to both the knowledge and understanding, and processes and production skills strands of the Digital Technologies curriculum.

|  |  |  |  |
| --- | --- | --- | --- |
| **Digital Technologies knowledge and understanding** | | **Digital Technologies processes and production skills** | |
| Digital systems  Representation of data | X | Collecting, managing and analysing data  Creating digital solutions by:   * investigating and defining * generating and designing * producing and implementing * evaluating * collaborating and managing | X |

## **Links to the key ideas**

|  |  |  |
| --- | --- | --- |
| **Creating preferred futures** | Students develop solutions to meet needs considering impacts on liveability, economic prosperity and environmental sustainability. |  |
| **Project management** | Students will develop skills to manage projects to successful completion through planning, organising and monitoring timelines, activities and the use of resources. |  |
| **Thinking in Technologies**   * Systems thinking | Systems thinking is a holistic approach to the identification and solving of problems where the focal points are treated as components of a system, and their interactions and interrelationships are analysed individually to see how they influence the functioning of the entire system. |  |
| * Design thinking | Design thinking involves the use of strategies for understanding design needs and opportunities, visualising and generating creative and innovative ideas, planning, and analysing and evaluating those ideas that best meet the criteria for success. |  |
| * Computational thinking | Computational thinking is a problem-solving method that is applied to create solutions that can be implemented using digital technologies. It involves integrating strategies, such as organising data logically, breaking down problems into parts, interpreting patterns and models and designing and implementing algorithms. | X |

Read more about the [key ideas in the Australian Curriculum: Technologies](https://www.australiancurriculum.edu.au/f-10-curriculum/technologies/key-ideas/).

**Links to the key concepts**

The [key concepts](https://www.australiancurriculum.edu.au/f-10-curriculum/technologies/digital-technologies/structure/)that underpin the Digital Technologies curriculum establish a way of thinking about problems, opportunities and information systems and provide a framework for knowledge and practice. Colour coding is based on the [Australian Computing Academy (ACA) scheme](https://aca.edu.au/#what-is-the-digital-technologies-curriculum).

|  |  |  |  |
| --- | --- | --- | --- |
|  | **abstraction** | underpins all content, particularly the content descriptions relating to the concepts of data representation; and specification; algorithms; and implementation | |
|  | **data collection** | (properties, sources and collection of data) | X |
|  | **data representation** | (symbolism and separation) | X |
|  | **data interpretation** | (patterns and contexts) | X |
|  | **specification** | (descriptions and techniques) |  |
|  | **algorithms** | (following and describing) |  |
|  | **implementation** | (translating and programming) |  |
|  | **digital systems** | (hardware, software, and networks and the internet) |  |
|  | **interactions** | (people and digital systems, data and processes) |  |
|  | **impact** | (sustainability and empowerment) |  |

**Cross-curriculum priorities** [Read more…](https://www.australiancurriculum.edu.au/f-10-curriculum/cross-curriculum-priorities/)

|  |  |  |
| --- | --- | --- |
| **Aboriginal and Torres Strait Islander histories and cultures** | **Asia and Australia’s engagement with Asia** | **Sustainability** |
|  |  |  |

## **General capabilities** [Read more…](https://www.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Literacy** | **Numeracy** | **ICT Capability** | **Critical and Creative Thinking** | **Ethical Understanding** | **Personal and Social Capability** | **Intercultural Understanding** |
| X | X | X |  |  |  |  |

**Links to ICT Capability continuum – Levels 1 and 2** [Read more*…*](https://www.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/information-and-communication-technology-ict-capability/)

Depending on the year level this activity is being used with, please adjust content to the appropriate level.

|  |  |
| --- | --- |
| **Applying social and ethical protocols and practices when using ICT** | |
| recognise ownership of digital products that others produce and that what they create or provide can be used or misused by others (Level 2) |  |
| follow class rules about applying selected standard guidelines and techniques to secure digital information (Level 2) |  |
| follow class guidelines when sharing personal information and apply basic social protocols when using ICT to communicate (Level 1) |  |
| identify how ICT is used at home and at school (Level 2) | X |
| **Creating with ICT** | |
| use ICT to prepare simple plans to find solutions or answers to questions (Level 2) |  |
| experiment with ICT as a creative tool to generate simple solutions, modifications or data representations for particular audiences or purposes (Level 2) | X |
| **Communicating with ICT** | |
| use purposefully selected ICT tools safely to share and exchange information with appropriate local audiences (Level 2) | X |
| understand that computer mediated communications may be received later by the receiver (Level 2) |  |

Ref: <https://docs.acara.edu.au/resources/General_capabilities_-_ICT_-_learning_continuum.pdf>

**Links to Literacy**

In this Year 1 task in Digital Technologies, students have the opportunity to develop literacy by comprehending texts through listening, reading and viewing; composing texts through speaking, writing and creating; and using grammar, word and visual knowledge. They practise literacy skills as they listen to instructions and identify and respond to key information in spoken and multimodal texts, compose and edit learning area texts, and use language to interact with others. As students record observations, connect and express ideas, and make comparisons, they apply their knowledge of grammar and use subject-specific vocabulary. Students also describe how visual elements such as images create meaning.

Visit Literacy general capability <https://www.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/literacy/>

Visit National Literacy Learning Progression <https://www.australiancurriculum.edu.au/resources/national-literacy-and-numeracy-learning-progressions/national-literacy-learning-progression/>

**Links to Numeracy**

In this Year 1 task in Digital Technologies, students have the opportunity to develop numeracy by estimating and calculating with whole numbers, interpreting statistical information and using measurement. In using software, materials, tools and equipment, students have opportunities to model, represent, order and use numbers in real-life situations; and to solve everyday addition and share stories. They gather, record and display data as tables, diagrams and graphs; explain findings; and recognise patterns. They measure length using direct and indirect comparisons and informal units to collect and record information.

## Visit Numeracy general capability <https://www.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/numeracy/>

Visit National Numeracy Learning Progression <https://www.australiancurriculum.edu.au/resources/national-literacy-and-numeracy-learning-progressions/national-numeracy-learning-progression/>**Links to other learning areas**

|  |
| --- |
| **Mathematics** |
| **Foundation:**  *Number and Algebra*   * Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point (ACMNA001) * Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond (ACMNA002)   *Measurement and Geometry*   * Compare and order duration of events using everyday language of time (ACMMG007) * Connect days of the week to familiar events and actions (ACMMG008)   *Statistics and Probability*   * Answer yes/no questions to collect information and make simple inferences (ACMSP011)   **Year 1 Achievement Standard:**  **By the end of Year 1, students describe number sequences resulting from skip counting by 2s, 5s and 10s.** They identify representations of one half. They recognise Australian coins according to their value. Students explain time durations. They describe two-dimensional shapes and three-dimensional objects. **Students describe data displays.**  **Students count to and from 100 and locate numbers on a number line. They carry out simple additions and subtractions using counting strategies. They partition numbers using place value. They continue simple patterns involving numbers and objects**. Students order objects based on lengths and capacities using informal units. They tell time to the half-hour. **They use the language of direction to move from place to place.** Students classify outcomes of simple familiar events. **They collect data by asking questions, draw simple data displays and make simple inferences.**  Note: Bold text highlights where there are opportunities to address aspects in the task.  *Number and Algebra*   * Develop confidence with number sequences to and from 100 by ones from any starting point. Skip count by twos, fives and tens starting from zero (ACMNA012) * Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line (ACMNA013)   *Measurement and Geometry*   * Describe duration using months, weeks, days and hours (ACMMG021) * Give and follow directions to familiar locations (ACMMG023)   *Statistics and Probability*   * Choose simple questions and gather responses and make simple inferences (ACMSP262) * Represent data with objects and drawings where one object or drawing represents one data value. Describe the displays (ACMSP263)   **Year 2:**  *Number and Algebra*   * Recognise, model, represent and order numbers to at least 1000 (ACMNA027) * Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting (ACMNA028) * Describe patterns with numbers and identify missing elements (ACMNA035) * Solve problems by using number sentences for addition or subtraction (ACMNA036)   *Measurement and Geometry*   * Interpret simple maps of familiar locations and identify the relative positions of key features (ACMMG044)   *Statistics and Probability*   * Identify a question of interest based on one categorical variable. Gather data relevant to the question (ACMSP048) * Collect, check and classify data (ACMSP049) * Create displays of data using lists, table and picture graphs and interpret them (ACMSP050) |

## **Appendix 2**

## **Support materials**

## Things to think about

*Rich questions and discussion starters*

Students with diverse needs

**Resources**

## **Support materials**

## **Things to think about**

## **Rich questions and discussion starters**

* What is the shortest route to get to xyz?
* What is the longest route to get to xyz?

Asking the right type of questions helps establish what students know about data and also what they can interpret from it. Use open-ended and probing questions (usually beginning with how, who, when, where and why) to promote critical thinking. For example:

Students could begin to make some inferences with guided questioning, for example:

* Why would we want to record this or know this information? What could it help us with?
* What questions cannot be answered with these data? For example: Which route has a bubbler on the way? Which route goes past the canteen?

For older students more complex questions such as these are useful:

* What patterns or themes emerge from the data?
* What proof exists for …?
* How would \_\_\_\_\_\_\_\_\_\_\_\_\_ affect or influence \_\_\_\_\_\_\_\_\_\_\_?
* How would you translate \_\_\_\_\_\_\_ into visual form?

## See <https://www.lavc.edu/profdev/library/docs/promotethink.aspx>

## **Suggestions for preparing a task for Foundation, Year 1 or Year 2**

The aim of this task is to explore the concept of data as it applies to a context that is meaningful to and contextually appropriate for the students in your class. The context and topic through which your students can engage with data will obviously vary with their age and ability.

***Foundation students*** could explore data through links to a story that is being read in class such as the teddy bears’ picnic where students might even use the steps of a teddy in the task as their measure.

***Year 1 students*** could explore data through links to an insect unit of work in Science with a focus on living and non-living things. Students would be able to sort data based on many different elements. During an HPE lesson students could also explore data when looking at healthy snacks eaten by students at school.

***Year 2 students*** could explore data through mapping in a HASS unit of work by mapping their travels in familiar locations around their school and local community; for example, places they visit on the weekends such as the sporting field or shopping centre. They could also make connections to mathematical concepts of distance, measurement and how we can use technology to collect and represent these data.

## **Students with diverse needs**

|  |  |
| --- | --- |
| Students with **learning disabilities** may need simplified, scaffolded support materials. Adjustments might include:   * Is there a difference if I take a stride, compared with placing one foot directly in front of the other? * Can the student record steps from point A to B and return to A? * Can the student record the steps from point A to B then to C?   Students with **limited mobility** may wish to use paper cut-outs of feet, tie a ribbon to their chair wheel and see how many wheel rotations it takes to travel a set plan. | C:\Users\mhughes\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\9E6BACA0.tmp |
| Students with **high potential** may require opportunities for extension. Adjustments might include:   * measuring their step/stride and then calculating the walking distance for the A to B trip based on the measurement * creating a birds-eye view labelled map that includes A, B, path and measured distance, e.g. created with the free app Skitch. * using scribble maps to display data. See <https://www.scribblemaps.com/> * using Skitch app to display data. See <https://apps.apple.com/au/app/skitch-snap-mark-up-send/id490505997>. | C:\Users\mhughes\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\6A37DBAE.tmp |

## **Resources**

* Australian Curriculum Technologies/Digital Technologies <https://www.australiancurriculum.edu.au/resources/digital-technologies-in-focus/>
* Digital Technologies Hub <https://www.digitaltechnologieshub.edu.au/>
* ACA Unpack the Curriculum <https://aca.edu.au/curriculum/>
* Code a micro:bit as a step counter <https://make.techwillsaveus.com/microbit/activities/step-counter-by-the-faraday-institute>
* [Scootle Assessment Rubric: Learning strategy resource](http://www.scootle.edu.au/ec/viewing/R11921/index.html)
* Use scribble maps to display data <https://www.scribblemaps.com/>
* Use Skitch app to display data <https://apps.apple.com/au/app/skitch-snap-mark-up-send/id490505997>Create simple charts and graphs <https://www.j2e.com/j2data/>

## **Appendix 3**

## **Data task planning template**

This template is a suggested step-by-step approach that teachers might use to consider whether *all* or *any* of these links apply to an assessment task they develop themselves to better reflect the learning needs of their students and the context of their classroom and school.

**Planning template suggested approach**

Below is a broad outline of how to use the assessment task planning template on the following pages. It reflects the work of Wiggins and McTighe (2012) on Understanding by Design, which features a backward design approach.

1. Begin with Digital Technologies:
   1. determine the aspects of the achievement standard that will be the focus of the task
   2. highlight the relevant aspects of the standard
   3. identify what knowledge and skills students will need in order to demonstrate the achievement standards (content descriptions)
   4. identify the strands and threads that will need to be addressed.
2. As Digital Technologies is the driving learning area, it is suggested that only the key ideas for this learning area be identified.
3. Indicate the key concepts of Digital Technologies that will be addressed and how.
4. Scan the Australian Curriculum to find meaningful connections between:
   1. learning areas (two learning areas helps keep learning focused, avoid more than three)
   2. general capabilities
   3. cross-curriculum priorities

For example, connections could be established on the grounds of:

1. common concepts/key ideas, such as data/design/ways of thinking
2. common words, such as ‘create’, ‘communicate’ and ‘control’
3. contexts, from learning areas such as Science, HASS, HPE, The Arts
4. Indicate what general capabilities and cross-curriculum priorities can be meaningfully addressed in the assessment task.
5. Construct a task that allows for discrimination in performance and includes:
   * title
   * band level
   * duration
   * task summary, including prior learning
   * achievement standards and content descriptions
   * task
   * assessment rubric.

Search for xxxx and replace with your own text.

**Title: xxxx**

**Assessment focus:** Australian Curriculum: Digital Technologies (Data). This task is also linked to xxxx. Depending on modifications made to this task, opportunities may exist to link this task to other learning areas.

**Band:** F–2 (intended cohort Year 1)

**Context:** xxxx

**Duration:** *Dependent on how task is to be implemented*

**Prior learning:** Students will have previously collected data of various kinds such as preferred ice-cream flavours, students’ height and insects in their nature reserve. To successfully complete this assessment, students should be able to reflect on previous instances of collecting data about themselves and the world around them through xxxx activities throughout the year. The teacher may need to scaffold this activity by revisiting previous learning experiences and by providing feedback to the students as the task progresses.

## **Task summary**

Discuss with the students xxxx.They will be aware of how to xxxx. Students can use xxxx. Working through a prediction phase early in the topic, students will have opportunities to compare predicted data with actual data collected to increase understanding.

Students will:

* research xxxx
* collect data on xxxx
* collect data using a variety of techniques to count xxxx, for example tally marks, string, counting with numbers
* collate and sort their data and represent it to show xxxx
* produce a graph which shows xxxx
* make decisions and answer questions about xxxx
* interpret their own data
* interpret the data of other students
* compare xxxx, for example xxxx
* present the data appropriately to an audience.

**Notes for teachers:** Data sets do not need to be large for this activity. Data interpretation and representation are the key focus. See Appendix 2 and [Student task sheet: Stepping out](http://www.digitaltechnologieshub.edu.au/docs/default-source/resource-bank/acara_f-2_student_task_sheet_data.pdf)*.*

**Digital Technologies**

**Achievement standard**

By the end of Year 2, students identify how common digital systems (hardware and software) are used to meet specific purposes. They use digital systems to represent simple patterns in data in different ways.

Students design solutions to simple problems using a sequence of steps and decisions. They collect familiar data and display them to convey meaning. They create and organise ideas and information using information systems, and share information in safe online environments.

**Content descriptions**

|  |
| --- |
| Collect, explore and sort data, and use digital systems to present the data creatively ([ACTDIP003](http://www.scootle.edu.au/ec/search?accContentId=ACTDIP003))  Recognise and explore patterns in data and represent data as pictures, symbols and diagrams ([ACTDIK002](http://www.scootle.edu.au/ec/search?accContentId=ACTDIK002)) |

## **Content strands** [X any that apply]

|  |  |  |  |
| --- | --- | --- | --- |
| **Digital Technologies knowledge and understanding** | | **Digital Technologies processes and production skills** | |
| Digital systems  Representation of data  Digital systems |  | Collecting, managing and analysing data  Creating digital solutions by:   * investigating and defining * generating and designing * producing and implementing * evaluating * collaborating and managing |  |

**Links to the key ideas** [X any that apply]

Read more about the .

|  |  |  |
| --- | --- | --- |
| **Creating preferred futures** | Students develop solutions to meet needs considering impacts on liveability, economic prosperity and environmental sustainability. |  |
| **Project management** | Students will develop skills to manage projects to successful completion through planning, organising and monitoring timelines, activities and the use of resources. |  |
| **Thinking in Technologies**   * Systems thinking | Systems thinking is a holistic approach to the identification and solving of problems where the focal points are treated as components of a system, and their interactions and interrelationships are analysed individually to see how they influence the functioning of the entire system. |  |
| * Design thinking | Design thinking involves the use of strategies for understanding design needs and opportunities, visualising and generating creative and innovative ideas, planning, and analysing and evaluating those ideas that best meet the criteria for success. |  |
| * Computational thinking | Computational thinking is a problem-solving method that is applied to create solutions that can be implemented using digital technologies. It involves integrating strategies, such as organising data logically, breaking down problems into parts, interpreting patterns and models and designing and implementing algorithms. |  |

**Links to the key concepts** [X any that apply]

The [key concepts](https://www.australiancurriculum.edu.au/f-10-curriculum/technologies/digital-technologies/structure/)that underpin the Digital Technologies curriculum establish a way of thinking about problems, opportunities and information systems and provide a framework for knowledge and practice. (Colour coding is based on the [Australian Computing Academy scheme](https://aca.edu.au/#what-is-the-digital-technologies-curriculum).)

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|  | **abstraction** | underpins all content, particularly the content descriptions relating to the concepts of data representation; and specification; algorithms; and implementation | |
|  | **data collection** | (properties, sources and collection of data) |  |
|  | **data representation** | (symbolism and separation) |  |
|  | **data interpretation** | (patterns and contexts) |  |
|  | **specification** | (descriptions and techniques) |  |
|  | **algorithms** | (following and describing) |  |
|  | **implementation** | (translating and programming) |  |
|  | **digital systems** | (hardware, software, and networks and the internet) |  |
|  | **interactions** | (people and digital systems, data and processes) |  |
|  | **impact** | (sustainability and empowerment) |  |

## **Cross-curriculum priorities** [X any that apply] [Read more…](https://www.australiancurriculum.edu.au/f-10-curriculum/cross-curriculum-priorities/)

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| --- | --- | --- |
| **Aboriginal and Torres Strait Islander histories and cultures** | **Asia and Australia’s engagement with Asia** | **Sustainability** |
|  |  |  |

## **General capabilities** [X any that apply] [Read more…](https://www.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/information-and-communication-technology-ict-capability/)

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| --- | --- | --- | --- | --- | --- | --- |
| **Literacy** | **Numeracy** | **ICT Capability** | **Critical and Creative Thinking** | **Ethical Understanding** | **Personal and Social Capability** | **Intercultural Understanding** |
|  |  |  |  |  |  |  |

## **Links to ICT Capability continuum: Level [ ]** [X any that apply][Read more…](https://www.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/information-and-communication-technology-ict-capability/)

Depending on the year level this activity is being used with please adjust content to appropriate level

|  |  |
| --- | --- |
| **Apply social and ethical protocols and practices when using ICT** | |
| recognise ownership of digital products that others produce and that what they create or provide can be used or misused by others (Level 2) |  |
| follow class rules about applying selected standard guidelines and techniques to secure digital information (Level 2) |  |
| follow class guidelines when sharing personal information and apply basic social protocols when using ICT to communicate (Level 1) |  |
| identify how ICT is used at home and at school (Level 2) |  |
| **Creating with ICT** | |
| use ICT to prepare simple plans to find solutions or answers to questions (Level 2) |  |
| experiment with ICT as a creative tool to generate simple solutions, modifications or data representations for particular audiences or purposes (Level 2) |  |
| **Communicating with ICT** | |
| use purposefully selected ICT tools safely to share and exchange information with appropriate local audiences (Level 2) |  |
| understand that computer mediated communications may be received later by the receiver (Level 2) |  |

**Links to Literacy**

Depending on the year level this activity is being used with adjust content to appropriate level.

xxxx

**Links to Numeracy**

Depending on the year level this activity is being used with adjust content to appropriate level

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