

# DTiF

Digital Technologies in focus

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ASSESSMENT AND  
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## A–Z Digital Technologies vocabulary F–6

### Links to the Australian Curriculum

Hearing, seeing, using and understanding the language of Digital Technologies is important for building Digital Technologies knowledge and understanding and Digital Technologies processes and production skills. A good starting point is the glossary for the Australian Curriculum. It captures vocabulary represented in the Technologies curriculum. See <https://www.australiancurriculum.edu.au/f-10-curriculum/technologies/glossary/>

Australian CURRICULUM

F-10 Curriculum ▾ Senior secondary curriculum ▾ Parent information ▾ Student diversity ▾

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### Glossary

Search

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

**algorithm**

Step-by-step procedures required to solve a problem. For example, to find the largest number in a list of positive numbers:

- Note the first number as the largest.
- Look through the remaining numbers, in turn, and if a number is larger than the number found in 1, note it as the largest.
- Repeat this process until complete. The last noted number is the largest in the list.

An algorithm may be described in many ways. Flowcharts are often useful in visualising an algorithm.

**data**

In Digital Technologies, discrete representation of information using number codes. Data may include characters (for example, alphabetic letters, numbers and symbols), images, sounds and/or instructions that, when represented by number codes, can be manipulated, stored and communicated by digital systems. For example, characters may be represented using ASCII code or images may be represented by a bitmap of numbers representing each 'dot' or 'pixel'.

**digital solution**

A result (or output) of transforming data into information or action using digital systems, skills, techniques and processes to meet a need or opportunity.

**digital system**

Digital hardware and software components (internal and external) used to transform data into a digital solution. When digital systems are connected, they form a network. For example:

- a smartphone is a digital system that has software (apps, an operating system), input components (for example, touch screen, keyboard, camera and microphone), output components (for example, screen and speakers), memory components (for example, silicon chips, solid state drives), communication components (for example, SIM card, wi-fi, bluetooth or mobile network antennas), and a processor made up of one or more silicon chips.

### Digital Technologies and literacy

Discipline-specific vocabulary in Digital Technologies includes words with the prefix *inter-*, meaning 'between', 'among', 'mutually', 'reciprocally' or 'together'. For example, 'interactive', where things or persons act on each other (for example a computer and user) and; the 'internet', the communications system created by the interconnecting networks of computers around the world. Knowledge of word parts is useful when considering enhancing literacy. In the National Literacy Learning Progression, the Reading and viewing element, the Understanding texts sub-element, and the Vocabulary indicators, a student at Level 8 can 'use knowledge of prefixes and suffixes to read and interpret unfamiliar words'. See <https://www.australiancurriculum.edu.au/resources/national-literacy-and-numeracy-learning-progressions/national-literacy-learning-progression/>

## Key ideas: Thinking in Technologies

### Systems thinking

A system is an organised group of related objects or components that form a whole. Systems thinking is a holistic approach to the identification and solving of problems where the focal points are treated as components of a system, and their interactions and interrelationships are analysed individually to see how they influence the functioning of the entire system.

### Design thinking

Design thinking involves the use of strategies for understanding design needs and opportunities, visualising and generating creative and innovative ideas, planning, and analysing and evaluating those ideas that best meet the criteria for success.

Design thinking underpins learning in Design and Technologies. Design processes require students to identify and investigate a need or opportunity; generate, plan and realise designed solutions; and evaluate products and processes.

### Computational thinking

Computational thinking is a problem-solving method that is applied to create solutions that can be implemented using digital technologies. It involves integrating strategies, such as organising data logically, breaking down problems into parts, interpreting patterns and models, and designing and implementing algorithms.

See [www.australiancurriculum.edu.au/f-10-curriculum/technologies/key-ideas/](http://www.australiancurriculum.edu.au/f-10-curriculum/technologies/key-ideas/)

## Key concepts

A number of key concepts underpin the Digital Technologies curriculum:

- **abstraction**, which underpins all content, particularly the content descriptions relating to the concepts of data representation, and specification, algorithms and implementation
- **data collection** (properties, sources and collection of data), **data representation** (symbolism and separation) and **data interpretation** (patterns and contexts)
- **specification** (descriptions and techniques), **algorithms** (following and describing) and **implementation** (translating and programming)
- **digital systems** (hardware, software, and networks and the internet)
- **interactions** (people and digital systems, data and processes) and **impacts** (sustainability and empowerment).

See [www.australiancurriculum.edu.au/f-10-curriculum/technologies/digital-technologies/structure/](http://www.australiancurriculum.edu.au/f-10-curriculum/technologies/digital-technologies/structure/)

## Vocabulary lists

The following information and lists are provided for your reference; see suggestions about related vocabulary and various ways it can be organised and discussed.

## List 1: Australian Curriculum: Digital Technologies vocabulary by band

The following vocabulary can be found in the band description, achievement standards and content descriptions of the Australian Curriculum: Digital Technologies F–6.

F–2	3–4	5–6
algorithms	abstraction	abstraction
computational thinking	algorithms	algorithms
data	branching (decisions)	branching (decision-making)
data collection	cameras	complex systems
data representation	components	information systems
decisions (algorithms)	computational thinking	computational thinking components
digital solutions	data collection	data interpretation
digital systems	data representation	data processing
hardware and software components	data sets	data protection
impact	decisions (algorithms)	data representation
implementation	digital microscopes	data visualisation
information communication	digital solutions	digital project
information systems	digital systems	digital solution
interactions	graphical elements	functional requirements
online environments	hardware and software	hardware and software
online learning	information systems	interactive stories
represent data	interactive adventures	iteration repetition
robotic devices	interactive whiteboard	networks
robotic toys	online environments	privacy of personal information
software applications	peripheral devices	protocols (social, ethical and technical)
specification	protocols (ethical and social)	real world systems
	real world systems	repetition
	text instructions	safe data storage
	transmit data	transmit data
	user input	user input
	visual programming languages	user interface design
	visual programs	visual program
		visual programming

## List 2: Digital Technologies–related introductory to advanced vocabulary

The following vocabulary is appropriate for students at beginning to advanced levels.

Introductory terms	Intermediate terms	Advanced terms
AirDrop	abstraction	asymmetric digital subscriber line (ADSL)
algorithm	animated GIF	analog
augmented reality (AR)	attachment	Android
binary	avatar	artificial intelligence (AI)
bluetooth	blog	assistive technology
bookmark	byte	bandwidth
browser	cloud storage	broadband
coding	CPU	cache
computational thinking	debug	completely automated public Turing test to tell computers and humans apart (captcha)
cyber safety	decompose	cookie
digital citizen	digital footprint	cybercrime
digital technology	Dropbox	cybersecurity
download	flash drive	encryption
hard disk	GIF	ethernet
hashtag #	JPEG	event
input device	gigabyte	firewall
internet	micro USB	geotagging
loop	operating system (OS)	internet of things (IoT)
monitor	portable document format (PDF)	internet service provider (ISP)
mouse	pixel	local area network (LAN)
output device	printed circuit board (PCB)	malware
peripheral	pseudocode	modem
QWERTY	resolution	open source
search engine	red, green and blue (RGB)	ports
SMS	spam	random access memory (RAM)
tablet	sync	retina display
troubleshooting	podcast	server
user interface design	terabyte	zip file
virtual reality (VR)	uniform resource locator (URL)	
wi-fi	virus	

### List 3: Technical and other vocabulary

The following vocabulary indicates one method for organising related topic vocabulary.

<b>Coding terms</b>	virtual reality (VR)	GIF
algorithm	<b>Software terms</b>	JPEG
binary	Android	portable document format (PDF)
coding	augmented reality (AR)	zip file
debug	open source	<b>Internet /other terms</b>
event	operating system (OS)	asymmetric digital subscriber line (ADSL)
loop	<b>Technical terms</b>	attachment
pseudocode	abstraction	avatar
<b>Hardware terms</b>	AirDrop	bandwidth
central processing unit (CPU)	analog	blog
ethernet	artificial intelligence (AI)	bookmark
input device	assistive technology	broadband
modem	bluetooth	browser
monitor	computational thinking	cache
mouse	cybercrime	completely automated public Turing test to tell computers and humans apart (captcha)
output device	cybersecurity	cookie
peripheral	decompose	cyber safety
printed circuit board (PCB)	digital footprint	cyberspace
ports	digital technology	digital citizen
random access memory (RAM)	internet of things (IoT)	domain name
retina display	local area network (LAN)	download
tablet	pixel	firewall
<b>Data storage terms</b>	QWERTY	hashtag #
byte	resolution	internet
cloud storage	red, green and blue (RGB)	internet service provider (ISP)
Dropbox	short messaging service (SMS)	malware
encryption	sync	search engine
flash drive	podcast	spam
gigabyte	troubleshooting	URL
hard disk	user interface design	virus
micro USB	<b>File formats</b>	wi-fi
terabyte	animated GIF	

## Ideas for the classroom

There are a number of ways students could be exposed to the vocabulary of the Australian Curriculum: Digital Technologies including:

- wall displays (Figure 1)
- labelled diagrams or posters (Figure 2)
- Digital Technologies vocabulary in spelling word lists
- flashcards or concept cards created by the student with:
  - Definitions: Students write their own definitions, based on their understanding of a word in context. They then check their definition using a dictionary and adjust it if necessary.
  - Characteristics or features: Students record a short list of characteristics for their words. This could include prefixes or suffixes, synonyms and antonyms of a word, adjectives that describe a word or vocabulary associated with a word, etc.
  - Examples: Students add example words from an activity, text or from personal experiences using text and or images.
  - Sentences: Students write sentences using collected words.

Alternatively, students could create a digital solution to assist with learning or storing vocabulary such as:

- a digital dictionary (which might be designed to include branching or decision making) made using presentation or other software. This solution could incorporate hyperlinks.
- an interactive dictionary in a visual or text-based coding language (Figure 3) which requires user input of a word to display a definition.

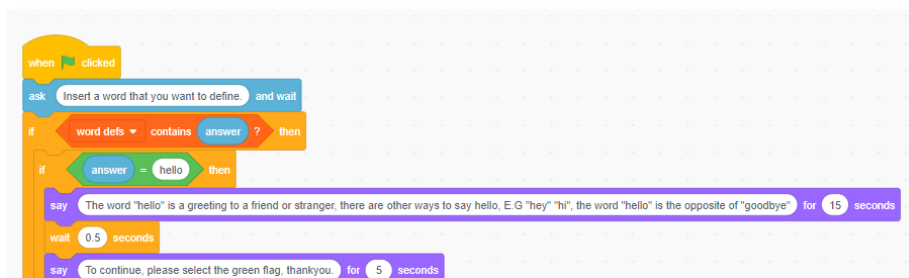


Figure 3: A example of visual programming for an interactive dictionary created in Scratch  
Source: <https://scratch.mit.edu/> CC BY-SA 2.0

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Figure 1: A wall display at Gordon Public School, ACT

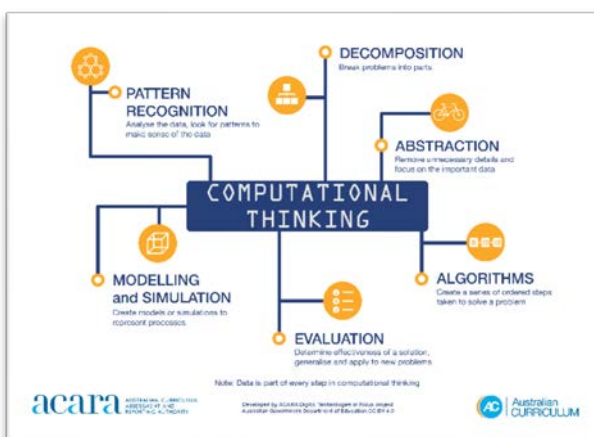


Figure 2: ACARA's computational thinking poster