

DTiF

Digital Technologies in focus

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CLASSROOM IDEAS: YEARS F–2

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

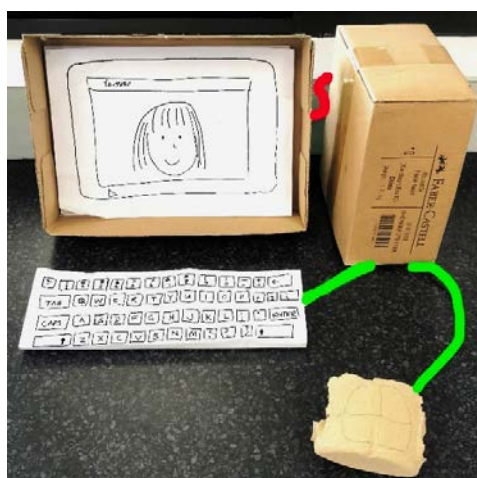


Figure 1: A cardboard computer with inputs: mouse and keyboard (joined with green cables) and output: monitor (joined with a red cable).



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.

A digital system is described in the Australian Curriculum glossary as digital hardware and software components (internal and external) used to transform data into a digital solution.

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.

F–2 students could:

- name and or label the parts of a digital system
- make a simple model of basic hardware components such as a screen or speakers (outputs) and keyboard, microphone or mouse (inputs) (see Figure 1) using green string to indicate input and red string (or tactile materials: curly/straight, wool/plastic) to indicate data output
- watch a video about people using digital systems, especially ones relevant to the local area
- identify digital systems, components and their purpose (see Figure 5)
- find digital systems at school (e.g. Figure 4) or in the community and discuss how and why are they used
- talk about where they have seen a digital system
- discuss how digital systems help workers do their jobs.

Links to the Australian Curriculum

Table 1: Aspects of the Australian Curriculum: Digital Technologies F–2 which may be addressed depending upon the task.

<p>Digital Technologies</p> <p>Achievement standard</p>	<p>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.</p> <p>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.</p>		
<p>Strands</p>	<p>Digital Technologies knowledge and understanding</p> <ul style="list-style-type: none"> Digital systems 		
<p>Content descriptions</p>	<ul style="list-style-type: none"> Recognise and explore digital systems (hardware and software components) for a purpose (ACTDIK001) 		
<p>Key concepts</p>	<ul style="list-style-type: none"> digital systems 	<p>Key ideas</p>	<p>Thinking in Technologies</p> <ul style="list-style-type: none"> computational thinking
<p>Cross-curriculum priorities</p>	<p>General capabilities</p>		<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/>
- Digital Technologies in focus project (DTIF) Resources <https://www.australiancurriculum.edu.au/resources/digital-technologies-in-focus/resources/>



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



Figure 5: Peripheral devices cards used to learn about input and output in digital systems

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