CLASSROOM IDEAS: YEARS 1-2

What is a digital system and how do digital systems help us?
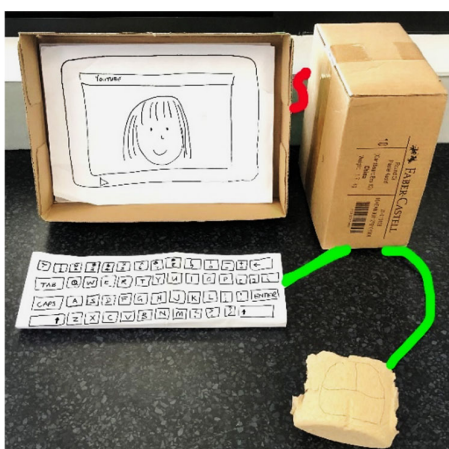
Figure 1: A cardboard computer with inputs: mouse and keyboard (joined with green cables) and output: monitor (joined with a red cable).

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.

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

Year 1 and 2 students could:

- name and use digital systems that they interact with at home and school, for example using a touchpad to move the cursor on a laptop, or the keyboard to type a simple message on a tablet
- use different digital systems to explore what they do and how to use them, for example selecting the camera icon allows them to take photos of things that are a familiar shape
- make a model of a digital system, 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
- talk about where they have seen a digital system
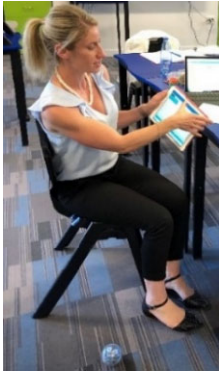- discuss how digital systems help workers do their jobs

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

- find digital systems at school (see Figure 4) in the community and discuss how and why are they used
- explore digital systems to better understand how they are used to provide communities with essential services, for example looking at the systems and components that allow First Nations Australians in communities classified as remote to watch their favourite television shows.

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

Links to the Australian Curriculum

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

Digital Technologies *Achievement standard*	By the end of Year 2 students show how simple digital solutions meet a need for known users. Students represent and process data in different ways. They follow and describe basic algorithms involving a sequence of steps and branching. With assistance, students access and use digital systems for a purpose. They use the basic features of common digital tools to create, locate and share content, and to collaborate, following agreed behaviours. Students recognise that digital tools may store their personal data online.		
Strand *Sub-strand*	Digital Technologies Knowledge and understanding • Digital systems		
Content descriptions	• identify and explore digital systems and their components for a purpose AC9TDI2K01		
Technologies Core concepts	• Systems • Systems thinking • Computational thinking	*Digital Technologies Core concepts*	• Digital systems
		General capabilities	• Digital Literacy • Literacy
Cross-curriculum priorities		*Learning area or subject connections*	• Design and Technologies • English • The Arts

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

- Digital Technologies Hub digital systems resources https://www.digitaltechnologieshub.edu.au/teach-and-assess/classroom-resources/topics/

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