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://v9.australiancurriculum.edu.au/downloads/learning-areas/Technologies](https://v9.australiancurriculum.edu.au/downloads/learning-areas#accordion-154e4cea74-item-cb35c6e60a)

# 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://v9.australiancurriculum.edu.au/curriculum-information/understand-this-general-capability/literacy>

# Core concepts: 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 [https://v9.australiancurriculum.edu.au/teacher-resources/understand-this-learning-](https://v9.australiancurriculum.edu.au/teacher-resources/understand-this-learning-area/technologies#technologies) [area/technologies#technologies](https://v9.australiancurriculum.edu.au/teacher-resources/understand-this-learning-area/technologies#technologies)

# Core concepts

A number of core concepts underpin the Digital Technologies curriculum:

* **abstraction**, reducing complexity and defining the main idea or focus
* **data acquisition** (numerical, categorical or structured values acquired or calculated to create information), **data representation** (data being represented and structured symbolically for storage, use and communication, by people and in digital systems) and **data interpretation** (extracting meaning from data)
* **specification** (defining a problem precisely, identifying requirements, breaking a problem into manageable pieces), **algorithms** (precise sequences of steps and decisions needed to solve a problem) and **implementation** (automation of an algorithm, typically by writing a computer program)
* **digital systems** (hardware, software, and networks)
* **Privacy and security** (protection of data in digital systems)

See [https://v9.australiancurriculum.edu.au/teacher-resources/understand-this-learning-](https://v9.australiancurriculum.edu.au/teacher-resources/understand-this-learning-area/technologies#digital-technologies) [area/technologies#digital-technologies](https://v9.australiancurriculum.edu.au/teacher-resources/understand-this-learning-area/technologies#digital-technologies)

# 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.

|  |  |  |  |
| --- | --- | --- | --- |
| **Foundation** | **1–2** | **3–4** | **5–6** |
| data | algorithms | abstraction | abstraction |
| digital systems | computational thinking | algorithms | algorithms |
| hardware and software | 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 | user stories |
|  | 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, ethicaland 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.

|  |  |  |
| --- | --- | --- |
| ***Coding terms*** | virtual reality (VR) | GIF |
| algorithm | ***Software terms*** | JPEG |
| binary | Android | portable document format (PDF) |
| coding | augmented reality (AR) | zip file |
| debug | open source | ***Internet /other terms*** |
| event | operating system (OS) | asymmetric digital subscriber line (ADSL) |
| loop | ***Technical terms*** | attachment |
| pseudocode | abstraction | avatar |
| ***Hardware terms*** | 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 |
| ***Data storage terms*** | 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 | ***File formats*** | 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.

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



*Figure 2: ACARA’s computational thinking poster. Source:*

*[https://v9.australiancurriculum.edu.au/downloads/learning-areas Technologies](https://v9.australiancurriculum.edu.au/downloads/learning-areas%20Technologies)*

* + 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/*](https://scratch.mit.edu/) *CC BY-SA 2.0*

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