DTiF
Digital Technologies in focus
Initiative of and funded by the Australian Government Department of Education, Skills and Employment

acara
AUSTRALIAN CURRICULUM, ASSESSMENT AND REPORTING AUTHORITY

CLASSROOM IDEAS: FOUNDATION

Data collection and representation: what's in your lunchbox?

Figure 1: A fruit tally chart created by a teacher and students at Holy Family Parish School, ACT

Figure 2: Fruit with plastic stickers

Many schools are actively encouraging students to eat fresh fruits and vegetables.

The contents of lunchboxes or the types of fruit or vegetables eaten at crunch and sip/fruit break can provide a good source of data for students to represent. Data can be visualised using digital tools, or as an unplugged activity using tally marks (Figure 1), and then displayed in the classroom.

In Digital Technologies Foundation, students could:
- record data on waste/plastic-free foods
- use the plastic stickers that are attached to fruits (Figure 2) to create a pictograph
- explore how the same data can be represented in different ways
  - Since data can be represented as objects, picture or symbols, how many ways can your data be represented?
- represent data using simple software
  - How could you represent these data to share with an audience?

In Mathematics Foundation, students could:
- collect, sort and compare data represented by objects and images in response to given investigative questions that relate to familiar situations
- discuss any ideas students have about the data visualisations. What do the data show?

Links to the Australian Curriculum

Table 1: Aspects of the Australian Curriculum: Digital Technologies version 9 Foundation which may be addressed depending upon the task.

Digital Technologies *Achievement standard*	By the end of Foundation <mark>students show familiarity with digital systems and use them for a purpose. They represent data using objects, pictures and symbols</mark> and identify examples of data that is owned by them.
Strand Sub-strand	Digital Technologies Knowledge and understanding • Data representation
Content descriptions	• represent data as objects, pictures and symbols AC9TDIFK02
Mathematics *Achievement standard*	By the end of Foundation Year, students make connections between number names, numerals and position in the sequence of numbers from zero to at least 20. They use subitising and counting strategies to quantify collections. Students compare the size of collections to at least 20. They partition and combine collections up to 10 in different ways, representing these with numbers. Students represent practical situations that involve quantifying, equal sharing, adding to and taking away from collections to at least 10. They copy and continue repeating patterns. Students identify the attributes of mass, capacity, length and duration, and use direct comparison strategies to compare objects and events. They sequence and connect familiar events to the time of day. Students name, create and sort familiar shapes and give their reasoning. They describe the position and the location of themselves and objects in relation to other objects and people within a familiar space. <mark>Students collect, sort and compare data in response to questions in familiar contexts.</mark>
Strand	• Statistics
Content descriptions	• collect, sort and compare data represented by objects and images in response to given investigative questions that relate to familiar situations AC9MFST01

Technologies Core concepts	• Data • Computational thinking	**Digital Technologies Core concepts**	• Abstraction • Data representation
		General capabilities	• Digital Literacy • Literacy • Numeracy
Cross-curriculum priorities	• Sustainability[†] [†] *if waste-free options are explored*	**Learning area or subject connections**	• HPE • Science

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Table 2: Aspects of the Australian Curriculum: Digital Technologies version 8.4 F-2 which may be addressed depending upon the task.

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.
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) • Collect, explore and sort data, and use digital systems to present the data creatively* (ACTDIP003) ** If digital systems are not used only part of this content description is met.*

Key concepts	• data collection • data representation • data interpretation	*Key ideas*	Thinking in Technologies • computational thinking
Cross-curriculum priorities	• Sustainability[†] [†] *if waste-free options are explored*	*General capabilities*	• Information and Communication Technology (ICT) Capability • Literacy • Numeracy

Safety considerations: In implementing projects with a focus on food, care must be taken with regard to food safety and specific food allergies that may result in anaphylactic reactions. Some states and territories have their own specific guidelines that should be followed. For further information see:https://v9.australiancurriculum.edu.au/teacher-resources/understand-this-learning-area/technologies - technologies

In what ways could a food-related data collection and representation activity link to other subjects?

How could data collection and representation be integrated in Health and Physical Education, Mathematics or Design and Technologies?

Figure 3: Pizza school lunch – Laptop lunches for kindergarten bento box by Melissa CC BY 2.0 Source: *https://www.flickr.com/photos/buzzymelibee/8719314950*

Figure 4: A sandwich in a plastic bag

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