



Western Australian Curriculum

Technologies | Digital Technologies

Proposed Comparison of Curriculum | Pre-primary–Year 6
Draft for consultation | Not for implementation

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Acknowledgement of Country

Kaya. The School Curriculum and Standards Authority (the Authority) acknowledges that our offices are on Whadjuk Noongar boodjar and that we deliver our services on the country of many traditional custodians and language groups throughout Western Australia. The Authority acknowledges the traditional custodians throughout Western Australia and their continuing connection to land, waters and community. We offer our respect to Elders past and present.

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Overview

The current Western Australian Curriculum: Technologies was adopted from the Australian Curriculum version 8.1.

Western Australia provided feedback to the Australian Curriculum, Assessment and Reporting Authority (ACARA) during the consultation for the Australian Curriculum.

The proposed revisions to the Western Australian Curriculum: Technologies are adopted and adapted from the Australian Curriculum version 9.

Guide to reading this document

The first row contains the current Western Australian Curriculum: Technologies curriculum content organised in year levels. The second row contains the endorsed content for Australian Curriculum version 9. The content listed for the Western Australian Curriculum and the Australian Curriculum version 9 is unedited. The third row contains the proposed content for consultation.

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Pre-primary–Year 2

Knowledge and understanding

Digital systems			
	Pre-primary	Year 1	Year 2
Current WA Curriculum	Digital systems (hardware and software) are used at home, in the school and in the community	Digital systems (hardware and software) are used in everyday life and have specific features	Digital systems (hardware and software) are used for an identified purpose
Australian Curriculum v9	recognise and explore digital systems (hardware and software) for a purpose	identify and explore digital systems and their components for a purpose	
Proposed WA Curriculum	<p>Digital systems have common features, including hardware devices and software and are used at home, in school and in the community</p> <p>For example:</p> <ul style="list-style-type: none"> digital systems can include mobile devices, tablets and desktop PCs different digital systems are used to capture or transfer data (taking a photo, voice or video) common features of digital systems include screens, camera, speakers, buttons that are usually integrated digital technologies are frequently networked or connected, enabling people to share, communicate, or store data 	<p>Digital systems have hardware and software that are used together</p> <p>For example:</p> <ul style="list-style-type: none"> hardware and software that people use to complete tasks digital systems include mobile phones, tablets and desktop PCs hardware is physical and software is non-physical can be used for digital systems for downloading and storing information or for a purpose, such as retelling a story 	<p>Digital systems, including hardware devices and software, are used for an identified purpose</p> <p>For example:</p> <ul style="list-style-type: none"> digital systems, such as mobile phones, tablets and desktop PCs are used/selected for a purpose different software applications have different uses
Data representation			
	Pre-primary	Year 1	Year 2
Current WA Curriculum	Data can have patterns and can be represented as pictures and symbols	Data can have patterns and can be represented as pictures, symbols and diagrams	Data can have patterns and can be represented and used to make simple conclusions
Australian Curriculum v9	represent data as objects, pictures and symbols	represent data as pictures, symbols, numbers and words	
Proposed WA Curriculum	<p>Data can be represented as objects and pictures</p> <p>For example:</p> <ul style="list-style-type: none"> objects and events can be sorted based on easily identified characteristics and using digital systems to represent data (birthdates and categories) a sun picture could represent 'hot' weather, an arrow picture could represent movement in a particular direction icons are pictures that represent programs or applications 	<p>Data can be represented as pictures, symbols, numbers and words</p> <p>For example:</p> <ul style="list-style-type: none"> the equivalence of different representations of numbers, such as words, digits, numbers and dice dots representing categorical data in a variety of ways, such as drawings, lists and tally marks the relationship between simple representations, such as arrows or appropriate emoji, and the emotion or concept they represent 	<p>Data can have patterns and may be represented as diagrams, symbols, numbers and words</p> <p>For example:</p> <ul style="list-style-type: none"> data can be represented using a variety of visualisation techniques, such as picture graphs data patterns can be exemplified by the repetition of pictures and symbols number patterns can be represented as pairs or in multiples of two

Processes and production skills

Acquiring, managing and analysing data

	Pre-primary	Year 1	Year 2
Current WA Curriculum	Collect and use data of any kind	Present data of any kind using a variety of digital tools	Present data using a variety of digital tools
Australian Curriculum v9	No content		
Proposed WA Curriculum	No content		

Privacy and security

	Pre-primary	Year 1	Year 2
Current WA Curriculum	No content		
Australian Curriculum v9	identify some data that is personal and owned by them	discuss that some websites and apps store their personal data online access their school account with a recorded username and password	
Proposed WA Curriculum	Some data is personal and owned by them For example: <ul style="list-style-type: none"> personal data, such as photos of themselves with their families, and public data, such as photographs of local community sites photographs of students may become public, such as their username in a game or photos of them on a parent's social media account asking a friend for permission before taking their photograph 	Some data is personal, owned by them and can be shared with trusted people For example: <ul style="list-style-type: none"> importance of asking permission from a parent or carer before entering personal details online, such as address, phone number and date of birth websites and apps used at home and school collect personal data, such as usernames and email addresses asking a friend before sharing a photograph of them 	Some personal data may be safely shared online with specific people using trusted platforms For example: <ul style="list-style-type: none"> using a school learning app to share photos or videos with a parent personal data is visible on some websites and apps, such as usernames or avatars on online games
	Steps to take when encountering unexpected inappropriate content or 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 logging out afterwards

Digital implementation

	Pre-primary	Year 1	Year 2
Current WA Curriculum	Use data to complete a task	Use data to solve a simple task/problem	Use data to solve similar tasks/problems
	Engage with information known people have shared in an online environment, and model strategies to stay safe online	Share and publish information with known people in an online environment, modelling strategies to stay safe online	Share and publish information in a safe online environment, with known people
Australian Curriculum v9 – Investigating and defining	No content	investigate simple problems for known users that can be solved with digital systems	
Australian Curriculum v9 – Generating and designing	No content	follow and describe algorithms involving a sequence of steps, branching (decisions) and iteration (repetition)	
Proposed WA Curriculum			Create an algorithm (sequence of steps) for a purpose
	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) and decisions made by the user (branching)

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Creating solutions

Investigating and defining

	Pre-primary	Year 1	Year 2
Current WA Curriculum	Explore needs for design	Explore opportunities for design	Explore design to meet needs or opportunities
Proposed WA Curriculum	Explore the purpose for design	Explore ideas and design opportunities for a personal need	Explore ideas and design opportunities for a known user

Designing

	Pre-primary	Year 1	Year 2
Current WA Curriculum	Generate and record design ideas through describing, drawing, modelling and/or a sequence of written or spoken steps	Develop and communicate design ideas through describing, drawing, modelling and/or a sequence of written or spoken steps	Develop, communicate and discuss design ideas through describing, drawing, modelling and/or a sequence of steps
Proposed WA Curriculum	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

Producing and implementing

	Pre-primary	Year 1	Year 2
Current WA Curriculum	Use given components and equipment to safely make simple solutions	Use given components and equipment to safely make solutions	Use components and given equipment to safely make solutions
Proposed WA Curriculum	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

Evaluating

	Pre-primary	Year 1	Year 2
Current WA Curriculum	Use personal preferences to evaluate the success of simple solutions	Use personal preferences to evaluate the success of design processes	Use simple criteria to evaluate the success of design processes and solutions
Proposed WA Curriculum	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

Collaborating and managing

	Pre-primary	Year 1	Year 2
Current WA Curriculum	Work independently, or with others when required, for solutions	Work independently, or with others when required, to safely create and share sequenced steps for solutions	Work independently, or collaboratively when required, to organise information and ideas to safely create and share sequenced steps for solutions
Proposed WA Curriculum	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

Years 3–6

Knowledge and understanding

Digital systems				
	Year 3	Year 4	Year 5	Year 6
Current WA Curriculum	Digital systems and peripheral devices are used for different purposes	Digital systems and peripheral devices are used for different purposes and can store and transmit different types of data	Digital systems have components with basic functions that may connect together to form networks which transmit data	Digital systems have components with basic functions and interactions that may be connected together to form networks which transmit different types of data
Australian Curriculum v9	explore and describe a range of digital systems and their peripherals for a variety of purposes		investigate the main internal components of common digital systems and their function	
	explore transmitting different types of data between digital systems		examine how digital systems form networks to transmit data	
Proposed WA Curriculum	<p>Digital systems and peripheral devices are connected and used together for various purposes</p> <p>For example:</p> <ul style="list-style-type: none"> input peripheral devices include keyboard, mouse, camera and microphone output peripheral devices include monitor, printer, 3D printer, speaker and remotes peripherals that have the ability to be both input and output devices include touch screen, headsets and controllers 	<p>Digital systems, including peripheral devices, are used to transfer and store different types of data</p> <p>For example:</p> <ul style="list-style-type: none"> peripheral devices, such as a keyboard, touch screen, mouse, camera and microphone, monitor, printer, 3D printer, speaker, storage, remotes, controllers, headset device and can be categorised as input, output and storage functions peripheral devices can be connected wired or wirelessly 	<p>Digital systems have main internal components that perform particular functions to achieve a purpose</p> <p>For example:</p> <ul style="list-style-type: none"> common internal hardware components, such as a CPU, RAM, motherboard, SSD and HDD, are interconnected and work together to form a digital system data is transmitted between digital systems in different ways (wires, cables, radio waves) 	<p>Digital systems are connected in wired and wireless networks to transmit data for a variety of purposes</p> <p>For example:</p> <ul style="list-style-type: none"> familiar networks can be found in the school, home or local community and can be connected through the internet wired and wireless networks have differences, such as speed, device mobility, ease of installation etc. separate systems can be connected in different ways to exchange data with benefits of connecting different digital systems together data is transmitted through a network, broken up into packets (small pieces) and passed from the source, through multiple devices, to the destination

Data representation

	Year 3	Year 4	Year 5	Year 6
Current WA Curriculum	Different types of data can be represented in different ways	Data can be represented in different ways	Data is represented using codes	Whole numbers are used to represent data in a digital system
Australian Curriculum v9	recognise different types of data and explore how the same data can be represented differently depending on the purpose		explain how digital systems represent all data using number	
Proposed WA Curriculum	<p>Data is of different types and can be represented in different ways</p> <p>For example:</p> <ul style="list-style-type: none"> data is of different types including sound, images, numeric and text symbols and icons are used to represent data symbolic representations such as flowcharts infographics that combine pictures, symbols, and diagrams to tell a compelling data story and provide information 	<p>Data of the same type can be represented in different ways depending on the purpose</p> <p>For example:</p> <ul style="list-style-type: none"> data can be of the same type including sound, images, numeric and text different types of data can be used depending on the purpose or needs, such as numbers, letters, symbols, pictures or sounds identifying circumstances when the same data can be represented in different ways and why some representations are better than others in certain contexts, such as four <u>vs</u> 4 <u>vs</u> IV <u>vs</u> <u>vs</u> quatre, and that numbers are better for calculation than words 	<p>Data of all types, including text, numeric, sound and images are represented using codes</p> <p>For example:</p> <ul style="list-style-type: none"> data can be represented using whole numbers in a digital system, such as converting letters in a message to numbers using their position in the alphabet digital systems represent data, such as Unicode or ASCII (A= 0001) the encoding and transmitting of data over a distance, such as Morse code, semaphore, fire signals, drumming and radio 	<p>Data can be represented by off and on states (zeros and ones in binary)</p> <p>For example:</p> <ul style="list-style-type: none"> on/off states in a circuit can represent the digits one and zero, and is how digital systems represent data converting binary to decimal and vice versa up to 00011111 images are represented in digital systems using binary

Processes and production skills

Acquiring, managing and analysing data

	Year 3	Year 4	Year 5	Year 6
Current WA Curriculum	Collect and present different types of data using simple software to create useful information	Collect and present different types of data for a specific purpose using software	Collect, store and present different types of data for a specific purpose using software	Collect, sort, interpret and visually present different types of data using software to manipulate data for a range of purposes
Australian Curriculum v9	No content			
Proposed WA Curriculum	No content			

Privacy and security

	Year 3	Year 4	Year 5	Year 6
Current WA Curriculum	No content			
Australian Curriculum v9	identify what personal data is stored and shared in their online accounts and discuss any associated risks		explain the creation and permanence of their digital footprint and consider privacy when collecting user data	
	access their school account using a memorised password and explain why it should be easy to remember, but hard for others to guess		access multiple personal accounts using unique passphrases and explain the risks of password re-use	
Proposed WA Curriculum	<p>Different types of personal data are shared and stored online</p> <p>For example:</p> <ul style="list-style-type: none"> personal data stored in accounts at school and at home and who has access to it, such as documents in their school cloud storage are accessible by the teacher, or their nickname in their online gaming accounts is visible to all players 	<p>Personal data that is shared and stored online can pose risks</p> <p>For example:</p> <ul style="list-style-type: none"> personal data stored in online accounts forms a person's digital identity and reveals detailed information about people, such as photographs reveal details about a person's location, habits or home personal data, when shared online, cannot be removed 	<p>Websites and apps that are trusted to store personal data online</p> <p>For example:</p> <ul style="list-style-type: none"> websites and apps store data, and their ability to safely store data and their level of trustworthiness can vary importance of protecting someone's privacy and only collecting data when required, such as choosing not to collect information about someone's birthdate when it is not necessary ensures that private data cannot be stolen in a cyber attack age restrictions identified in terms and conditions of websites and apps 	<p>Digital footprint and privacy considerations when collecting user data</p> <p>For example:</p> <ul style="list-style-type: none"> data, images or both that have been posted online can lead to information resurfacing at a later date, such as a comment made on a social media post or video associating a person with both their comment and the content individuals leave digital footprints, such as social media, online searches, and communication platforms when providing data to websites it is important to know how that data may be stored or used in the future and if this poses a risk sharing personal information increases the likelihood that it will be revealed in the future
	Access their school account, using a unique private memorised password, and logging out afterwards	Access their school account, using a memorised password. Explain why it should be easy to remember but difficult for others to guess, and risks of not logging out	Access multiple personal accounts using unique passphrases. Explain the risks of password reuse and not logging out	Access multiple personal accounts using unique passphrases. Explain the risks of password re-use and practices to reduce risk to their personal accounts

Digital implementation

	Year 3	Year 4	Year 5	Year 6
Current WA Curriculum	Use visually represented sequenced steps (algorithms), including steps with decisions made by the user (branching)	Use simple visual programming environments that include a sequence of steps (algorithm) involving decisions made by the user (branching)	Design solutions to a user interface for a digital system	Design, modify, follow and represent both diagrammatically, and in written text, simple algorithms (sequence of steps) involving branching (decisions) and iteration (repetition)
	Create and communicate ideas and information safely	Create and communicate ideas and information safely, using agreed protocols (netiquette)	Design, follow and represent diagrammatically, a simple sequence of steps (algorithm), involving branching (decisions) and iteration (repetition)	Implement and use simple visual programming environments that include branching (decisions), iteration (repetition) and user input
			Implement and use simple programming environments that include branching (decisions) and iteration (repetition)	Manage the creation and communication of information, including online collaborative projects, using agreed social, ethical and technical protocols
			Create and communicate information, including online collaborative projects, using agreed social, ethical and technical protocols (codes of conduct)	
Australian Curriculum v9 – Investigating and defining	define problems with given design criteria and by co-creating user stories		define problems with given or co-developed design criteria and by creating user stories	
Australian Curriculum v9 – Generating and designing	follow and describe algorithms involving sequencing, comparison operators (branching) and iteration		design algorithms involving multiple alternatives (branching) and iteration	
	generate, communicate and compare designs		design a user interface for a digital system	
			generate, modify, communicate and evaluate designs	
	implement simple algorithms as visual programs involving control structures and input		implement algorithms as visual programs involving control structures, variables and input	
Proposed WA Curriculum	Represent algorithms (sequence of steps), including decisions (branching) made by the user using flowcharts	Represent an algorithm (sequence of steps) involving decisions (branching) and repetition using flowcharts	Design algorithms involving user input, variables and control structures, such as sequencing, decisions and repetition	Design algorithms involving user input, variables and control structures, such as sequencing, decisions and various types of iteration (For, Repeat, While)
	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, such as sequence, decisions and repetition, with user input	Implement algorithms in a visual programming environment involving variables and control structures, such as sequence, decisions, with user input and various types of iteration

Creating solutions

Investigating and defining

	Year 3	Year 4	Year 5	Year 6
Current WA Curriculum	Create a sequence of steps to solve a given task	Define a sequence of steps to design a solution for a given task	Define a problem, and set of sequenced steps, with users making a decision to create a solution for a given task	Define a problem, and set of sequenced steps, with users making multiple decisions to create a solution for a given task
		Identify and choose the appropriate resources from a given set	Identify available resources	Identify and select available resources
Proposed WA Curriculum	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

Designing

	Year 3	Year 4	Year 5	Year 6
Current WA Curriculum	Develop and communicate ideas using labelled drawings and appropriate technical terms	Develop and communicate design ideas and decisions using labelled drawings and appropriate technical terms	Develop and communicate alternative solutions, and follow design ideas, using annotated diagrams, storyboards and appropriate technical terms	Design, modify, follow and represent both diagrammatically, and in written text, alternative solutions using a range of techniques, appropriate technical terms and technology
Proposed WA Curriculum	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

Producing and implementing

	Year 3	Year 4	Year 5	Year 6
Current WA Curriculum	Select, and safely use, appropriate components with given equipment to make a solution	Select, and safely use, appropriate components and equipment to make solutions	Select, and apply, safe procedures when using components and equipment to make solutions	Select, and apply, safe procedures when using a variety of components and equipment to make solutions
Proposed WA Curriculum	Use agreed protocols, appropriate technologies and components with given equipment to create a designed solution	Use agreed protocols, appropriate technologies, components and/or equipment to produce a designed solution	Implement agreed protocols when using technologies, components and/or equipment to produce a designed solution	Implement agreed protocols when using a range of technologies, components and/or equipment to produce a designed, quality-controlled solution

Evaluating

	Year 3	Year 4	Year 5	Year 6
Current WA Curriculum	Use criteria to evaluate design processes and solutions developed	Use criteria to evaluate and justify simple design processes and solutions	Develop negotiated criteria to evaluate and justify design processes and solutions	Develop collaborative criteria to evaluate and justify design processes and solutions
Proposed WA Curriculum	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, functionality and consideration of constraints and the designed solution

Collaborating and managing

	Year 3	Year 4	Year 5	Year 6
Current WA Curriculum	Work independently, or collaboratively when required, to plan, safely create and communicate sequenced steps	Work independently, or collaboratively when required, to plan, safely develop and communicate ideas and information for solutions	Work independently, or collaboratively when required, to plan, safely develop and communicate ideas and information for solutions	Work independently, or collaboratively when required, considering resources and safety, to plan, develop and communicate ideas and information for solutions
Proposed WA Curriculum	Communicate ideas and follow a plan with consideration of time management to develop a solution	Use agreed conventions and management roles to communicate ideas, plan and make decisions to develop solutions	Use agreed conventions and management roles to communicate decisions, plan and manage time to develop designed solutions	Use agreed conventions to set goals, manage competing factors, resources and time, to plan, develop and communicate decisions to develop designed solutions for a given task