

DTiF

Digital Technologies in focus

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CLASSROOM IDEAS: FOUNDATION

What is a digital system and how do digital systems help us?

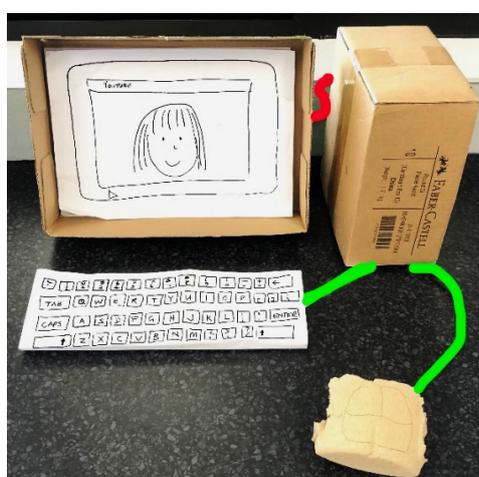


Figure 1: A cardboard computer with inputs: mouse and keyboard (joined with green cables) and output: monitor (joined with a red cable).



Figure 2: A role play space set up as a veterinary surgery with digital monitoring trolley.



Figure 3: Children playing shops. One girl uses a toy digital hand scanner at the cash register.

Digital systems are made up of hardware and software components that:

- receive data input
- process and store data
- output data in some way.

Digital systems are all around us in the form of computers, smartphones, scanners, cash registers and digital ticket readers. They are used by the local vet and by community firefighters. Giving students opportunities to understand what digital systems are and how people use them for different purposes is very important in the early years of schooling.

Opportunities to learn about digital systems could involve role-playing using a digital system and describing what is happening (see Figures 2 and 3) or talking to visitors who use digital systems in their workplaces such as farms, shops or hospitals.

Foundation students could:

- recognise digital systems that they interact with at home and school, for example smartphone, laptop or programmable toy
- play with (with guidance) and use different digital systems to explore what they do for a purpose, for example the class speaking to an expert via videoconference
- make a model of a digital system and use it in a role-play scenario, for example a cardboard box with a keyboard (see Figure 1) and screen with app icons
- watch a video about people using digital systems, especially ones relevant to the local area
- find digital systems at school (see Figure 4) in the community and discuss how and why are they used

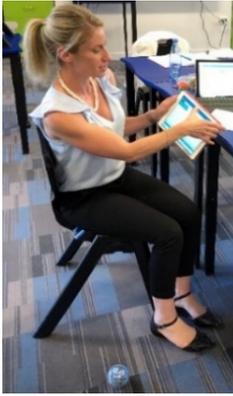


Figure 4: Demonstrating a digital system using an iPad and Sphero

- talk about where they have seen a digital system
- discuss how digital systems help workers do their jobs
- record, with permission, audio or video of local community members' stories to share in class, for example sharing cultural stories of First Nations Australians
- take photos, with permission, to share with others, for example close-up photos of First Nations Australians' material culture, such as woven mats or baskets revealing intricate detail.

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 students show familiarity with digital systems and use them for a purpose. They represent data using objects, pictures and symbols and identify examples of data that is owned by them.		
Strand Sub-strand	Digital Technologies Knowledge and understanding <ul style="list-style-type: none"> Digital systems 		
Content descriptions	<ul style="list-style-type: none"> recognise and explore digital systems (hardware and software) for a purpose AC9TDIFK01 		
Technologies Core concepts	<ul style="list-style-type: none"> Systems Systems thinking Computational thinking 	Digital Technologies Core concepts	<ul style="list-style-type: none"> Digital systems
		General capabilities	<ul style="list-style-type: none"> Digital Literacy Literacy
Cross-curriculum priorities		Learning area or subject connections	<ul style="list-style-type: none"> The Arts – Visual Arts The Arts – Drama

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 <ul style="list-style-type: none"> Digital systems 		
Content descriptions	<ul style="list-style-type: none"> Recognise and explore digital systems (hardware and software components) for a purpose (ACTDIK001) 		
Key concepts	<ul style="list-style-type: none"> digital systems 	Key ideas	Thinking in Technologies <ul style="list-style-type: none"> computational thinking
Cross-curriculum priorities		General capabilities	<ul style="list-style-type: none"> Information and Communication Technology (ICT) Capability Literacy

Inquiry questions

1. What digital systems are used in transport in your community?
2. How can digital systems help us communicate?
3. What kind of digital systems do you and your teachers use at school?

Useful links

- See also the Australian Curriculum: Technologies glossary
[https://www.australiancurriculum.edu.au/f-10-curriculum/technologies/glossary/ \(V8.4\)](https://www.australiancurriculum.edu.au/f-10-curriculum/technologies/glossary/ (V8.4))
- Digital Technologies in focus project (DTIF) Resources
<https://www.australiancurriculum.edu.au/resources/digital-technologies-in-focus/resources/>

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