

## Content Descriptions and Outcomes

Knowledge and Understanding Digital Systems				Digital Systems
Australian	Western Australian Level 9	Western Australian Level 10	New South Wales Stage 5	Victorian
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 the movement of data in a digital system (ACTDIK034)	Role of hardware and software in managing, controlling and securing access to data, in networked digital systems (ACTDIK034)		Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems (VCDTDS045)

Representation of Data				Data and Information
Australian	Western Australian Level 9	Western Australian Level 10	New South Wales Stage 5	Victorian
Analyse simple compression of data and how content data are separated from presentation (ACTDIK035)	Different methods of manipulation, storage and transmission of data (ACTDIK035)	Simple compression of data and how content data is separated from presentation data (ACTDIK035)		Analyse simple compression of data and how content data are separated from presentation (VCDTDI046)

# 9-10 Australian Digital Technologies Curriculum Mapping Tool



Process of Production Skills Collecting, managing and analysing data				Data and Information
Australian	Western Australian Level 9	Western Australian Level 10	New South Wales Stage 5	Victorian
<p>Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements (ACTDIP036)</p> <p>Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data (ACTDIP037)</p>	<p>Explore techniques for acquiring, storing and validating quantitative and qualitative data (ACTDIP036)</p> <p>Analyse and visualise data to create information and address complex problems (ACTDIP037)</p>	<p>Apply techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements (ACTDIP036)</p> <p>Analyse, visualise and model processes and entities, and their relationships, using structured data (ACTDIP037)</p>		<p>Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements (VCDDI047)</p> <p>Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data (VCDDI048)</p>

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## Creating Digital Solutions by...

Investigating and defining				Creating Digital Solutions
Australian	Western Australian Level 9	Western Australian Level 10	New South Wales Stage 5	Victorian
Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs (ACTDIP038)	<p>Identify and define the needs of a stakeholder, to create a brief, for a solution (WATPPS54)</p> <p>Investigate a selection of components/resources to develop solution ideas, identifying and considering constraints (WATPPS55)</p>	<p>Identify the needs of the client/stakeholder to determine the basis for a solution (WATPPS61)</p> <p>Create and critique briefs to solutions (WATPPS62)</p> <p>Investigate components/resources to develop increasingly sophisticated solutions, identifying and considering associated constraint (WATPPS63)</p>		Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs (VCDTCD050)

Generating and Designing	Designing			Creating Digital Solutions
Australian	Western Australian Level 9	Western Australian Level 10	New South Wales Stage 5	Victorian
Design the user experience of a digital system by evaluating alternative designs against criteria including functionality, accessibility, usability, and aesthetics (ACTDIP039)	<p>Apply design thinking, creativity and enterprise skill (WATPPS56)</p> <p>Design solutions assessing alternative designs against given criteria, using appropriate technical terms and technology (WATPPS57)</p>	<p>Apply design thinking, creativity, enterprise skills and innovation to develop, modify and communicate design ideas of increasing sophistication (WATPPS64)</p> <p>Design possible solutions, analysing designs against criteria, including</p>		<p>Design the user experience of a digital system, evaluating alternative designs against criteria including functionality, accessibility, usability and aesthetics (VCDTCD051)</p> <p>Design algorithms represented diagrammatically and in structured English and validate algorithms and</p>

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Generating and Designing	Designing			Creating Digital Solutions
Australian	Western Australian Level 9	Western Australian Level 10	New South Wales Stage 5	Victorian
Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases (ACTDIP040)	functionality, accessibility, usability and aesthetics, using appropriate technical terms and technology (WATPPS65)			programs through tracing and test cases (VCDTCD052)
	<b>Digital Implementation</b>			
	Design the user experience of a digital system (ACTDIP028)  Design algorithms, represented diagrammatically and in structured English, and validate plans and programs through tracing (ACTDIP040)	Design the user experience of a digital system (ACTDIP028) Design plans, using a sequence of steps, and represent them diagrammatically and in English, to solve a problem and to predict output for a given input to identify errors (ACTDIP029)  Validate algorithms and programs using common acceptable methods (ACTDIP040)		

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Producing and Implementing				Creating Digital Solutions
Australian	Western Australian Level 9	Western Australian Level 10	New South Wales Stage 5	Victorian
Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language (ACTDIP041)	Select, and safely implement and test appropriate technologies and processes, to make solutions (WATPPS58)	Select, justify, and safely implement and test appropriate technologies and processes, to make solutions (WATPPS66)		Develop modular programs, applying selected algorithms and data structures including using an object-oriented programming language (VCDTCD053)
	<b>Data Implementation</b>			
	Implement and apply data storage and organisation techniques (ACTDIP041)	Implement data storage and organisation techniques within a programming environment (ACTDIP041)		

Evaluating				Creating Digital Solutions
Australian	Western Australian Level 9	Western Australian Level 10	New South Wales Stage 5	Victorian
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)	Evaluate design processes and solutions against student developed criteria (WATPPS59)	Analyse design processes and solutions against student developed criteria (WATPPS67)		Evaluate critically how well student-developed solutions and existing information systems and policies take account of future risks and sustainability and provide opportunities for innovation (VCDTCD054)

# 9-10 Australian Digital Technologies Curriculum Mapping Tool



Collaborating and managing				Data and Information
Australian	Western Australian Level 9	Western Australian Level 10	New South Wales Stage 5	Victorian
<p>Create interactive solutions for sharing ideas and information online, taking into account safety, social contexts and legal responsibilities (ACTDIP043)</p> <p>Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability (ACTDIP044)</p>	<p>Work independently, and collaboratively to manage projects, using digital technology and an iterative and collaborative approach. Considers time, cost, risk and safety (WATPPS60)</p>	<p>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)</p>		<p>Manage and collaboratively create interactive solutions for sharing ideas and information online, taking into account social contexts and legal responsibilities (VCDTDI049)</p>
	<b>Digital Implementation</b>			
	<p>Create and use interactive solutions for sharing ideas and information online, taking into account social contexts (ACTDIP043)</p>	<p>Create interactive solutions for sharing ideas and information online, taking into account social contexts and legal responsibilities (ACTDIP043)</p>		

## Achievement Standards

Australian	Western Australian Level 9	Western Australian Level 10	New South Wales Stage 5	Victorian
<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 identify the role of hardware and software have in managing, controlling and securing the movement of data in digital systems. They identify different methods used for manipulation, storage and transmission of data. Students explore techniques for acquiring, storing and validating quantitative and qualitative data. They analyse and visualise data to create information and address complex problems. Students create a design for the user experience of a digital system supported by drafts with annotations. They design algorithms, represented diagrammatically and in structured English, and validate plans and programs through tracing. Students implement and apply data storage and organisation techniques. They create and use interactive solutions for sharing ideas and information online, taking into account social contexts. In Digital Technologies, students identify and define the needs of a stakeholder to create a brief for a solution. They investigate a selection of components/resources to develop ideas, identifying and considering constraints. Students apply design thinking, creativity and enterprise skills. They provide design solutions assessing alternative designs against given criteria, using appropriate technical terms and technology. Students select, test and safely implement appropriate technologies and processes to make</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</p>		<p>By the end of Level 10, students explain the control and management of networked digital systems and the data security implications of the interaction between hardware, software and users. Students explain simple data compression, and why content data are separated from presentation. They take account of privacy and security requirements when selecting and validating data and use digital systems to analyse, visualise and model salient aspects of data. Students share and collaborate online, establishing protocols for the legal and safe use, transmission and maintenance of data and projects. Students define and decompose complex problems in terms of functional and non-functional requirements. They design and evaluate user experiences and algorithms, and develop and test modular programs, including an object-oriented program. Students evaluate their solutions and information systems in terms of risk, sustainability and potential for innovation.</p>

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Australian	Western Australian Level 9	Western Australian Level 10	New South Wales Stage 5	Victorian
	<p>solutions. They evaluate design processes against student-developed criteria. Students work independently and collaboratively to manage projects, using digital technology and an iterative and collaborative approach. They consider time, cost, risk and safety.</p>	<p>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>		