

Content Descriptions

Australian Curriculum Levels 9-10	Western Australian Year 10 Syllabus
Digital systems	Digital systems
Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital system (ACTDIK034)	Role of hardware and software in managing, controlling and securing access to data, in networked digital systems (ACTDIK034)
Representation of data	Representation of data
Analyse simple compression of data and how content data are separated from presentation (ACTDIK035)	Simple compression of data and how content data is separated from presentation data (ACTDIK035)
Collecting, managing and analysing data	Collecting, managing and analysing data
Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements (ACTDIP036) Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data (ACTDIP037)	Apply techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements (ACTDIP036) Analyse, visualise and model processes and entities, and their relationships, using structured data (ACTDIP037)
Investigating and defining	Investigating and defining
Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs (ACTDIP038)	Identify the needs of the client/stakeholder to determine the basis for a solution (WATPPS61) Create and critique briefs to solutions (WATPPS62) Investigate components/resources to develop increasingly sophisticated solutions, identifying and considering associated constraint (WATPPS63)
Generating and designing	Designing
Design the user experience of a digital system by evaluating alternative designs against criteria including functionality, accessibility, usability, and aesthetics (ACTDIP039) Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases (ACTDIP040)	Apply design thinking, creativity, enterprise skills and innovation to develop, modify and communicate design ideas of increasing sophistication (WATPPS64) Design possible solutions, analysing designs against criteria, including functionality, accessibility, usability and aesthetics, using appropriate technical terms and technology (WATPPS65)
	Data implementation
	Design algorithms represented diagrammatically and in structured English, including iteration (ACTDIP040)
	Validate algorithms and programs using common acceptable methods (ACTDIP040)
Producing and Implementing	Producing and implementing
Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language (ACTDIP041)	Select, justify, and safely implement and test appropriate technologies and processes, to make solutions (WATPPS66)
	Data implementation
	Implement data storage and organisation techniques within a programming environment (ACTDIP041)
Evaluating	Evaluating
Evaluate critically how student solutions and existing information systems and policies, take account of future risks and sustainability and provide opportunities for innovation and enterprise (ACTDIP042)	Analyse design processes and solutions against student developed criteria (WATPPS67)
Collaborating and managing	Collaborating and managing
Create interactive solutions for sharing ideas and information online, taking into account safety, social contexts and legal responsibilities (ACTDIP043) Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability (ACTDIP044)	Work independently, and collaboratively to manage projects, using digital technology and an iterative and collaborative approach. Considers time, cost, risk, safety, production processes, sustainability and legal responsibilities (WATPPS68)
	Data Implementation
	Create interactive solutions for sharing ideas and information online, taking into account social contexts and legal responsibilities (ACTDIP043)

Achievement Standards

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<p>By the end of Year 10, students explain the control and management of networked digital systems and the security implications of the interaction between hardware, software and users. They explain simple data compression, and why content data are separated from presentation. Students plan and manage digital projects using an iterative approach. They define and decompose complex problems in terms of functional and non-functional requirements. Students design and evaluate user experiences and algorithms. 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. They take account of privacy and security requirements when selecting and validating data. Students test and predict results and implement digital solutions. They evaluate information systems and their solutions in terms of risk, sustainability and potential for innovation and enterprise. They share and collaborate online, establishing protocols for the use, transmission and maintenance of data and projects.</p>	<p>At Standard, students describe the role of hardware and software in managing, controlling and securing access to data, in networked digital systems. They describe the process of simple compression of data and how content data is separated from presentation data. Students apply techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, and consider privacy and security requirements. They analyse, visualise and model processes and entities, and their relationships, using structured data. Students create a design for algorithms represented diagrammatically and in structured English, including iteration. They validate algorithms and programs, using commonly accepted methods. Students implement data storage and organisation techniques within a programming environment. They create interactive solutions for sharing ideas and information online, taking into account social contexts and legal responsibilities. In Digital Technologies, students identify the needs of the client/stakeholder to determine the basis for a solution. They create and critique briefs. Students investigate components/resources to develop increasingly sophisticated solutions, identifying and considering associated constraints. They apply design thinking, creativity, enterprise skills and innovation to develop, modify and communicate design ideas of increasing sophistication. Students design possible solutions, analysing designs against criteria, including functionality, accessibility, usability and aesthetics, using appropriate technical terms and technology. They select, justify and safely implement and test appropriate technologies and processes to make solutions. Students provide relevant analysis of design processes and solutions against student-developed criteria. They work independently, and collaboratively to manage projects, using digital technology and an iterative and collaborative approach. Students consider time, cost, risk, safety, production processes, sustainability and legal responsibilities.</p>