

MARTY EDU – CURRICULUM GRID

AUSTRALIAN F-10 CURRICULUM – DIGITAL TECHNOLOGIES, DESIGN & TECHNOLOGIES

● = Fully addresses the Benchmark ○ = Partially addresses the benchmark

Curriculum Organiser			Lesson 1.1	Lesson 1.2	Lesson 1.3	Lesson 1.4
	ID	Descriptor				
Digital Technologies	ACTDIK001	Recognise and explore digital systems (hardware and software components) for a purpose	●	●	●	●
	ACTDIK002	Recognise and explore patterns in data and represent data as pictures, symbols and diagrams	●	●	●	●
	ACTDIP003	Collect, explore and sort data, and use digital systems to present the data creatively			○	○
	ACTDIP004	Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems	●	●	●	●
	ACTDIP005	Explore how people safely use common information systems to meet information, communication and recreation needs				
	ACTDIP006	Create and organise ideas and information using information systems independently and with others, and share these with known people in safe online environments				
	ACTDIK007	Identify and explore a range of digital systems with peripheral devices for different purposes, and transmit different types of data				
	ACTDIK008	Recognise different types of data and explore how the same data can be represented in different ways			○	○

ACTDIP009	Collect, access and present different types of data using simple software to create information and solve problems			○	○
ACTDIP010	Define simple problems, and describe and follow a sequence of steps and decisions (algorithms) needed to solve them	○	●	●	●
ACTDIP011	Implement simple digital solutions as visual programs with algorithms involving branching (decisions) and user input			○	○
ACTDIP012	Explain how student solutions and existing information systems meet common personal, school or community needs	●			●
ACTDIP013	Plan, create and communicate ideas and information independently and with others, applying agreed ethical and social protocols		●	●	●
ACTDIK014	Examine the main components of common digital systems and how they may connect together to form networks to transmit data				
ACTDIK015	Examine how whole numbers are used to represent all data in digital systems				
ACTDIP016	Acquire, store and validate different types of data, and use a range of software to interpret and visualise data to create information				
ACTDIP017	Define problems in terms of data and functional requirements drawing on previously solved problems				
ACTDIP018	Design a user interface for a digital system				
ACTDIP019	Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition)			○	○
ACTDIP020	Implement digital solutions as simple visual programs involving branching, iteration (repetition), and user input			○	○
ACTDIP021	Explain how student solutions and existing information systems are sustainable and meet current and future local community needs				

ACTDIP022	Plan, create and communicate ideas and information, including collaboratively online, applying agreed ethical, social and technical protocols				
ACTDIK023	Investigate how data is transmitted and secured in wired, wireless and mobile networks, and how the specifications affect performance				
ACTDIK024	Investigate how digital systems represent text, image and audio data in binary				
ACTDIP025	Acquire data from a range of sources and evaluate authenticity, accuracy and timeliness				
ACTDIP026	Analyse and visualise data using a range of software to create information, and use structured data to model objects or events				
ACTDIP027	Define and decompose real-world problems taking into account functional requirements and economic, environmental, social, technical and usability constraints	○		○	○
ACTDIP028	Design the user experience of a digital system, generating, evaluating and communicating alternative designs				○
ACTDIP029	Design algorithms represented diagrammatically and in English, and trace algorithms to predict output for a given input and to identify errors			○	○
ACTDIP030	Implement and modify programs with user interfaces involving branching, iteration and functions in a general-purpose programming language				○
ACTDIP031	Evaluate how student solutions and existing information systems meet needs, are innovative, and take account of future risks and sustainability				○
ACTDIP032	Plan and manage projects that create and communicate ideas and information collaboratively online, taking safety and social contexts into account				
ACTDIK033	Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems				
ACTDIK035	Analyse simple compression of data and how content data are separated from presentation				

	ACTDIP036	Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements				
	ACTDIP037	Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data				
	ACTDIP038	Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs				
	ACTDIP039	Design the user experience of a digital system by evaluating alternative designs against criteria including functionality, accessibility, usability, and aesthetics				○
	ACTDIP040	Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases				
	ACTDIP041	Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language				
	ACTDIP042	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				
	ACTDIP043	Create interactive solutions for sharing ideas and information online, taking into account safety, social contexts and illegal responsibilities				
	ACTDIP044	Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability				
Design and Technologies	ACTDEK001	Identify how people design and produce familiar products, services and environments and consider sustainability to meet personal and local community needs	●	○	○	○
	ACTDEK002	Explore how technologies use forces to create movement in products				○
	ACTDEK004	Explore the characteristics and properties of materials and components that are used to produce design solutions			○	○

ACTDEP005	Explore needs or opportunities for designing, and the technologies needed to realise designed solutions		○		○
ACTDEP006	Generate, develop and record design ideas through describing, drawing and modelling	●	●	●	●
ACTDEP007	Use materials, components, tools, equipment and techniques to safely make designed solutions				
ACTDEP008	Use personal preferences to evaluate the success of design ideas, processes and solutions including their care for environment				
ACTDEP009	Sequence steps for making designed solutions and working collaboratively	●	●	●	●
ACTDEK010	Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs				
ACTDEK011	Investigate how forces and the properties of materials affect the behaviour of a product or system				
ACTDEK013	Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes				
ACTDEP014	Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to produce designed solutions				
ACTDEP015	Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques				
ACTDEP016	Select and use materials, components, tools, equipment and techniques and use safe work practices to make designed solutions				
ACTDEP017	Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment				
ACTDEP018	Plan a sequence of production steps when making designed solutions individually and collaboratively				

	ACTDEK019	Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use				
	ACTDEK020	Investigate how electrical energy can control movement, sound or light in a designed product or system				
	ACTDEK023	Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use				
	ACTDEP024	Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended design solutions				
	ACTDEP025	Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques				
	ACTDEP026	Select appropriate materials, components, tools, equipment and techniques and apply safe procedures to make designed solutions				
	ACTDEP027	Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions				
	ACTDEP028	Develop project plans that include consideration of resources when making designed solutions individually and collaboratively				
	ACTDEK029	Investigate the ways in which products, services and environments evolve locally, regionally and globally and how competing factors including social, ethical and sustainability considerations are prioritised in the development of technologies and designed solutions for preferred futures				
	ACTDEK031	Analyse how motion, force and energy are used to manipulate and control electromechanical systems when designing simple, engineered solutions				
	ACTDEK034	Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment				

ACTDEP035	Critique needs or opportunities for designing and investigate, analyse and select from a range of materials, components, tools, equipment and processes to develop design ideas				
ACTDEP036	Generate, develop, test and communicate design ideas, plans and processes for various audiences using appropriate technical terms and technologies including graphical representation techniques				
ACTDEP037	Select and justify choices of materials, components, tools, equipment and techniques to effectively and safely make designed solutions				
ACTDEP038	Independently develop criteria for success to evaluate design ideas, processes and solutions and their sustainability				
ACTDEP039	Use project management processes when working individually and collaboratively to coordinate production of designed solutions				
ACTDEK040	Critically analyse factors, including social, ethical and sustainability considerations, that impact on designed solutions for global preferred futures and the complex design and production processes involves				
ACTDEK041	Explain how products, services and environments evolve with consideration of preferred futures and the impact of emerging technologies on design decisions				
ACTDEK043	Investigate and make judgements on how the characteristics and properties of materials are combined with force, motion and energy to create engineering solutions				
ACTDEK046	Investigate and make judgements on how the characteristics and properties of materials, systems, components, tools and equipment can be combined to create designed solutions				
ACTDEK047	Investigate and make judgements, within a range of technologies specialisations, on how technologies can be combined to create designed solutions				
ACTDEP048	Critique needs or opportunities to develop design briefs and investigate and select an increasingly sophisticated range of materials, systems, components, tools and equipment to develop design ideas				

	ACTDEP049	Develop, modify and communicate design ideas by applying design thinking, creativity, innovation and enterprise skills of increasing sophistication				
	ACTDEP050	Work flexibly to effectively and safely test, select, justify and use appropriate technologies and processes to make designed solutions				
	ACTDEP051	Evaluate design ideas, processes and solutions against comprehensive criteria for success recognising the need for sustainability				
	ACTDEP052	Develop project plans using digital technologies to plan and manage projects individually and collaboratively taking into consideration time, cost, risk and production processes				

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Curriculum Organiser			Lesson 1.5	Lesson 1.6	Lesson 1.7	Lesson 1.8	Lesson 1.9
	ID	Descriptor					
Digital Technologies	ACTDIK001	Recognise and explore digital systems (hardware and software components) for a purpose	●	●	●	●	●
	ACTDIK002	Recognise and explore patterns in data and represent data as pictures, symbols and diagrams	●	●	●	●	●
	ACTDIP003	Collect, explore and sort data, and use digital systems to present the data creatively	○	○	○	○	○
	ACTDIP004	Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems	●	●	●	●	●
	ACTDIP005	Explore how people safely use common information systems to meet information, communication and recreation needs					
	ACTDIP006	Create and organise ideas and information using information systems independently and with others, and share these with known people in safe online environments					
	ACTDIK007	Identify and explore a range of digital systems with peripheral devices for different purposes, and transmit different types of data					

ACTDIK008	Recognise different types of data and explore how the same data can be represented in different ways	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ACTDIP009	Collect, access and present different types of data using simple software to create information and solve problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ACTDIP010	Define simple problems, and describe and follow a sequence of steps and decisions (algorithms) needed to solve them	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ACTDIP011	Implement simple digital solutions as visual programs with algorithms involving branching (decisions) and user input	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ACTDIP012	Explain how student solutions and existing information systems meet common personal, school or community needs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ACTDIP013	Plan, create and communicate ideas and information independently and with others, applying agreed ethical and social protocols	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ACTDIK014	Examine the main components of common digital systems and how they may connect together to form networks to transmit data					
ACTDIK015	Examine how whole numbers are used to represent all data in digital systems					
ACTDIP016	Acquire, store and validate different types of data, and use a range of software to interpret and visualise data to create information					
ACTDIP017	Define problems in terms of data and functional requirements drawing on previously solved problems	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ACTDIP018	Design a user interface for a digital system		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
ACTDIP019	Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ACTDIP020	Implement digital solutions as simple visual programs involving branching, iteration (repetition), and user input	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

ACTDIP021	Explain how student solutions and existing information systems are sustainable and meet current and future local community needs					
ACTDIP022	Plan, create and communicate ideas and information, including collaboratively online, applying agreed ethical, social and technical protocols					
ACTDIK023	Investigate how data is transmitted and secured in wired, wireless and mobile networks, and how the specifications affect performance					
ACTDIK024	Investigate how digital systems represent text, image and audio data in binary					
ACTDIP025	Acquire data from a range of sources and evaluate authenticity, accuracy and timeliness					
ACTDIP026	Analyse and visualise data using a range of software to create information, and use structured data to model objects or events					
ACTDIP027	Define and decompose real-world problems taking into account functional requirements and economic, environmental, social, technical and usability constraints	○	○	○	○	○
ACTDIP028	Design the user experience of a digital system, generating, evaluating and communicating alternative designs	○	○		○	○
ACTDIP029	Design algorithms represented diagrammatically and in English, and trace algorithms to predict output for a given input and to identify errors	○	○	○	○	○
ACTDIP030	Implement and modify programs with user interfaces involving branching, iteration and functions in a general-purpose programming language	○	○	○	○	●
ACTDIP031	Evaluate how student solutions and existing information systems meet needs, are innovative, and take account of future risks and sustainability	○	○	○	○	○
ACTDIP032	Plan and manage projects that create and communicate ideas and information collaboratively online, taking safety and social contexts into account					

ACTDIK033	Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems					
ACTDIK035	Analyse simple compression of data and how content data are separated from presentation					
ACTDIP036	Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements					
ACTDIP037	Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data					
ACTDIP038	Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs					
ACTDIP039	Design the user experience of a digital system by evaluating alternative designs against criteria including functionality, accessibility, usability, and aesthetics		○		○	○
ACTDIP040	Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases					
ACTDIP041	Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language					
ACTDIP042	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					
ACTDIP043	Create interactive solutions for sharing ideas and information online, taking into account safety, social contexts and illegal responsibilities					
ACTDIP044	Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability					

Design and Technologies	ACTDEK001	Identify how people design and produce familiar products, services and environments and consider sustainability to meet personal and local community needs	○	○	○	○	○
	ACTDEK002	Explore how technologies use forces to create movement in products	○			○	
	ACTDEK004	Explore the characteristics and properties of materials and components that are used to produce design solutions	○	○	○	○	
	ACTDEP005	Explore needs or opportunities for designing, and the technologies needed to realise designed solutions	○	○	○	○	○
	ACTDEP006	Generate, develop and record design ideas through describing, drawing and modelling	●	●	●	●	●
	ACTDEP007	Use materials, components, tools, equipment and techniques to safely make designed solutions					
	ACTDEP008	Use personal preferences to evaluate the success of design ideas, processes and solutions including their care for environment					
	ACTDEP009	Sequence steps for making designed solutions and working collaboratively	●	●	●	●	●
	ACTDEK010	Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs	○	○	○	○	○
	ACTDEK011	Investigate how forces and the properties of materials affect the behaviour of a product or system					
	ACTDEK013	Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes		○		○	
	ACTDEP014	Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to produce designed solutions					

ACTDEP015	Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques	○	○	○	○	○
ACTDEP016	Select and use materials, components, tools, equipment and techniques and use safe work practices to make designed solutions		○		○	
ACTDEP017	Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment					
ACTDEP018	Plan a sequence of production steps when making designed solutions individually and collaboratively	●	●	●	●	●
ACTDEK019	Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use					
ACTDEK020	Investigate how electrical energy can control movement, sound or light in a designed product or system					
ACTDEK023	Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use					
ACTDEP024	Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended design solutions					
ACTDEP025	Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques					
ACTDEP026	Select appropriate materials, components, tools, equipment and techniques and apply safe procedures to make designed solutions					
ACTDEP027	Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions					
ACTDEP028	Develop project plans that include consideration of resources when making designed solutions individually and collaboratively					

ACTDEK029	Investigate the ways in which products, services and environments evolve locally, regionally and globally and how competing factors including social, ethical and sustainability considerations are prioritised in the development of technologies and designed solutions for preferred futures					
ACTDEK031	Analyse how motion, force and energy are used to manipulate and control electromechanical systems when designing simple, engineered solutions					
ACTDEK034	Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment					
ACTDEP035	Critique needs or opportunities for designing and investigate, analyse and select from a range of materials, components, tools, equipment and processes to develop design ideas					
ACTDEP036	Generate, develop, test and communicate design ideas, plans and processes for various audiences using appropriate technical terms and technologies including graphical representation techniques					
ACTDEP037	Select and justify choices of materials, components, tools, equipment and techniques to effectively and safely make designed solutions					
ACTDEP038	Independently develop criteria for success to evaluate design ideas, processes and solutions and their sustainability					
ACTDEP039	Use project management processes when working individually and collaboratively to coordinate production of designed solutions					
ACTDEK040	Critically analyse factors, including social, ethical and sustainability considerations, that impact on designed solutions for global preferred futures and the complex design and production processes involves					
ACTDEK041	Explain how products, services and environments evolve with consideration of preferred futures and the impact of emerging technologies on design decisions					

	ACTDEK043	Investigate and make judgements on how the characteristics and properties of materials are combined with force, motion and energy to create engineering solutions					
	ACTDEK046	Investigate and make judgements on how the characteristics and properties of materials, systems, components, tools and equipment can be combined to create designed solutions					
	ACTDEK047	Investigate and make judgements, within a range of technologies specialisations, on how technologies can be combined to create designed solutions					
	ACTDEP048	Critique needs or opportunities to develop design briefs and investigate and select an increasingly sophisticated range of materials, systems, components, tools and equipment to develop design ideas					
	ACTDEP049	Develop, modify and communicate design ideas by applying design thinking, creativity, innovation and enterprise skills of increasing sophistication					
	ACTDEP050	Work flexibly to effectively and safely test, select, justify and use appropriate technologies and processes to make designed solutions					
	ACTDEP051	Evaluate design ideas, processes and solutions against comprehensive criteria for success recognising the need for sustainability					
	ACTDEP052	Develop project plans using digital technologies to plan and manage projects individually and collaboratively taking into consideration time, cost, risk and production processes					

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AUSTRALIAN F-10 CURRICULUM – DIGITAL TECHNOLOGIES, DESIGN & TECHNOLOGIES

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Curriculum Organiser			Lesson 1.10	Lesson 1.11	Lesson 1.12	Lesson 1.13	Lesson 1.14
	ID	Descriptor					
Digital Technologies	ACTDIK001	Recognise and explore digital systems (hardware and software components) for a purpose	●	●	●	●	●
	ACTDIK002	Recognise and explore patterns in data and represent data as pictures, symbols and diagrams	●	●	●	●	●
	ACTDIP003	Collect, explore and sort data, and use digital systems to present the data creatively	○	○	○	○	○
	ACTDIP004	Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems	●	●	●	●	●
	ACTDIP005	Explore how people safely use common information systems to meet information, communication and recreation needs					
	ACTDIP006	Create and organise ideas and information using information systems independently and with others, and share these with known people in safe online environments					
	ACTDIK007	Identify and explore a range of digital systems with peripheral devices for different purposes, and transmit different types of data					

ACTDIK008	Recognise different types of data and explore how the same data can be represented in different ways	●	●	●	●	○
ACTDIP009	Collect, access and present different types of data using simple software to create information and solve problems	○	○	○	●	●
ACTDIP010	Define simple problems, and describe and follow a sequence of steps and decisions (algorithms) needed to solve them	●	●	●	●	●
ACTDIP011	Implement simple digital solutions as visual programs with algorithms involving branching (decisions) and user input	●	●	●	●	●
ACTDIP012	Explain how student solutions and existing information systems meet common personal, school or community needs	●	●	●	●	●
ACTDIP013	Plan, create and communicate ideas and information independently and with others, applying agreed ethical and social protocols	●	●	●	●	●
ACTDIK014	Examine the main components of common digital systems and how they may connect together to form networks to transmit data					
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ACTDIP017	Define problems in terms of data and functional requirements drawing on previously solved problems	●	●	●	●	●
ACTDIP018	Design a user interface for a digital system	○		○		
ACTDIP019	Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition)	●	●	●	●	●
ACTDIP020	Implement digital solutions as simple visual programs involving branching, iteration (repetition), and user input	●	●	●	●	●

ACTDIP021	Explain how student solutions and existing information systems are sustainable and meet current and future local community needs				○	○
ACTDIP022	Plan, create and communicate ideas and information, including collaboratively online, applying agreed ethical, social and technical protocols					
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ACTDIP027	Define and decompose real-world problems taking into account functional requirements and economic, environmental, social, technical and usability constraints	○	○	○	●	●
ACTDIP028	Design the user experience of a digital system, generating, evaluating and communicating alternative designs	○	○	○	○	○
ACTDIP029	Design algorithms represented diagrammatically and in English, and trace algorithms to predict output for a given input and to identify errors	●	●	●	●	●
ACTDIP030	Implement and modify programs with user interfaces involving branching, iteration and functions in a general-purpose programming language	●		●		
ACTDIP031	Evaluate how student solutions and existing information systems meet needs, are innovative, and take account of future risks and sustainability	○	○	○	○	○
ACTDIP032	Plan and manage projects that create and communicate ideas and information collaboratively online, taking safety and social contexts into account					

ACTDIK033	Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems					
ACTDIK035	Analyse simple compression of data and how content data are separated from presentation					
ACTDIP036	Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements					
ACTDIP037	Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data					
ACTDIP038	Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs				○	○
ACTDIP039	Design the user experience of a digital system by evaluating alternative designs against criteria including functionality, accessibility, usability, and aesthetics	○			○	○
ACTDIP040	Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases	●		○	○	○
ACTDIP041	Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language		○		○	
ACTDIP042	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					○
ACTDIP043	Create interactive solutions for sharing ideas and information online, taking into account safety, social contexts and illegal responsibilities					
ACTDIP044	Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability					

Design and Technologies	ACTDEK001	Identify how people design and produce familiar products, services and environments and consider sustainability to meet personal and local community needs				<input type="radio"/>	<input type="radio"/>
	ACTDEK002	Explore how technologies use forces to create movement in products				<input type="radio"/>	
	ACTDEK004	Explore the characteristics and properties of materials and components that are used to produce design solutions				<input type="radio"/>	<input type="radio"/>
	ACTDEP005	Explore needs or opportunities for designing, and the technologies needed to realise designed solutions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	ACTDEP006	Generate, develop and record design ideas through describing, drawing and modelling	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	ACTDEP007	Use materials, components, tools, equipment and techniques to safely make designed solutions					<input type="radio"/>
	ACTDEP008	Use personal preferences to evaluate the success of design ideas, processes and solutions including their care for environment	<input type="radio"/>				<input type="radio"/>
	ACTDEP009	Sequence steps for making designed solutions and working collaboratively	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
	ACTDEK010	Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs				<input type="radio"/>	<input type="radio"/>
	ACTDEK011	Investigate how forces and the properties of materials affect the behaviour of a product or system					
	ACTDEK013	Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes				<input type="radio"/>	<input checked="" type="radio"/>
	ACTDEP014	Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to produce designed solutions					

ACTDEP015	Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques	○	○	○	○	●
ACTDEP016	Select and use materials, components, tools, equipment and techniques and use safe work practices to make designed solutions				○	○
ACTDEP017	Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment					●
ACTDEP018	Plan a sequence of production steps when making designed solutions individually and collaboratively	●	●	●	●	●
ACTDEK019	Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use					
ACTDEK020	Investigate how electrical energy can control movement, sound or light in a designed product or system					
ACTDEK023	Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use					
ACTDEP024	Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended design solutions					
ACTDEP025	Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques					○
ACTDEP026	Select appropriate materials, components, tools, equipment and techniques and apply safe procedures to make designed solutions					○
ACTDEP027	Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions					
ACTDEP028	Develop project plans that include consideration of resources when making designed solutions individually and collaboratively					

ACTDEK029	Investigate the ways in which products, services and environments evolve locally, regionally and globally and how competing factors including social, ethical and sustainability considerations are prioritised in the development of technologies and designed solutions for preferred futures					
ACTDEK031	Analyse how motion, force and energy are used to manipulate and control electromechanical systems when designing simple, engineered solutions					
ACTDEK034	Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment					
ACTDEP035	Critique needs or opportunities for designing and investigate, analyse and select from a range of materials, components, tools, equipment and processes to develop design ideas					
ACTDEP036	Generate, develop, test and communicate design ideas, plans and processes for various audiences using appropriate technical terms and technologies including graphical representation techniques					
ACTDEP037	Select and justify choices of materials, components, tools, equipment and techniques to effectively and safely make designed solutions					
ACTDEP038	Independently develop criteria for success to evaluate design ideas, processes and solutions and their sustainability					
ACTDEP039	Use project management processes when working individually and collaboratively to coordinate production of designed solutions					
ACTDEK040	Critically analyse factors, including social, ethical and sustainability considerations, that impact on designed solutions for global preferred futures and the complex design and production processes involves					
ACTDEK041	Explain how products, services and environments evolve with consideration of preferred futures and the impact of emerging technologies on design decisions					

	ACTDEK043	Investigate and make judgements on how the characteristics and properties of materials are combined with force, motion and energy to create engineering solutions					
	ACTDEK046	Investigate and make judgements on how the characteristics and properties of materials, systems, components, tools and equipment can be combined to create designed solutions					
	ACTDEK047	Investigate and make judgements, within a range of technologies specialisations, on how technologies can be combined to create designed solutions					
	ACTDEP048	Critique needs or opportunities to develop design briefs and investigate and select an increasingly sophisticated range of materials, systems, components, tools and equipment to develop design ideas					
	ACTDEP049	Develop, modify and communicate design ideas by applying design thinking, creativity, innovation and enterprise skills of increasing sophistication					
	ACTDEP050	Work flexibly to effectively and safely test, select, justify and use appropriate technologies and processes to make designed solutions					
	ACTDEP051	Evaluate design ideas, processes and solutions against comprehensive criteria for success recognising the need for sustainability					
	ACTDEP052	Develop project plans using digital technologies to plan and manage projects individually and collaboratively taking into consideration time, cost, risk and production processes					

MARTY EDU – CURRICULUM GRID

AUSTRALIAN F-10 CURRICULUM – DIGITAL TECHNOLOGIES, DESIGN & TECHNOLOGIES

● = Fully addresses the Benchmark ○ = Partially addresses the benchmark

Curriculum Organiser			Lesson 1.15	Lesson 1.16	Lesson 1.17	Lesson 1.18
	ID	Descriptor				
Digital Technologies	ACTDIK001	Recognise and explore digital systems (hardware and software components) for a purpose	●	●	●	●
	ACTDIK002	Recognise and explore patterns in data and represent data as pictures, symbols and diagrams	●	●	●	●
	ACTDIP003	Collect, explore and sort data, and use digital systems to present the data creatively	○	○	○	○
	ACTDIP004	Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems	●	●	●	●
	ACTDIP005	Explore how people safely use common information systems to meet information, communication and recreation needs				
	ACTDIP006	Create and organise ideas and information using information systems independently and with others, and share these with known people in safe online environments				
	ACTDIK007	Identify and explore a range of digital systems with peripheral devices for different purposes, and transmit different types of data			○	○
	ACTDIK008	Recognise different types of data and explore how the same data can be represented in different ways	●	●	●	●

ACTDIP009	Collect, access and present different types of data using simple software to create information and solve problems		○	○	○
ACTDIP010	Define simple problems, and describe and follow a sequence of steps and decisions (algorithms) needed to solve them	●	●	●	●
ACTDIP011	Implement simple digital solutions as visual programs with algorithms involving branching (decisions) and user input	●	●	●	●
ACTDIP012	Explain how student solutions and existing information systems meet common personal, school or community needs		●	●	●
ACTDIP013	Plan, create and communicate ideas and information independently and with others, applying agreed ethical and social protocols	●	●	●	●
ACTDIK014	Examine the main components of common digital systems and how they may connect together to form networks to transmit data				
ACTDIK015	Examine how whole numbers are used to represent all data in digital systems				
ACTDIP016	Acquire, store and validate different types of data, and use a range of software to interpret and visualise data to create information				
ACTDIP017	Define problems in terms of data and functional requirements drawing on previously solved problems		●	●	
ACTDIP018	Design a user interface for a digital system			○	●
ACTDIP019	Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition)	●	●	●	●
ACTDIP020	Implement digital solutions as simple visual programs involving branching, iteration (repetition), and user input	○	○	●	●
ACTDIP021	Explain how student solutions and existing information systems are sustainable and meet current and future local community needs		○		○

ACTDIP022	Plan, create and communicate ideas and information, including collaboratively online, applying agreed ethical, social and technical protocols				
ACTDIK023	Investigate how data is transmitted and secured in wired, wireless and mobile networks, and how the specifications affect performance				
ACTDIK024	Investigate how digital systems represent text, image and audio data in binary				
ACTDIP025	Acquire data from a range of sources and evaluate authenticity, accuracy and timeliness			○	○
ACTDIP026	Analyse and visualise data using a range of software to create information, and use structured data to model objects or events			○	○
ACTDIP027	Define and decompose real-world problems taking into account functional requirements and economic, environmental, social, technical and usability constraints		○	○	○
ACTDIP028	Design the user experience of a digital system, generating, evaluating and communicating alternative designs			○	○
ACTDIP029	Design algorithms represented diagrammatically and in English, and trace algorithms to predict output for a given input and to identify errors	○	○	○	○
ACTDIP030	Implement and modify programs with user interfaces involving branching, iteration and functions in a general-purpose programming language				●
ACTDIP031	Evaluate how student solutions and existing information systems meet needs, are innovative, and take account of future risks and sustainability		○		○
ACTDIP032	Plan and manage projects that create and communicate ideas and information collaboratively online, taking safety and social contexts into account				
ACTDIK033	Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems				
ACTDIK035	Analyse simple compression of data and how content data are separated from presentation				

	ACTDIP036	Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements				
	ACTDIP037	Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data				
	ACTDIP038	Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs		○		
	ACTDIP039	Design the user experience of a digital system by evaluating alternative designs against criteria including functionality, accessibility, usability, and aesthetics				○
	ACTDIP040	Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases	○			
	ACTDIP041	Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language				
	ACTDIP042	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				
	ACTDIP043	Create interactive solutions for sharing ideas and information online, taking into account safety, social contexts and illegal responsibilities				
	ACTDIP044	Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability				
	Design and Technologies	ACTDEK001	Identify how people design and produce familiar products, services and environments and consider sustainability to meet personal and local community needs			
ACTDEK002		Explore how technologies use forces to create movement in products			○	
ACTDEK004		Explore the characteristics and properties of materials and components that are used to produce design solutions		○		

ACTDEP005	Explore needs or opportunities for designing, and the technologies needed to realise designed solutions		<input type="radio"/>		
ACTDEP006	Generate, develop and record design ideas through describing, drawing and modelling	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
ACTDEP007	Use materials, components, tools, equipment and techniques to safely make designed solutions		<input type="radio"/>		
ACTDEP008	Use personal preferences to evaluate the success of design ideas, processes and solutions including their care for environment		<input type="radio"/>		<input type="radio"/>
ACTDEP009	Sequence steps for making designed solutions and working collaboratively	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
ACTDEK010	Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs				
ACTDEK011	Investigate how forces and the properties of materials affect the behaviour of a product or system			<input type="radio"/>	<input type="radio"/>
ACTDEK013	Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes		<input type="radio"/>		
ACTDEP014	Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to produce designed solutions				
ACTDEP015	Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ACTDEP016	Select and use materials, components, tools, equipment and techniques and use safe work practices to make designed solutions				
ACTDEP017	Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment				
ACTDEP018	Plan a sequence of production steps when making designed solutions individually and collaboratively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

ACTDEK019	Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use				
ACTDEK020	Investigate how electrical energy can control movement, sound or light in a designed product or system				
ACTDEK023	Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use		○		
ACTDEP024	Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended design solutions				
ACTDEP025	Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques				
ACTDEP026	Select appropriate materials, components, tools, equipment and techniques and apply safe procedures to make designed solutions				
ACTDEP027	Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions				
ACTDEP028	Develop project plans that include consideration of resources when making designed solutions individually and collaboratively				
ACTDEK029	Investigate the ways in which products, services and environments evolve locally, regionally and globally and how competing factors including social, ethical and sustainability considerations are prioritised in the development of technologies and designed solutions for preferred futures				
ACTDEK031	Analyse how motion, force and energy are used to manipulate and control electromechanical systems when designing simple, engineered solutions				
ACTDEK034	Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment				

ACTDEP035	Critique needs or opportunities for designing and investigate, analyse and select from a range of materials, components, tools, equipment and processes to develop design ideas				
ACTDEP036	Generate, develop, test and communicate design ideas, plans and processes for various audiences using appropriate technical terms and technologies including graphical representation techniques				
ACTDEP037	Select and justify choices of materials, components, tools, equipment and techniques to effectively and safely make designed solutions				
ACTDEP038	Independently develop criteria for success to evaluate design ideas, processes and solutions and their sustainability				
ACTDEP039	Use project management processes when working individually and collaboratively to coordinate production of designed solutions				
ACTDEK040	Critically analyse factors, including social, ethical and sustainability considerations, that impact on designed solutions for global preferred futures and the complex design and production processes involves				
ACTDEK041	Explain how products, services and environments evolve with consideration of preferred futures and the impact of emerging technologies on design decisions				
ACTDEK043	Investigate and make judgements on how the characteristics and properties of materials are combined with force, motion and energy to create engineering solutions				
ACTDEK046	Investigate and make judgements on how the characteristics and properties of materials, systems, components, tools and equipment can be combined to create designed solutions				
ACTDEK047	Investigate and make judgements, within a range of technologies specialisations, on how technologies can be combined to create designed solutions				
ACTDEP048	Critique needs or opportunities to develop design briefs and investigate and select an increasingly sophisticated range of materials, systems, components, tools and equipment to develop design ideas				

	ACTDEP049	Develop, modify and communicate design ideas by applying design thinking, creativity, innovation and enterprise skills of increasing sophistication				
	ACTDEP050	Work flexibly to effectively and safely test, select, justify and use appropriate technologies and processes to make designed solutions				
	ACTDEP051	Evaluate design ideas, processes and solutions against comprehensive criteria for success recognising the need for sustainability				
	ACTDEP052	Develop project plans using digital technologies to plan and manage projects individually and collaboratively taking into consideration time, cost, risk and production processes				

MARTY EDU – CURRICULUM GRID

AUSTRALIAN F-10 CURRICULUM – DIGITAL TECHNOLOGIES, DESIGN & TECHNOLOGIES

● = Fully addresses the Benchmark ○ = Partially addresses the benchmark

Curriculum Organiser			Lesson 1.19	Lesson 1.20	Lesson 1.21	Lesson 1.22	Lesson 1.23
	ID	Descriptor					
Digital Technologies	ACTDIK001	Recognise and explore digital systems (hardware and software components) for a purpose	●	●	●	●	●
	ACTDIK002	Recognise and explore patterns in data and represent data as pictures, symbols and diagrams	●	●	●	●	●
	ACTDIP003	Collect, explore and sort data, and use digital systems to present the data creatively	○	○	○	○	○
	ACTDIP004	Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems	●	●	●	●	●
	ACTDIP005	Explore how people safely use common information systems to meet information, communication and recreation needs					
	ACTDIP006	Create and organise ideas and information using information systems independently and with others, and share these with known people in safe online environments					
	ACTDIK007	Identify and explore a range of digital systems with peripheral devices for different purposes, and transmit different types of data					

ACTDIK008	Recognise different types of data and explore how the same data can be represented in different ways	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ACTDIP009	Collect, access and present different types of data using simple software to create information and solve problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ACTDIP010	Define simple problems, and describe and follow a sequence of steps and decisions (algorithms) needed to solve them	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
ACTDIP011	Implement simple digital solutions as visual programs with algorithms involving branching (decisions) and user input	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
ACTDIP012	Explain how student solutions and existing information systems meet common personal, school or community needs	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
ACTDIP013	Plan, create and communicate ideas and information independently and with others, applying agreed ethical and social protocols	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
ACTDIK014	Examine the main components of common digital systems and how they may connect together to form networks to transmit data					
ACTDIK015	Examine how whole numbers are used to represent all data in digital systems					
ACTDIP016	Acquire, store and validate different types of data, and use a range of software to interpret and visualise data to create information					
ACTDIP017	Define problems in terms of data and functional requirements drawing on previously solved problems	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
ACTDIP018	Design a user interface for a digital system		<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
ACTDIP019	Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition)	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
ACTDIP020	Implement digital solutions as simple visual programs involving branching, iteration (repetition), and user input	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

ACTDIP021	Explain how student solutions and existing information systems are sustainable and meet current and future local community needs			○	○	○
ACTDIP022	Plan, create and communicate ideas and information, including collaboratively online, applying agreed ethical, social and technical protocols		○	○	○	○
ACTDIK023	Investigate how data is transmitted and secured in wired, wireless and mobile networks, and how the specifications affect performance					
ACTDIK024	Investigate how digital systems represent text, image and audio data in binary					
ACTDIP025	Acquire data from a range of sources and evaluate authenticity, accuracy and timeliness					
ACTDIP026	Analyse and visualise data using a range of software to create information, and use structured data to model objects or events					
ACTDIP027	Define and decompose real-world problems taking into account functional requirements and economic, environmental, social, technical and usability constraints	○	○	●	●	●
ACTDIP028	Design the user experience of a digital system, generating, evaluating and communicating alternative designs	○	○	●	●	●
ACTDIP029	Design algorithms represented diagrammatically and in English, and trace algorithms to predict output for a given input and to identify errors	●	●	●	●	●
ACTDIP030	Implement and modify programs with user interfaces involving branching, iteration and functions in a general-purpose programming language	●	●	●	●	●
ACTDIP031	Evaluate how student solutions and existing information systems meet needs, are innovative, and take account of future risks and sustainability	○	○	○	○	○
ACTDIP032	Plan and manage projects that create and communicate ideas and information collaboratively online, taking safety and social contexts into account					

ACTDIK033	Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems					
ACTDIK035	Analyse simple compression of data and how content data are separated from presentation					
ACTDIP036	Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements					
ACTDIP037	Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data					
ACTDIP038	Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs			○	○	○
ACTDIP039	Design the user experience of a digital system by evaluating alternative designs against criteria including functionality, accessibility, usability, and aesthetics			○	○	○
ACTDIP040	Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases	●	○	○	●	○
ACTDIP041	Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language			○		
ACTDIP042	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			○	○	○
ACTDIP043	Create interactive solutions for sharing ideas and information online, taking into account safety, social contexts and illegal responsibilities					
ACTDIP044	Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability					

Design and Technologies	ACTDEK001	Identify how people design and produce familiar products, services and environments and consider sustainability to meet personal and local community needs					
	ACTDEK002	Explore how technologies use forces to create movement in products			○		
	ACTDEK004	Explore the characteristics and properties of materials and components that are used to produce design solutions			○		
	ACTDEP005	Explore needs or opportunities for designing, and the technologies needed to realise designed solutions	○	○	○	○	○
	ACTDEP006	Generate, develop and record design ideas through describing, drawing and modelling	●	●	●	●	●
	ACTDEP007	Use materials, components, tools, equipment and techniques to safely make designed solutions					
	ACTDEP008	Use personal preferences to evaluate the success of design ideas, processes and solutions including their care for environment	○	○	○	○	○
	ACTDEP009	Sequence steps for making designed solutions and working collaboratively	●	●	●	●	●
	ACTDEK010	Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs			○		
	ACTDEK011	Investigate how forces and the properties of materials affect the behaviour of a product or system					
	ACTDEK013	Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes				○	
	ACTDEP014	Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to produce designed solutions					

ACTDEP015	Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques	○	○	○	○	○
ACTDEP016	Select and use materials, components, tools, equipment and techniques and use safe work practices to make designed solutions				○	
ACTDEP017	Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment			○	○	○
ACTDEP018	Plan a sequence of production steps when making designed solutions individually and collaboratively	●	●	●	●	●
ACTDEK019	Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use					
ACTDEK020	Investigate how electrical energy can control movement, sound or light in a designed product or system					
ACTDEK023	Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use					
ACTDEP024	Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended design solutions					
ACTDEP025	Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques			○	○	○
ACTDEP026	Select appropriate materials, components, tools, equipment and techniques and apply safe procedures to make designed solutions				○	○
ACTDEP027	Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions					
ACTDEP028	Develop project plans that include consideration of resources when making designed solutions individually and collaboratively					

ACTDEK029	Investigate the ways in which products, services and environments evolve locally, regionally and globally and how competing factors including social, ethical and sustainability considerations are prioritised in the development of technologies and designed solutions for preferred futures					
ACTDEK031	Analyse how motion, force and energy are used to manipulate and control electromechanical systems when designing simple, engineered solutions					
ACTDEK034	Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment					
ACTDEP035	Critique needs or opportunities for designing and investigate, analyse and select from a range of materials, components, tools, equipment and processes to develop design ideas					
ACTDEP036	Generate, develop, test and communicate design ideas, plans and processes for various audiences using appropriate technical terms and technologies including graphical representation techniques					
ACTDEP037	Select and justify choices of materials, components, tools, equipment and techniques to effectively and safely make designed solutions					
ACTDEP038	Independently develop criteria for success to evaluate design ideas, processes and solutions and their sustainability					
ACTDEP039	Use project management processes when working individually and collaboratively to coordinate production of designed solutions					
ACTDEK040	Critically analyse factors, including social, ethical and sustainability considerations, that impact on designed solutions for global preferred futures and the complex design and production processes involves					
ACTDEK041	Explain how products, services and environments evolve with consideration of preferred futures and the impact of emerging technologies on design decisions					

	ACTDEK043	Investigate and make judgements on how the characteristics and properties of materials are combined with force, motion and energy to create engineering solutions					
	ACTDEK046	Investigate and make judgements on how the characteristics and properties of materials, systems, components, tools and equipment can be combined to create designed solutions					
	ACTDEK047	Investigate and make judgements, within a range of technologies specialisations, on how technologies can be combined to create designed solutions					
	ACTDEP048	Critique needs or opportunities to develop design briefs and investigate and select an increasingly sophisticated range of materials, systems, components, tools and equipment to develop design ideas					
	ACTDEP049	Develop, modify and communicate design ideas by applying design thinking, creativity, innovation and enterprise skills of increasing sophistication					
	ACTDEP050	Work flexibly to effectively and safely test, select, justify and use appropriate technologies and processes to make designed solutions					
	ACTDEP051	Evaluate design ideas, processes and solutions against comprehensive criteria for success recognising the need for sustainability					
	ACTDEP052	Develop project plans using digital technologies to plan and manage projects individually and collaboratively taking into consideration time, cost, risk and production processes					

MARTY EDU – CURRICULUM GRID

AUSTRALIAN F-10 CURRICULUM – DIGITAL TECHNOLOGIES, DESIGN & TECHNOLOGIES

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Curriculum Organiser			Lesson 2.1	Lesson 2.2	Lesson 2.3	Lesson 2.4
	ID	Descriptor				
Digital Technologies	ACTDIK001	Recognise and explore digital systems (hardware and software components) for a purpose	●	●	●	●
	ACTDIK002	Recognise and explore patterns in data and represent data as pictures, symbols and diagrams	○	●	●	●
	ACTDIP003	Collect, explore and sort data, and use digital systems to present the data creatively	○	○	○	○
	ACTDIP004	Follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems	○	●	●	●
	ACTDIP005	Explore how people safely use common information systems to meet information, communication and recreation needs				
	ACTDIP006	Create and organise ideas and information using information systems independently and with others, and share these with known people in safe online environments				
	ACTDIK007	Identify and explore a range of digital systems with peripheral devices for different purposes, and transmit different types of data				
	ACTDIK008	Recognise different types of data and explore how the same data can be represented in different ways		○		

ACTDIP009	Collect, access and present different types of data using simple software to create information and solve problems			<input type="radio"/>	<input type="radio"/>
ACTDIP010	Define simple problems, and describe and follow a sequence of steps and decisions (algorithms) needed to solve them		<input type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
ACTDIP011	Implement simple digital solutions as visual programs with algorithms involving branching (decisions) and user input		<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
ACTDIP012	Explain how student solutions and existing information systems meet common personal, school or community needs		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ACTDIP013	Plan, create and communicate ideas and information independently and with others, applying agreed ethical and social protocols	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
ACTDIK014	Examine the main components of common digital systems and how they may connect together to form networks to transmit data				
ACTDIK015	Examine how whole numbers are used to represent all data in digital systems				
ACTDIP016	Acquire, store and validate different types of data, and use a range of software to interpret and visualise data to create information				
ACTDIP017	Define problems in terms of data and functional requirements drawing on previously solved problems				<input type="radio"/>
ACTDIP018	Design a user interface for a digital system			<input type="radio"/>	
ACTDIP019	Design, modify and follow simple algorithms involving sequences of steps, branching, and iteration (repetition)		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ACTDIP020	Implement digital solutions as simple visual programs involving branching, iteration (repetition), and user input			<input type="radio"/>	
ACTDIP021	Explain how student solutions and existing information systems are sustainable and meet current and future local community needs			<input type="radio"/>	<input type="radio"/>

ACTDIP022	Plan, create and communicate ideas and information, including collaboratively online, applying agreed ethical, social and technical protocols				
ACTDIK023	Investigate how data is transmitted and secured in wired, wireless and mobile networks, and how the specifications affect performance				
ACTDIK024	Investigate how digital systems represent text, image and audio data in binary				
ACTDIP025	Acquire data from a range of sources and evaluate authenticity, accuracy and timeliness				○
ACTDIP026	Analyse and visualise data using a range of software to create information, and use structured data to model objects or events				
ACTDIP027	Define and decompose real-world problems taking into account functional requirements and economic, environmental, social, technical and usability constraints			○	○
ACTDIP028	Design the user experience of a digital system, generating, evaluating and communicating alternative designs			○	○
ACTDIP029	Design algorithms represented diagrammatically and in English, and trace algorithms to predict output for a given input and to identify errors	○	○	○	○
ACTDIP030	Implement and modify programs with user interfaces involving branching, iteration and functions in a general-purpose programming language		○	○	○
ACTDIP031	Evaluate how student solutions and existing information systems meet needs, are innovative, and take account of future risks and sustainability			○	○
ACTDIP032	Plan and manage projects that create and communicate ideas and information collaboratively online, taking safety and social contexts into account				
ACTDIK033	Investigate the role of hardware and software in managing, controlling and securing the movement of and access to data in networked digital systems				
ACTDIK035	Analyse simple compression of data and how content data are separated from presentation				

	ACTDIP036	Develop techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements				
	ACTDIP037	Analyse and visualise data to create information and address complex problems, and model processes, entities and their relationships using structured data				
	ACTDIP038	Define and decompose real-world problems precisely, taking into account functional and non-functional requirements and including interviewing stakeholders to identify needs				○
	ACTDIP039	Design the user experience of a digital system by evaluating alternative designs against criteria including functionality, accessibility, usability, and aesthetics			○	○
	ACTDIP040	Design algorithms represented diagrammatically and in structured English and validate algorithms and programs through tracing and test cases		○	○	○
	ACTDIP041	Implement modular programs, applying selected algorithms and data structures including using an object-oriented programming language				
	ACTDIP042	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				
	ACTDIP043	Create interactive solutions for sharing ideas and information online, taking into account safety, social contexts and illegal responsibilities				
	ACTDIP044	Plan and manage projects using an iterative and collaborative approach, identifying risks and considering safety and sustainability				
	Design and Technologies	ACTDEK001	Identify how people design and produce familiar products, services and environments and consider sustainability to meet personal and local community needs	○		○
ACTDEK002		Explore how technologies use forces to create movement in products			○	
ACTDEK004		Explore the characteristics and properties of materials and components that are used to produce design solutions				●

ACTDEP005	Explore needs or opportunities for designing, and the technologies needed to realise designed solutions				●
ACTDEP006	Generate, develop and record design ideas through describing, drawing and modelling	●	●	●	●
ACTDEP007	Use materials, components, tools, equipment and techniques to safely make designed solutions			○	
ACTDEP008	Use personal preferences to evaluate the success of design ideas, processes and solutions including their care for environment			○	○
ACTDEP009	Sequence steps for making designed solutions and working collaboratively	●	●	●	●
ACTDEK010	Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs				
ACTDEK011	Investigate how forces and the properties of materials affect the behaviour of a product or system			○	○
ACTDEK013	Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes				
ACTDEP014	Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to produce designed solutions				
ACTDEP015	Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques			○	○
ACTDEP016	Select and use materials, components, tools, equipment and techniques and use safe work practices to make designed solutions				
ACTDEP017	Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment				
ACTDEP018	Plan a sequence of production steps when making designed solutions individually and collaboratively	○	○	○	○

ACTDEK019	Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments for current and future use				
ACTDEK020	Investigate how electrical energy can control movement, sound or light in a designed product or system				
ACTDEK023	Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use				○
ACTDEP024	Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended design solutions				
ACTDEP025	Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques				
ACTDEP026	Select appropriate materials, components, tools, equipment and techniques and apply safe procedures to make designed solutions				
ACTDEP027	Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions				
ACTDEP028	Develop project plans that include consideration of resources when making designed solutions individually and collaboratively				
ACTDEK029	Investigate the ways in which products, services and environments evolve locally, regionally and globally and how competing factors including social, ethical and sustainability considerations are prioritised in the development of technologies and designed solutions for preferred futures				
ACTDEK031	Analyse how motion, force and energy are used to manipulate and control electromechanical systems when designing simple, engineered solutions				
ACTDEK034	Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment				

ACTDEP035	Critique needs or opportunities for designing and investigate, analyse and select from a range of materials, components, tools, equipment and processes to develop design ideas				
ACTDEP036	Generate, develop, test and communicate design ideas, plans and processes for various audiences using appropriate technical terms and technologies including graphical representation techniques				
ACTDEP037	Select and justify choices of materials, components, tools, equipment and techniques to effectively and safely make designed solutions				
ACTDEP038	Independently develop criteria for success to evaluate design ideas, processes and solutions and their sustainability				
ACTDEP039	Use project management processes when working individually and collaboratively to coordinate production of designed solutions				
ACTDEK040	Critically analyse factors, including social, ethical and sustainability considerations, that impact on designed solutions for global preferred futures and the complex design and production processes involves				
ACTDEK041	Explain how products, services and environments evolve with consideration of preferred futures and the impact of emerging technologies on design decisions				
ACTDEK043	Investigate and make judgements on how the characteristics and properties of materials are combined with force, motion and energy to create engineering solutions				
ACTDEK046	Investigate and make judgements on how the characteristics and properties of materials, systems, components, tools and equipment can be combined to create designed solutions				
ACTDEK047	Investigate and make judgements, within a range of technologies specialisations, on how technologies can be combined to create designed solutions				
ACTDEP048	Critique needs or opportunities to develop design briefs and investigate and select an increasingly sophisticated range of materials, systems, components, tools and equipment to develop design ideas				

	ACTDEP049	Develop, modify and communicate design ideas by applying design thinking, creativity, innovation and enterprise skills of increasing sophistication				
	ACTDEP050	Work flexibly to effectively and safely test, select, justify and use appropriate technologies and processes to make designed solutions				
	ACTDEP051	Evaluate design ideas, processes and solutions against comprehensive criteria for success recognising the need for sustainability				
	ACTDEP052	Develop project plans using digital technologies to plan and manage projects individually and collaboratively taking into consideration time, cost, risk and production processes				