

Strand	Knowledge and understanding		Processes and production skills																			
			Creating digital solutions by:																			
	Digital systems	Representation of data	Collecting, managing and analysing data	Investigating and defining		Generating and designing		Producing and implementing		Evaluating		Collaborating and managing										
Content Description	Investigate how data is transmitted and secured in wired, wireless and mobile networks, and how the specifications affect performance (ACTDIK023)	Investigate how digital systems represent text, image and audio data in binary (ACTDIK024)	Acquire data from a range of sources and evaluate authenticity, accuracy and timeliness (ACTDIP025)	Analyse and visualise data using a range of software to create information, and use structured data to model objects or events (ACTDIP026)	Define and decompose real-world problems taking into account functional requirements and economic, environmental, social, technical and usability constraints (ACTDIP027)	Design the user experience of a digital system, generating, evaluating and communicating alternative designs (ACTDIP028)	Design algorithms represented diagrammatically and in English, and trace algorithms to predict output for a given input and to identify errors (ACTDIP029)	Implement and modify programs with user interfaces involving branching, iteration and functions in a general-purpose programming language (ACTDIP030)	Evaluate how student solutions and existing information systems meet needs, are innovative, and take account of future risks and sustainability (ACTDIP031)	Plan and manage projects that create and communicate ideas and information collaboratively online, taking safety and social contexts into account (ACTDIP032)												
Sequence of Lessons / Unit	Approx. time req'd	Year A or B	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #	CD	Achievement standard #
Digital citizen		7	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>	6	<input checked="" type="checkbox"/>	8

Years 5 and 6 Achievement Standard	Years 7 and 8 Achievement Standard	Years 9 and 10 Achievement Standard
<p>By the end of Year 6:</p> <ul style="list-style-type: none"> Students explain the fundamentals of digital system components (hardware, software and networks) and how digital systems are connected to form networks. (1) They explain how digital systems use whole numbers as a basis for representing a variety of data types. (2) Students define problems in terms of data and functional requirements and design solutions by developing algorithms to address the problems. (3) They incorporate decision-making, repetition and user interface design into their designs and implement their digital solutions, including a visual program. (4) They explain how information systems and their solutions meet needs and consider sustainability. (5) Students manage the creation and communication of ideas and information in collaborative digital projects using validated data and agreed protocols. (6) 	<p>By the end of Year 8</p> <ol style="list-style-type: none"> Students distinguish between different types of networks and defined purposes. They explain how text, image and audio data can be represented, secured and presented in digital systems. Students plan and manage digital projects to create interactive information. They define and decompose problems in terms of functional requirements and constraints. Students design user experiences and algorithms incorporating branching and iterations, and test, modify and implement digital solutions. They evaluate information systems and their solutions in terms of meeting needs, innovation and sustainability. They analyse and evaluate data from a range of sources to model and create solutions. They use appropriate protocols when communicating and collaborating online. 	<p>By the end of Year 10</p> <ul style="list-style-type: none"> Students explain the control and management of networked digital systems and the security implications of the interaction between hardware, software and users. (1) They explain simple data compression, and why content data are separated from presentation. (2) Students plan and manage digital projects using an iterative approach. (3) They define and decompose complex problems in terms of functional and non-functional requirements. (4) Students design and evaluate user experiences and algorithms. (5) They design and implement modular programs, including an object-oriented program, using algorithms and data structures involving modular functions that reflect the relationships of real-world data and data entities. (6) They take account of privacy and security requirements when selecting and validating data. Students test and predict results and implement digital solutions. (7) They evaluate information systems and their solutions in terms of risk, sustainability and potential for innovation and enterprise. (8) They share and collaborate online, establishing protocols for the use, transmission and maintenance of data and projects. (9)

Digital citizen

As people connect to the internet in more social and interactive ways, it is important to carry out online relationships responsibly. As students become creators of digital content they need to be aware of creative credit and digital copyright. They also need to be aware of identity theft and ways to protect their personal information. Exploring a digital dilemma gives students the opportunity to make good (and not-so-good) decisions, and to try out possible solutions to scenarios through role-play, stories and mini games – all without risking their real-world reputations.

This sequence was developed by Cathy Lamb and James Lloyd from Clayfield College in Queensland.

Flow of activities				
AC Alignment	Collaborating and managing (ACTDIP032)	Collaborating and managing (ACTDIP032)	Collaborating and managing (ACTDIP032)	Collaborating and managing (ACTDIP032) Evaluating (ACTDIP031)
Questions to guide exploration	How do you use the internet to communicate?	What is identity theft and how do you avoid being a victim?	What is fair use and copyright?	What is an example of an ethical dilemma?
Short text	Explore ways of connecting to the internet and establish guidelines for responsible online behaviour.	Learn more about identity theft and ways to protect your personal information.	Introduce copyright, fair use, and related rights when creating digital materials.	Evaluate an existing solution about ethics and morals, then design your own solution.
What's this about?	<p>Now more than ever we connect to the internet in more social and interactive ways. It is important to carry out online relationships responsibly.</p> <p>In previous years, students will have learned about the importance of their digital footprint and how to behave in a way that is socially acceptable online.</p> <p>At this level focus on the 'social' side of things, such as language, humour and acronyms when interacting online.</p>	<p>'Phishing' is a type of scam where you receive an unsolicited email or correspondence that asks for your personal details in some way. This then allows the scammer to fake your identity.</p> <p>The types of websites you visit reveals much about your online behaviour and also provides an opportunity for companies to gather and collect your personal information via the websites. Companies of these websites often sell your information.</p>	<p>As students become creators of digital content they need to be aware of creative credit and digital copyright.</p> <p>Copying and pasting material without citing the creator is plagiarism.</p> <p>Make students aware of this issue, explaining that the hard work and creativity of others should be respected. Plagiarism is a common issue as some people regard the internet as a free-for-all.</p> <p>Learning about copyright helps students to understand the rights of others, as well as how to protect their own work when sharing original works online.</p>	<p>Connecting to the internet increases the likelihood of having to deal with digital dilemmas; for example, unintentionally upsetting someone when posting a comment on someone's social media site.</p> <p>Exploring a digital dilemma gives students the opportunity to make good (and not-so-good) decisions, and to try out possible solutions to scenarios through role-play, stories and mini games – all without risking their real-world reputations.</p> <p>This type of activity helps students to think about ethics and morals.</p>
The focus of the learning (in simple terms)	<p>Establish the students' daily use of digital media and ways they connect to the internet.</p> <p>Establish a set of 'rules' about acceptable and unacceptable behaviour when collaborating online, considering language, types of humour, emojis and acronyms.</p> <p>Ask students to create a visual representation of the way they communicate via the internet.</p> <p>Ask them to annotate the visual representation with potential dangers; ways to avoid giving up their personal information; and where things can go wrong with humour and language.</p>	<p>Provide the students with examples of scam correspondence alongside legitimate correspondence from banks, etc. Have them attempt to discern which is legitimate and which is not.</p> <p>Explain how Google and social media work, and how personal information is valuable to other companies.</p>	<p>Investigate copyright using music cases (such as Down Under/Kookaburra, Stairway to Heaven, etc) as a stimulus for discussion.</p> <p>Set up a continuum at two ends of the classroom. Label one end 'strongly agree', the other end 'strongly disagree' and the middle 'neutral'. Read out statements based on copyright violations and non-violations. Students place themselves in the location that matches their opinion. Ask them to give their opinions, and allow them to change their minds and move accordingly at any time.</p> <p>Students explore copyright law and fair use. Through the lens of 'mash-up' culture, they examine how this may be less clear cut than first seemed. Students develop an understanding of digital</p>	<p>Students evaluate an existing solution such as the game Digital Compass, which is designed to get students thinking about ethics and morals.</p> <p>Review some of the issues posed, including:</p> <ul style="list-style-type: none"> posting embarrassing and hurtful comments about another person to make yourself look better; dealing with it turning viral cyberbullying: is watching and not stopping it just as bad as doing it? making up untrue 'facts' about yourself – eg being a good musician or artist – to get a job, a girlfriend or boyfriend, etc; what are the implications of that now and in the future? copying work from the internet and presenting it as your own

			<p>ownership and digital rights (see attached draft lesson).</p> <p>Instagram is a popular online social media tool. Ask who uses it and if anyone has read the terms of use. Explain that a lawyer in the UK was paid by the Children’s Commissioner to rewrite Instagram’s terms of use. View and discuss the terms of use.</p>	<ul style="list-style-type: none"> copying information directly from a website and not checking that it has validity; does it matter? <p>Organise students into collaborative groups. Their challenge is to design, create and evaluate their own ‘choose your own path’ project. They pose a series of digital ethical questions – eg aimed at a primary school student. The task can be completed collaboratively.</p>
Supporting resources and tools and purpose/context for use	<p>Data to go This fantastic video shows the need to be careful about ‘liking’ on Facebook, and the importance of privacy settings.</p> <p>Digital life 101 animation This animation demonstrates many ways that young people connect to the internet every day.</p> <p>Net etiquette guidelines Use these guidelines to discuss appropriate online behaviour.</p>	<p>Scams and schemes Explore phishing schemes and how to be aware of the pitfalls of providing personal information online. (Login needed.)</p> <p>Recent phishing examples This site provides a list of recent schemes used to trick people into revealing their personal information, and other scams.</p>	<p>A creator’s rights Learn about copyright and what it means in a digital world.</p> <p>Add draft copy lesson (yet to be published)</p> <p>A lawyer rewrites Instagram’s terms and conditions so the children can understand them Read about how a lawyer rewrote Instagram’s terms of use in plain language.</p> <p>A fair(y) use tale This YouTube video is a Disney parody explanation of copyright law and fair use.</p> <p>Do trial guide This trial guide uses the fictional case of Walt Disney Studios v Faden outlined in the video ‘A fair(y) use tale’. Put the digital mash-up to the test in a mock trial.</p>	<p>Digital compass These are animated, choose-your-own-path interactive experiences, designed for years 6–8. They invite students to explore digital dilemmas.</p>
Assessment	<p>Visual representation of the way a student connects to the internet, annotated with ways to avoid giving up their personal information</p> <p>Achievement standard Use appropriate protocols when communicating and collaborating online.</p>	<p>Guide to pitfalls when interacting online: How to be careful online</p> <p>Achievement standard Use appropriate protocols when communicating and collaborating online.</p>	<p>A ‘forensic’ style assessment – organise a mock case and ask students to decide whether something infringes copyright or is passable</p> <p>Achievement standard Use appropriate protocols when communicating and collaborating online.</p>	<ul style="list-style-type: none"> Design of a digital project Segment of a digital project Three questions used to evaluate the effectiveness of the solution and responses <p>Achievement standard Evaluate information systems and their solutions in terms of meeting needs, innovation and sustainability.</p> <p>Use appropriate protocols when communicating and collaborating online.</p>

We are learning about our digital footprint, potential online dangers, and copyright to protect our work and the rights of others.				
SOLO LEVEL	One	Many	Relate	Extend
SOLO VERB	<i>Identify and define</i>	<i>Combine and perform serial skills</i>	<i>Apply and integrate</i>	<i>Create and evaluate</i>
Success criteria	<p>I can identify privacy settings on social media sites I use</p> <p>I can identify rules that need to be considered and followed when connecting online</p>	<p>I can describe potential issues when connecting online and can describe ways to remain safe online and be responsible</p> <p>I can describe how people use scams to trick others into supplying personal information</p> <p>I can describe ways that copyright protects the rights of others</p>	<p>I can consider scenarios and explain if copyright is breached or whether there is no infringement and the use is passable</p>	<p>I can evaluate a game that presents digital dilemmas and describe its usefulness</p> <p>I can create a game that presents digital dilemmas in an engaging way</p>
Digital technologies				
Way of thinking				Design thinking