

DTiF

Digital Technologies in focus

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ASSESSMENT AND
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DIGITAL SYSTEMS CARDS F-4

About digital systems in the Australian Curriculum: Digital Technologies

Digital systems are a core concept in Digital Technologies. The digital systems content descriptions focus on the components of digital systems: hardware, software and networks. In the early years, students learn about a range of hardware and software and progress to an understanding of how data are transmitted between components within a system, and how the hardware and software interact to form networks.

This resource comprises two sets of cards. They can be used for activities to support building knowledge and understanding of digital systems with a focus on the components of digital systems; in particular, hardware and peripheral devices.

Activity ideas

1. Flashcards: Print out and cut up cards for flashcard games. Students may like to add definitions on the flip side of each card.
2. Inputs and outputs: Which of the components pictured are an input, an output or both? Why?
3. Examples: How many of these components of digital systems or whole digital systems can you find in your school or community? Can you take a photo or draw a diagram of how they connect together?
4. Symbolic representation: The images used in this resource are symbols. Symbols are an example of another key concept in Digital Technologies: data representation. How well do the symbols pictured clearly represent each item? What might be an even better way to represent any or all of these digital inputs or outputs?
5. Vocabulary: What is the vocabulary needed to label or talk about digital systems? What do the acronyms used to name some of the components mean in full?



Figure 1: A Blue-Bot

What questions could you ask about this Blue-Bot in terms of digital systems?

Links to the Australian Curriculum

Table 1 outlines Australian Curriculum links version 9. Table 2 outlines Australian Curriculum links version 8.4.

Table 1: Links to the Australian Curriculum: Digital Technologies F–4 (V9)

<p>Digital Technologies</p> <p>Achievement standards</p>	<p>Foundation</p> <p>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.</p> <p>1–2</p> <p>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.</p> <p>3–4</p> <p>By the end of Year 4 students create simple digital solutions and use provided design criteria to check if solutions meet user needs. Students process and represent data for different purposes. They follow and describe simple algorithms involving branching and iteration and implement them as visual programs. Students securely access and use digital systems and their peripherals for a range of purposes, including transmitting data. They use the core features of common digital tools to plan, create, locate and share content, and to collaborate, following agreed behaviours. Students identify their personal data stored online and recognise the risks.</p>		
<p>Strands</p> <p>Sub-strands</p>	<p>Digital Technologies knowledge and understanding</p> <ul style="list-style-type: none"> Digital systems 		
<p>Content descriptions</p>	<p>Foundation</p> <ul style="list-style-type: none"> recognise and explore digital systems (hardware and software) for a purpose AC9TDIFK01 <p>1–2</p> <ul style="list-style-type: none"> identify and explore digital systems and their components for a purpose AC9TDI2K01 <p>3–4</p> <ul style="list-style-type: none"> explore and describe a range of digital systems and their peripherals for a variety of purposes AC9TDI4K01 		
<p>Technologies core concepts</p>	<ul style="list-style-type: none"> Systems Computational thinking Systems thinking 	<p>Digital Technologies core concepts</p>	<ul style="list-style-type: none"> Digital systems
<p>Cross-curriculum priorities</p>	<ul style="list-style-type: none"> Sustainability 	<p>General capabilities</p>	<ul style="list-style-type: none"> Digital Literacy Literacy

Table 2: Links to the Australian Curriculum: Digital Technologies F–4 (V8.4)

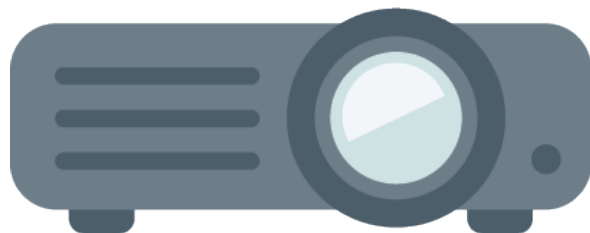
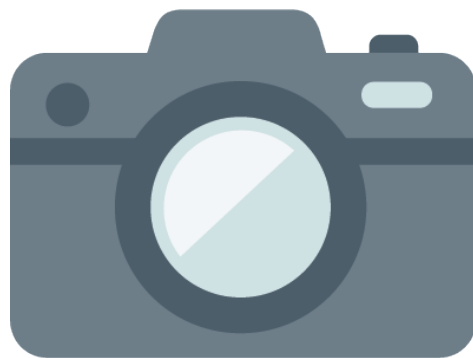
<p>Digital Technologies</p> <p>Achievement standards</p>	<p>F–2</p> <p>By the end of Year 2, students identify how common digital systems (hardware and software) are used to meet specific purposes. They use digital systems to represent simple patterns in data in different ways.</p> <p>Students design 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>3–4</p> <p>By the end of Year 4, students describe how a range of digital systems (hardware and software) and their peripheral devices can be used for different purposes. They explain how the same data sets can be represented in different ways.</p> <p>Students define simple problems, design and implement digital solutions using algorithms that involve decision-making and user input. They explain how the solutions meet their purposes. They collect and manipulate different data when creating information and digital solutions. They safely use and manage information systems for identified needs using agreed protocols and describe how information systems are used.</p>		
<p>Strands</p>	<p>Digital Technologies knowledge and understanding</p> <ul style="list-style-type: none"> Digital systems 		
<p>Content descriptions</p>	<p>F–2</p> <ul style="list-style-type: none"> Recognise and explore digital systems (hardware and software components) for a purpose (ACTDIK001) <p>3–4</p> <ul style="list-style-type: none"> Identify and explore a range of digital systems with peripheral devices for different purposes, and transmit different types of data (ACTDIK007) 		
<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 systems thinking
<p>Cross-curriculum priorities</p>	<ul style="list-style-type: none"> Sustainability 	<p>General capabilities</p>	<ul style="list-style-type: none"> Information and Communication Technology (ICT) Capability Literacy

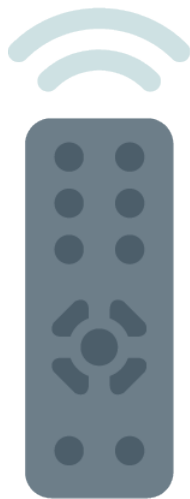
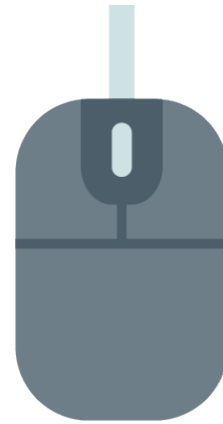
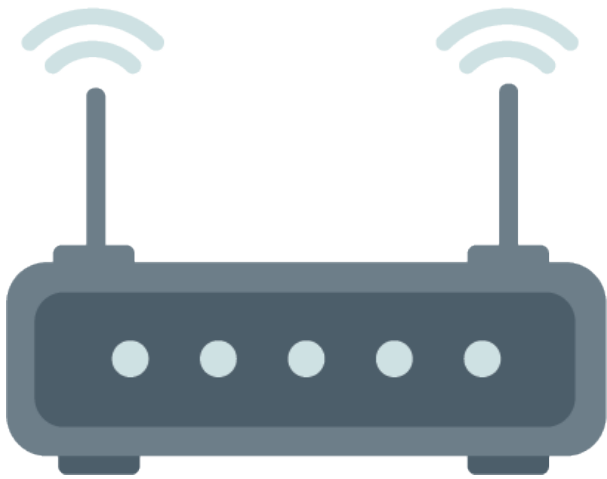
Useful links

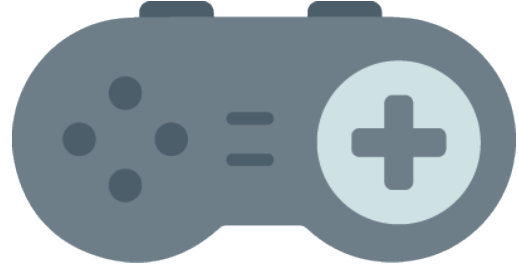
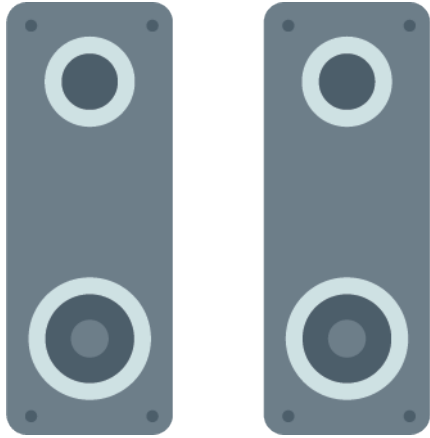
- Australian Curriculum glossary definition of digital system
<https://www.australiancurriculum.edu.au/f-10-curriculum/technologies/glossary/?letter=D>
- Australian Computer Academy (ACA) unpack the curriculum, digital systems
<https://aca.edu.au/curriculum/systems/>
- Digital Technologies Hub – digital systems resources
<https://www.digitaltechnologieshub.edu.au/teachers/topics/digital-systems>

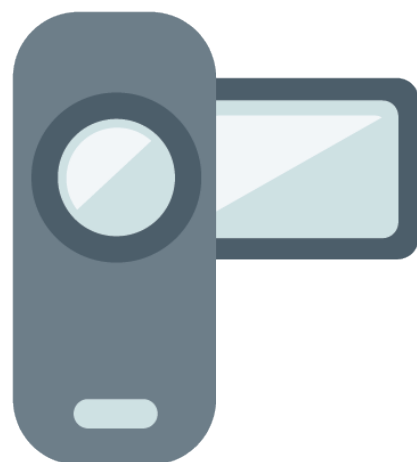
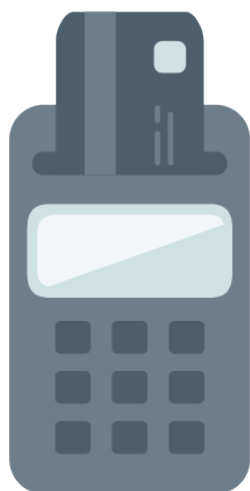
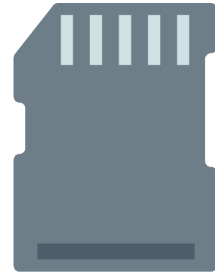
All images in this resource used with permission

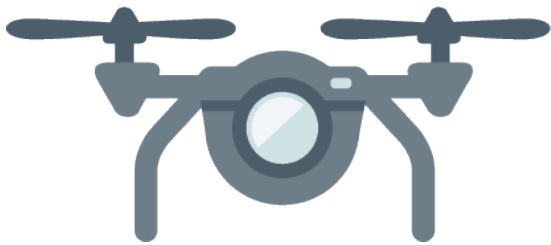
Digital systems – inputs and outputs cards (symbols only)











Digital systems – inputs and outputs cards (with labels)



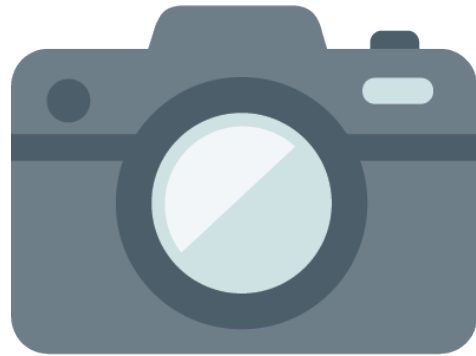
tablet and stylus



smart watch



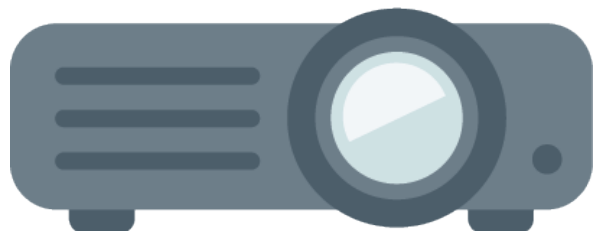
global positioning system (GPS)



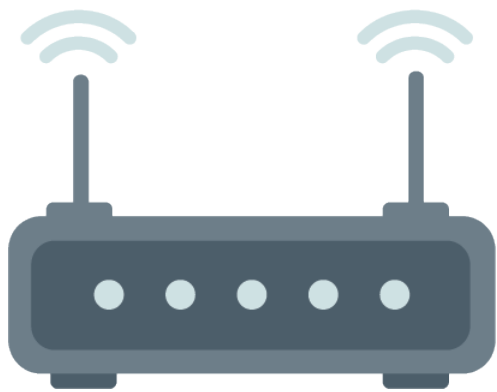
digital camera



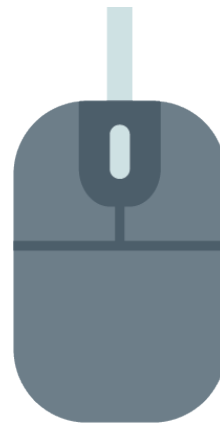
headphones and microphone



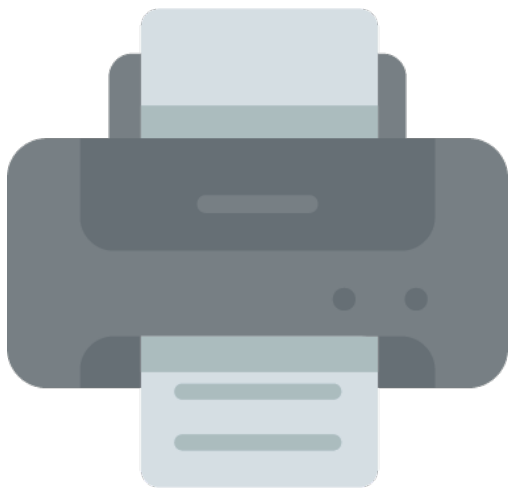
data projector



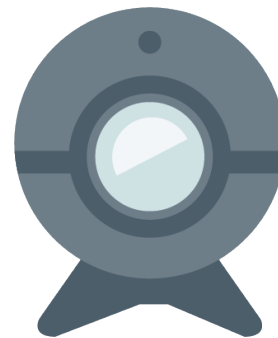
router/modem



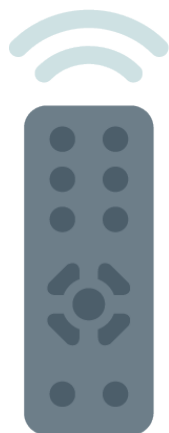
mouse



printer



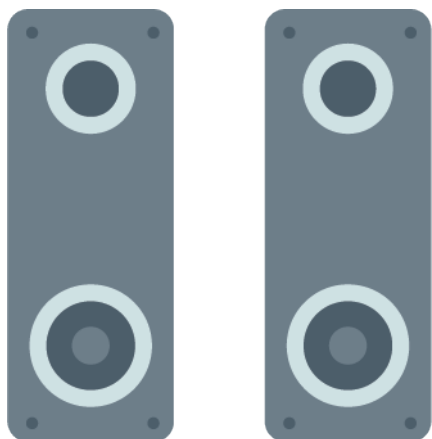
webcam



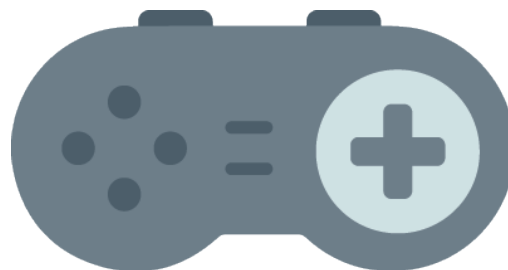
remote control



monitor



speakers



game controller



music/audio player and headphones



radio remote controller



smartphone



tablet



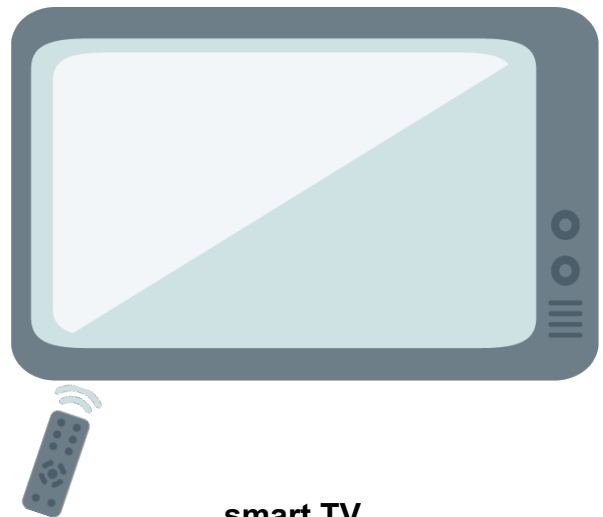
SIM card



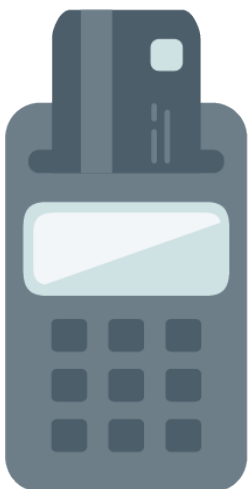
SD card



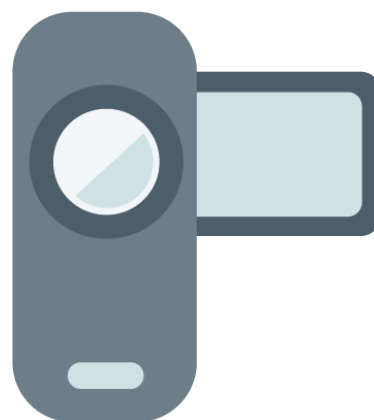
surveillance camera



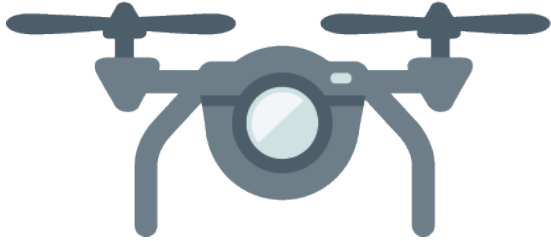
smart TV



credit card reader



video camera/camcorder



drone/unmanned aerial vehicle (UAV)



laptop computer



USB drive/USB mass storage device



keyboard



digital radio



virtual reality (VR) headset