Western Australian Curriculum

Technologies | Digital Technologies

Scope and sequence of the mandated curriculum content

Pre-primary–Year 10 | Revised curriculum

For familiarisation in 2025

**Acknowledgement of Country**

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Overview

The current Western Australian Curriculum: Technologies was adopted and adapted from the Australian Curriculum version 8.4.

The revised Western Australian Curriculum: Technologies is adopted and adapted from the Australian Curriculum version 9.

The Technologies learning area comprises two subjects: Design and Technologies and Digital Technologies. The Technologies curriculum is written on the basis that students will study both Technologies subjects from Pre-primary to the end of Year 8. In Years 9 and 10 the study of Technologies is optional.

Guide to reading this document

The Scope and sequence for Digital Technologies shows the **mandated** curriculum for teaching, written as **content descriptions** across year levels so that a sequence of content can be viewed across the years of schooling from Pre‑primary to Year 10.

The **Digital Technologies** strands for **Pre-primary to Year 6** include: Digital systems; Data representation; Privacy and security; Digital implementation; and Design thinking skills.

The **Digital Technologies** strands for **Years 7–10** include: Digital systems; Data representation; Acquiring, managing and analysing data; Privacy and security; Digital implementation; and Design thinking skills.

The **Design thinking skills** strand for **Pre-primary to Year 10** includes the sub-strands: Project management; Investigating and defining; Designing; Producing and implementing; and Evaluating. This strand is shared with the Design and Technologies subject.

The tables below outline the subject organisation for the Pre-primary to Year 10 Digital Technologies curriculum.

**Pre-primary to Year 6**

|  |  |  |  |
| --- | --- | --- | --- |
| **Digital systems** | **Data representation** | **Privacy and security** | **Digital implementation** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Design thinking skills** | | | | |
| Project management | Investigating and defining | Designing | Producing and implementing | Evaluating |

**Years 7–10**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Digital systems** | **Data representation** | **Acquiring, managing and analysing data** | **Privacy and security** | **Digital implementation** |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Design thinking skills** | | | | |
| Project management | Investigating and defining | Designing | Producing and implementing | Evaluating |

Pre-primary–Year 6

Strand: Digital systems

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Digital systems have common features, including hardware devices and software, and are used at home, in school and in the community | Digital systems have hardware and software that are used together | Digital systems, including hardware devices and software, are used for an identified purpose | Digital systems and peripheral devices are connected and used together for various purposes | Digital systems, including peripheral devices, are used to transfer and store different types of data | Digital systems have main internal components that perform particular functions to achieve a purpose | Digital systems are connected in wired and wireless networks to transmit data for a variety of purposes |

Strand: Data representation

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Data can be represented as objects and images | Data can be represented as images, symbols, numbers and words | Data can have patterns and may be represented as diagrams, symbols, numbers and words | Data is of different types and can be represented in various ways | Data of the same type can be represented in different ways depending on the purpose | Data of all types, including text, numeric, sound and images, are represented using codes | Data can be represented by on and off states (zeros and ones in binary) |

Strand: Privacy and security

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Some data is personal and owned by them | Some data is personal, owned by them and can be shared with trusted people | Some personal data may be safely shared online with specific people using trusted platforms | Different types of personal data are shared and stored online | Personal data that is shared and stored online can pose risks | Personal data can be used to create a permanent digital footprint | Digital footprint and privacy considerations when collecting user data |
| Steps to take when encountering unexpected inappropriate content, pop‑ups, or uninitiated contact | Access their school account, with assistance, using a recorded username and password | Independently access their school account with a recorded username and password, and log out | Access their school account, using a unique private memorised password, and logging out afterwards | Access their school account, using a memorised password. It should be easy to remember but difficult for others to guess. Risks of not logging out | Access multiple personal accounts using unique passphrases or biometrics. Risks of password reuse and not logging out | Access multiple personal accounts using unique passphrases or biometrics. Risks of password reuse and practices to reduce risk to their personal accounts |

Strand: Digital implementation

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|  |  | Create an algorithm (sequence of steps) including decisions made by the user | Represent algorithms (sequence of steps), including decisions made by the user (branching) using flowcharts | Represent an algorithm (sequence of steps) involving decisions (branching) and repetition using flowcharts | Design algorithms in plain English and/or flowcharts that involve user input, variables and control structures (sequence, decisions and repetition) | Design algorithms in plain English and/or flowcharts that involve user input, variables and control structures (sequence, decisions and various types of iteration: For, Repeat, While) |
| Follow an algorithm (sequence of steps) to achieve an outcome | Follow a visual representation of an algorithm (sequence of steps) | Follow algorithms (sequence of steps) including decisions made by the user | Implement algorithms (sequence of steps) in a visual programming environment to include decisions made by the user (branching) | Implement algorithms (sequence of steps) in a visual programming environment to include decisions (branching) and repetition | Implement algorithms in a visual programming environment involving variables and control structures (sequence, decisions and repetition) with user input | Implement algorithms in a visual programming environment involving variables and control structures (sequence, decisions, input and various types of iteration) |

Strand: Design thinking skills

Sub-strand: Project management

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Share ideas to develop a solution | Share ideas and work with others to develop a solution | Plan, share ideas and work with others to develop a solution for a known user | Communicate ideas and follow a plan with consideration of time management, to develop a solution | Use agreed protocols and management roles to communicate ideas, plan and make decisions, to develop solutions | Use agreed protocols and management roles to communicate decisions, plan and manage time, to develop designed solutions | Use agreed protocols to set goals, manage competing factors, resources and time, to plan, develop and communicate decisions, when developing designed solutions for a given task |

Sub-strand: Investigating and defining

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Explore the purpose for design | Explore ideas and design opportunities for a personal need | Explore ideas and design opportunities for a known user | Define ideas and design opportunities for individual and/or local needs | Define the features of a design brief and the requirements of a design task for a community need | Break down a design brief to define the purpose and requirements for a given task | Break down a design brief to define the purpose, requirements and constraints for a given task |
|  |  |  |  | Investigate and select resources based on properties for the given task | Investigate and select resources based on properties and functions for the given task | Investigate and select resources considering constraints, properties and functions appropriate for the given task |

Sub-strand: Designing

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Design solutions through discussion, drawing and/or modelling to meet a personal need | Design solutions through drawing, modelling and/or a sequence of steps | Design solutions generated and communicated through discussion, drawing, modelling and/or a sequence of steps | Design solutions created with labelled drawings, use of technical terms and/or a sequence of steps | Design solutions through use of labelled drawings, technical terms, decision-making and/or a sequence of steps | Design solutions considering competing factors, with annotated diagrams, storyboards and/or a sequence of steps, using technical terms and an iterative process | Design alternative solutions achieved through an iterative process, including critical thinking, graphical representations, use of a range of technologies, techniques, technical terms and/or a sequence of steps |

Sub-strand: Producing and implementing

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Use available technologies and materials to safely create a solution | Use available technologies and materials to safely create a preferred solution | Use given equipment and technologies to safely create a solution | Use appropriate technologies and components with given equipment and follow agreed protocols to produce a designed solution | Use appropriate technologies, components and/or equipment and follow agreed protocols to produce a designed solution | Use technologies, components and/or equipment to implement agreed protocols to produce a designed solution | Use a range of technologies, components and/or equipment to implement agreed protocols to produce a designed solution |

Sub-strand: Evaluating

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Use personal preferences to evaluate the solution | Use personal preferences to evaluate the solution for a personal need | Use personal preferences and the needs of the known user to evaluate the solution | Use given criteria to evaluate diagrams, technologies and the components used for the designed solution | Use given criteria to evaluate design features, selected resources, decision‑making processes and the designed solution | Use given criteria to evaluate design features, consideration of competing factors, processes and the designed solution | Develop negotiated criteria to evaluate design features, graphics, selected technologies, processes and functionality, with consideration of constraints for the designed solution |

Years 7–10

Strand: Digital systems

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Methods of data transmission in different types of networks including wired, wireless and mobile networks | Methods of data transmission and security in wired, wireless and mobile networks | Role of hardware and software to manage, control and secure the movement of data in a digital system | Hardware and software are used to manage, control and secure access to data in networked digital systems |
| Hardware devices of networks and their purposes | The effect of hardware specifications on performance and the appropriateness of hardware for particular tasks |  |  |

Strand: Data representation

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Digital systems use binary to represent data in text | Digital systems represent image and audio data using binary | Different methods of manipulation and storage of data | Represent documents online as content (text), structure (mark-up) and presentation (styling) and the purpose of these distinctions |
|  |  | Data compression techniques for an intended purpose |  |

Strand: Acquiring, managing and analysing data

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Acquire, store and visualise data from a range of sources using spreadsheets | Analyse and validate data using spreadsheets to draw conclusions and make predictions by identifying trends | Acquire, store and validate data from a range of sources using software, including spreadsheets and/or databases | Analyse and visualise data interactively using a range of software, including spreadsheets and/or relational databases, to draw conclusions and make predictions by identifying trends and outliers |
|  | Evaluate the authenticity, accuracy and timeliness of acquired data | Single table (flat file) databases are created to store and manage data | Model and query entities and their relationships using structured data |

Strand: Privacy and security

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Issues relating to a user’s digital footprint and the permanence of data | Ethical issues relating to the collection and ownership of data | Australian Privacy Principles (APP) regarding the collection and ownership of data | Australian Privacy Principles (APP) are used to critique systems and manage the digital footprint of individuals |
| Protecting accounts with multifactor authentication | Cybersecurity threats including phishing | Cybersecurity threat models | User or software supply chain vulnerabilities |

Strand: Digital implementation

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
|  |  | Define and decompose real-world problems by surveying stakeholders to create the requirements of the user | Define and decompose real-world problems by using data gathering techniques to create the client needs |
| Break down the user experience (UX) of a digital system | Design the user experience (UX) of a digital system | Design and prototype the user experience (UX) of a digital system based on user requirements | Design and prototype the user experience and user interface (UX/UI) of a digital system based on client needs |
| Design algorithms involving control structures (selection, decision and iteration), and represent them using flowcharts and pseudocode | Design algorithms involving nested control structures and represent them using flowcharts and pseudocode | Design algorithms that use functions and represent them as flowcharts and/or pseudocode | Design modular algorithms involving functions and logical operators (AND, OR, NOT) and represent them as flowcharts and/or pseudocode |
|  | Trace algorithms to predict output for a given input and to identify and fix errors | Predict the output of an algorithm using a given range of test cases and compare against actual output | Validate algorithms and programs by comparing output against a range of test cases |
| Implement, modify, and debug programs involving control structures | Implement, modify and debug programs involving control structures in a general-purpose programming language | Implement, modify and debug programs that use functions in a general-purpose programming language | Implement, modify and debug modular programs, applying algorithms and data structures in a general-purpose programming language |

Stand: Design thinking skills

Sub-strand: Project management

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Plan, develop and communicate, using project management processes, considering time and available resources to achieve solutions | Plan, develop and communicate, using project management processes, considering time, resources and costs to achieve solutions | Manage projects, using suitable technologies, with an agile and collaborative approach. Use project management processes to consider time, risk, economic and sustainable factors | Manage projects, using suitable technologies, with an agile and collaborative approach. Use project management processes to consider time, production processes, social, ethical, economic and sustainable factors, and legal responsibilities |

Sub-strand: Investigating and defining

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Investigate and define the problem and requirements of a given design brief | Investigate a problem for a given need or opportunity | Ideate a problem and define the needs of an end user, through interviews and/or surveys | Ideate a problem and define the needs of the client/stakeholder through anecdotal evidence and/or data gathering techniques |
| Break down a given design brief, identifying and defining the purpose and competing considerations | Develop a design brief for a given need or opportunity | Develop a design brief for a solution based on end user needs | Develop a design brief for a solution or to innovate an existing product, service or environment |
| Consider given technologies, resources and/or components to develop solutions | Consider technologies, resources and/or components to develop solutions, identifying constraints | Investigate a range of technologies, resources and/or components to develop ideas and solutions, with consideration of social, ethical and other constraints | Investigate a range of technologies, resources and/or components to develop ideas and solutions, with consideration of social and ethical factors, legal responsibilities and competing constraints |

Sub-strand: Designing

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Design processes and solutions with given technologies and techniques, using appropriate technical terms | Design processes and solutions considering a range of technologies and techniques, using appropriate technical terms | Design alternative solutions considering available technologies, usability and aesthetics, using appropriate technical terms | Design alternative solutions considering available technologies, functionality, accessibility, usability and aesthetics, using appropriate technical terms |

Sub-strand: Producing and implementing

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Implement agreed protocols and use a range of technologies, components and/or equipment to produce designed solutions | Implement agreed protocols, a range of technologies, techniques, components and processes to produce designed solutions | Select, implement and test a range of technologies, techniques and processes to produce designed solutions and/or prototypes | Select, justify, implement and test a range of technologies, techniques and processes to produce solutions and/or prototypes |

Sub-strand: Evaluating

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Use given contextual criteria to evaluate design processes and solutions | Use student-developed contextual criteria to evaluate design processes and solutions | Evaluate design processes and solutions against student‑developed criteria | Evaluate design processes and solutions against student‑developed criteria |