



## DESIGN AND TECHNOLOGIES – Scope and sequence P–6

	Pre-primary	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Knowledge and understanding</b>							
<b>Technologies and society</b>	People produce familiar products to meet personal and community needs	People produce familiar products and services to meet personal and community needs	People design and produce familiar products, services and environments to meet local and community needs	Role of people in design and technologies occupations  Ways products, services and environments are designed to meet community needs	Role of people in design and technologies occupations  Ways products, services and environments are designed to meet community needs, including consideration of sustainability	How people address competing considerations when designing products, services and environments	How people address competing considerations, including sustainability when designing products, services and environments for current and future use
<b>Technologies contexts</b>	<i>In Pre-primary, students will have opportunities to create designed solutions in at least one of the technologies contexts below (Food and fibre production includes Food specialisations in Pre-primary)</i>	<i>In Year 1, students will have opportunities to create designed solutions in at least one of the technologies contexts below (Food and fibre production includes Food specialisations in Year 1)</i>	<i>In Year 2, students will have opportunities to create designed solutions in at least one of the technologies contexts below (Food and fibre production includes Food specialisations in Year 2)</i>	<i>In Year 3, students will have opportunities to create designed solutions in at least one of the technologies contexts below (Food and fibre production includes Food specialisations in Year 3)</i>	<i>In Year 4, students will have opportunities to create designed solutions in at least one of the technologies contexts below (Food and fibre production includes Food specialisations in Year 4)</i>	<i>In Year 5, students will have opportunities to create designed solutions in at least one of the technologies contexts below</i>	<i>In Year 6, students will have opportunities to create designed solutions in at least one of the technologies contexts below</i>
<b>Engineering principles and systems</b>	Ways in which products move: push, pull, bounce, slide, fall, spin, float	Ways products can be moved using technology	Forces create movement in products	Forces, and the properties of materials, affect the behaviour of a product	Forces, and the properties of materials, affect the behaviour of a product or system	Forces can control movement, sound or light in a product or system	Electrical energy and forces can control movement, sound or light in a product or system
<b>Food and fibre production</b>	Plant and animal products are used in everyday life for food, clothing and shelter	Plants and animals used for production have basic needs, such as food/nutrients, water, space, protection	Food and fibre choices for healthy living	Types of food and fibre produced in different environments, cultures or time periods, including the equipment used to produce or prepare them	Types of technologies used in food and fibre production or processing, including how they are used to help meet consumer needs	People in design and technologies occupations aim to increase efficiency of production systems, or consumer satisfaction of food and fibre products	Past performance, and current and future needs are considered when designing sustainable food and fibre systems for products

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<b>Food specialisations</b>						Food safety and hygiene practices	Principles of food preparation for healthy eating
<b>Materials and technologies specialisation</b>	Characteristics of materials can be explored using senses	Characteristics and behaviours of individual materials used in products	Characteristics and properties of materials and individual components that are used to produce design solutions	Suitability and safe practice when using materials, tools and equipment for a range of purposes	Suitability and safe practice when using materials, systems and components for a range of purposes	Characteristics and properties of a range of materials and components, and the suitability and safe practice of their use	Characteristics, properties and safe practice of a range of materials, systems, tools and equipment; and evaluate the suitability of their use
<b>Processes and production skills</b>							
<b>Creating solutions by:</b>							
<b>Investigating and defining</b>	Explore needs for design	Explore opportunities for design	Explore design to meet needs or opportunities	Create a sequence of steps to solve a given task	Define a sequence of steps to design a solution for a given task  Identify and choose the appropriate resources from a given set	Define a problem, and set of sequenced steps, with users making a decision to create a solution for a given task  Identify available resources	Define a problem, and a set of sequenced steps, with users making decisions to create a solution for a given task  Identify available resources
<b>Designing</b>	Generate and record design ideas through describing, drawing, modelling and/or a sequence of written or spoken steps	Develop and communicate design ideas through describing, drawing, modelling and/or a sequence of written or spoken steps	Develop, communicate and discuss design ideas through describing, drawing, modelling and/or a sequence of steps	Develop and communicate ideas using labelled drawings and appropriate technical terms	Develop and communicate design ideas and decisions using annotated drawings and appropriate technical terms	Develop and communicate alternative solutions, and follow design ideas, using annotated diagrams, storyboards and appropriate technical terms	Design, modify, follow and represent both diagrammatically, and in written text, alternative solutions using a range of techniques, appropriate technical terms and technology
<b>Producing and implementing</b>	Use given components and equipment to safely make simple solutions	Use given components and equipment to safely make solutions	Use components and given equipment to safely make solutions	Select, and safely use, appropriate components with given equipment to make a solution	Select, and safely use, appropriate components and equipment to make solutions	Select, and apply, safe procedures when using components and equipment to make solutions	Select, and apply, safe procedures when using a variety of components and equipment to make solutions
<b>Evaluating</b>	Use personal preferences to evaluate the success of simple solutions	Use personal preferences to evaluate the success of design processes	Use simple criteria to evaluate the success of design processes and solutions	Use criteria to evaluate design processes and solutions developed	Use criteria to evaluate and justify simple design processes and solutions	Develop negotiated criteria to evaluate and justify design processes and solutions	Develop collaborative criteria to evaluate and justify design processes and solutions

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	Pre-primary	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Collaborating and managing</b>	Works with others, or independently, when creating designs	Works with others, or independently, to safely create and share a sequence of steps for making a solution	Work collaboratively to safely create and share a procedure for a solution	Work collaboratively to safely plan and publish steps in a process	Work collaboratively to safely plan and publish a sequence of steps	Work collaboratively to safely develop and publish basic plans, including sequencing of steps	Work collaboratively, considering resources and safety, to plan, publish and manage projects, including sequenced steps

## DESIGN AND TECHNOLOGIES – Scope and sequence 7–10

	Year 7	Year 8	Year 9	Year 10
<b>Knowledge and understanding</b>				
<b>Technologies and society</b>	<p>Competing factors, including social, ethical and sustainability considerations, in the development of technologies</p> <p>Ways in which products, services and environments evolve locally, regionally and globally</p>	<p>Social, ethical and sustainability considerations, in the development of technologies and designed solutions, to meet community needs for economic, environmental and social sustainability</p> <p>Development of products, services and environments through the creativity, innovation and enterprise of individuals and groups</p>	<p>Social, ethical and sustainability considerations that impact on designed solutions</p> <p>Development of products, services and environments, with consideration of economic, environmental and social sustainability</p>	<p>Social, ethical and sustainability considerations that impact on designed solutions, complexity of design, and production processes involved</p> <p>Impact of emerging technologies on design decisions, and/or economic, environmental and social sustainability</p>
<b>Technologies contexts</b>	<i>In Year 7, students will have opportunities to create designed solutions in at least one of the technologies contexts below</i>	<i>In Year 8, students will have opportunities to create designed solutions in at least one of the technologies contexts below</i>	<i>In Year 9, students will have opportunities to create designed solutions in at least one of the technologies contexts below</i>	<i>In Year 10, students will have opportunities to create designed solutions in at least one of the technologies contexts below</i>
<b>Engineering principles and systems</b>	The use of motion, force and energy to manipulate and control electromechanical and mechanical systems	The design of simple solutions using motion, force and energy, to manipulate and control electromechanical and mechanical systems	The characteristics and properties of materials, combined with force, motion and energy, to create solutions	The process of materials being combined with force, motion and energy to create solutions
<b>Food and fibre production</b>	Production systems for food and fibre or their products, including key features of their design	Sustainable production systems are subject to competing demands (social, environmental, economic) and how these factors influence their design	Food and fibre production and/or marketing, and the generation of sustainable solutions	The role of emerging research and technology in the design of ethical and sustainable products
<b>Food specialisations</b>	Nutritional value and physical properties of food determine preparation techniques and presentation	Sensory properties of food to create healthy eating solutions	<p>Principles of food:</p> <ul style="list-style-type: none"> <li>• safety</li> <li>• preservation</li> <li>• preparation</li> <li>• presentation</li> <li>• physical properties</li> <li>• sensory properties</li> <li>• perceptions</li> <li>• nutrition</li> </ul>	Healthy eating through the skills and knowledge of nutrients and the application of the principles of food safety, preservation, preparation, presentation and sensory perceptions
<b>Materials and technologies specialisations</b>	Design decisions and processes influence the selection and combination of materials, systems, components, tools and equipment	Principles of the design process for the selection and combination of materials, systems, components, tools and equipment	<p>Characteristics and properties of materials, systems, components, tools and equipment used to create designed solutions</p> <p>Technologies can be combined and used to create designed solutions</p>	<p>The combination of a range of characteristics and properties of materials, systems, components, tools and equipment to create designed solutions</p> <p>Designed solutions within a range of technologies specialisations, using combined technologies</p>

## DESIGN AND TECHNOLOGIES – Scope and sequence 7–10

	Year 7	Year 8	Year 9	Year 10
<b>Processes and production skills</b>				
<b>Creating solutions by:</b>				
<b>Investigating and defining</b>	<p>Define and break down a given task, identifying the purpose</p> <p>Consider components/resources to develop solutions, identifying constraints</p>	<p>Investigate a given need or opportunity for a specific purpose</p> <p>Evaluate and apply a given brief</p> <p>Consider components/resources to develop solutions, identifying constraints</p>	<p>Identify and define the needs of a stakeholder, to create a brief, for a solution</p> <p>Investigate a selection of components/resources to develop solution ideas, identifying and considering constraints</p>	<p>Identify the needs of the client/stakeholder to determine the basis for a solution</p> <p>Create and critique briefs to solutions</p> <p>Investigate components/resources to develop increasingly sophisticated solutions, identifying and considering associated constraints</p>
<b>Designing</b>	<p>Design, develop, review and communicate design ideas, plans and processes within a given context, using a range of techniques, appropriate technical terms and technology</p> <p>Follow a plan designed to solve a problem, using a sequence of steps</p>	<p>Design, develop, evaluate and communicate alternative solutions, using appropriate technical terms and technology</p> <p>Produce a simple plan designed to solve a problem, using a sequence of steps</p>	<p>Apply design thinking, creativity and enterprise skills</p> <p>Design solutions assessing alternative designs against given criteria, using appropriate technical terms and technology</p>	<p>Apply design thinking, creativity, enterprise skills and innovation to develop, modify and communicate design ideas of increasing sophistication</p> <p>Design possible solutions, analysing designs against criteria, including functionality, accessibility, usability and aesthetics, using appropriate technical terms and technology</p>
<b>Producing and implementing</b>	<p>Safely make solutions using a range of components, equipment and techniques</p>	<p>Safely apply appropriate techniques to make solutions using a range of components and equipment</p>	<p>Safely select, implement and test appropriate technologies and processes, to make solutions</p>	<p>Safely select, justify, implement and test appropriate technologies and processes, to make solutions</p>
<b>Evaluating</b>	<p>Independently apply given contextual criteria to evaluate design processes and solutions</p>	<p>Develop contextual criteria independently to assess design processes and solutions</p>	<p>Evaluate design processes and solutions against student developed criteria</p>	<p>Analyse design processes and solutions against student developed criteria</p>
<b>Collaborating and managing</b>	<p>Work collaboratively, and individually, considering resources and safety; to plan, publish and manage projects, including sequenced steps</p>	<p>Plan, publish and manage projects, collaboratively and/or individually, considering safety, specific task requirements, time and other required resources</p>	<p>Project planning using appropriate interactive digital technology, creating an iterative and collaborative approach, identifying risk and safety considerations</p>	<p>Use appropriate interactive digital technology to plan and manage projects, using an iterative and collaborative approach; identifying risks and analysing time, cost, production processes, safety, sustainability and legal responsibilities</p>

## DIGITAL TECHNOLOGIES – Scope and sequence P–6

	Pre-primary	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Knowledge and understanding</b>							
<b>Digital systems</b>	Digital systems (hardware and software) are used at home, in the school and in the community	Digital systems (hardware and software) are used in everyday life and have specific features	Digital systems (hardware and software) are used for an identified purpose	Digital systems and peripheral devices are used for different purposes	Digital systems and peripheral devices are used for different purposes and can store and transmit different types of data	Digital systems have components with basic functions that may connect together to form networks which transmit data	Digital systems have components with basic functions and interactions that may be connected together to form networks which transmit different types of data
<b>Representations of data</b>	Data can have patterns and can be represented as pictures and symbols	Data can have patterns and can be represented as pictures, symbols and diagrams	Data can have patterns and can be represented and used to make simple conclusions	Different types of data can be represented in different ways	Different types of data, and the same data, can be represented in different ways	Data is represented using codes	Whole numbers are used to represent data in a digital system
<b>Processes and production skills</b>							
<b>Collecting managing and analysing data</b>	Collect and use data of any kind	Present data of any kind using a variety of digital tools	Present data using a variety of digital tools	Collect and present different types of data using simple software to create useful information	Collect and present different types of data for a specific purpose using software	Collect, store and present different types of data for a specific purpose using software	Collect, sort, interpret and visually present different types of data using software to manipulate data for a range of purposes
<b>Digital implementation</b>	Use data to complete a task  Engage with information known people have shared in an online environment, and model strategies to stay safe online	Use data to solve a simple task/problem  Share and publish information with known people in an online environment, modelling strategies to stay safe online	Use data to solve similar tasks/problems  Share and publish information in a safe online environment, with known people	Use visually represented sequenced steps (algorithms), including steps with decisions made by the user (branching)  Work with others to create and communicate ideas and information safely	Use simple visual programming environments that include a sequence of steps (algorithm) involving decisions made by the user (branching)  Work with others to create and communicate ideas and information safely, using agreed protocols (netiquette)	Design solutions to a user interface for a digital system  Design, follow and represent diagrammatically, a simple sequence of steps (algorithm), involving branching (decisions) and iteration (repetition)  Implement and use simple programming environments that include branching (decisions) and iteration (repetition)	Design, modify, follow and represent both diagrammatically, and in written text, simple algorithms (sequence of steps) involving branching (decisions) and iteration (repetition)  Implement and use simple visual programming environments that include branching (decisions), iteration (repetition) and user input

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	Pre-primary	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Digital implementation</b>						Create and communicate information, including online collaborative projects, using agreed social, ethical and technical protocols (codes of conduct)	Manage the creation and communication of information, including online collaborative projects, using agreed social, ethical and technical protocols
<b>Creating solutions by:</b>							
<b>Investigating and defining</b>	Explore needs for design	Explore opportunities for design	Explore design to meet needs or opportunities	Create a sequence of steps to solve a given task	Define a sequence of steps to design a solution for a given task  Identify and choose the appropriate resources from a given set	Define a problem, and set of sequenced steps, with users making a decision to create a solution for a given task  Identify available resources	Define a problem, and a set of sequenced steps, with users making decisions to create a solution for a given task  Identify available resources
<b>Designing</b>	Generate and record design ideas through describing, drawing, modelling and/or a sequence of written or spoken steps	Develop and communicate design ideas through describing, drawing, modelling and/or a sequence of written or spoken steps	Develop, communicate and discuss design ideas through describing, drawing, modelling and/or a sequence of steps	Develop and communicate ideas using labelled drawings and appropriate technical terms	Develop and communicate design ideas and decisions using annotated drawings and appropriate technical terms	Develop and communicate alternative solutions, and follow design ideas, using annotated diagrams, storyboards and appropriate technical terms	Design, modify, follow and represent both diagrammatically, and in written text, alternative solutions using a range of techniques, appropriate technical terms and technology
<b>Producing and implementing</b>	Use given components and equipment to safely make simple solutions	Use given components and equipment to safely make solutions	Use components and given equipment to safely make solutions	Select, and safely use, appropriate components with given equipment to make a solution	Select, and safely use, appropriate components and equipment to make solutions	Select, and apply, safe procedures when using components and equipment to make solutions	Select, and apply, safe procedures when using a variety of components and equipment to make solutions
<b>Evaluating</b>	Use personal preferences to evaluate the success of simple solutions	Use personal preferences to evaluate the success of design processes	Use simple criteria to evaluate the success of design processes and solutions	Use criteria to evaluate design processes and solutions developed	Use criteria to evaluate and justify simple design processes and solutions	Develop negotiated criteria to evaluate and justify design processes and solutions	Develop collaborative criteria to evaluate and justify design processes and solutions
<b>Collaborating and managing</b>	Works with others, or independently, when creating designs	Works with others, or independently, to safely create and share a sequence of steps for making a solution	Work collaboratively to safely create and share a procedure for a solution	Work collaboratively to safely plan and publish steps in a process	Work collaboratively to safely plan and publish a sequence of steps	Work collaboratively to safely develop and publish basic plans, including sequencing of steps	Work collaboratively, considering resources and safety, to plan, publish and manage projects, including sequenced steps

## DIGITAL TECHNOLOGIES – Scope and sequence 7–10

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<b>Knowledge and understanding</b>				
<b>Digital systems</b>	Different types of networks, including wired, wireless and mobile networks  Hardware components of a network	Methods of data transmission and security in wired, wireless and mobile networks  Specifications of hardware components and their impact on network activities	Role of hardware and software in managing, controlling and securing the movement of data in a digital system	Role of hardware and software in managing, controlling and securing access to data, in networked digital systems
<b>Representation of data</b>	Digital systems represent text, image and audio data	Binary is used to represent data in digital systems	Different methods of manipulation, storage and transmission of data	Simple compression of data and how content data is separated from presentation data
<b>Processes and production skills</b>				
<b>Collecting, managing and analysing data</b>	Explore how to acquire data from a range of digital sources  Create information using relevant software, and create data to model objects and/or events	Evaluate the authenticity, accuracy and timeliness of acquired data  Evaluate and visualise data, using a range of software, to create information, and use structured data to model objects or events	Explore techniques for acquiring, storing and validating quantitative and qualitative data  Analyse and visualise data to create information and address complex problems	Apply techniques for acquiring, storing and validating quantitative and qualitative data from a range of sources, considering privacy and security requirements  Analyse, visualise and model processes and entities, and their relationships, using structured data
<b>Digital implementation</b>	Design the user experience of a digital system  Create digital solutions that include a user interface where choices can be made  Create and communicate information collaboratively online, taking into account social contexts	Design the user experience of a digital system  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  Implement and modify solutions, that include user interfaces within a programming environment, including the need for choice of options and/or repeating options  Create and communicate interactive ideas collaboratively online, taking into account social contexts	Design the user experience of a digital system  Design algorithms, represented diagrammatically and in structured English, and validate plans and programs through tracing  Implement and apply data storage and organisation techniques  Create and use interactive solutions for sharing ideas and information online, taking into account social contexts	Design algorithms represented diagrammatically and in structured English, including iteration  Validate algorithms and programs using common acceptable methods  Implement data storage and organisation techniques within a programming environment  Create interactive solutions for sharing ideas and information online, taking into account social contexts and legal responsibilities



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<b>Creating solutions by:</b>				
<b>Investigating and defining</b>	Define and break down a given task, identifying the purpose  Consider components/resources to develop solutions, identifying constraints	Investigate a given need or opportunity for a specific purpose  Evaluate and apply a given brief  Consider components/resources to develop solutions, identifying constraints	Identify and define the needs of a stakeholder, to create a brief, for a solution  Investigate a selection of components/resources to develop solution ideas, identifying and considering constraints	Identify the needs of the client/stakeholder to determine the basis for a solution  Create and critique briefs to solutions  Investigate components/resources to develop increasingly sophisticated solutions, identifying and considering associated constraints
<b>Designing</b>	Design, develop, review and communicate design ideas, plans and processes within a given context, using a range of techniques, appropriate technical terms and technology  Follow a plan designed to solve a problem, using a sequence of steps	Design, develop, evaluate and communicate alternative solutions, using appropriate technical terms and technology  Produce a simple plan designed to solve a problem, using a sequence of steps	Apply design thinking, creativity and enterprise skills  Design solutions assessing alternative designs against given criteria, using appropriate technical terms and technology	Apply design thinking, creativity, enterprise skills and innovation to develop, modify and communicate design ideas of increasing sophistication  Design possible solutions, analysing designs against criteria, including functionality, accessibility, usability and aesthetics, using appropriate technical terms and technology
<b>Producing and implementing</b>	Safely make solutions using a range of components, equipment and techniques	Safely apply appropriate techniques to make solutions using a range of components and equipment	Safely select, implement and test appropriate technologies and processes, to make solutions	Safely select, justify, implement and test appropriate technologies and processes, to make solutions
<b>Evaluating</b>	Independently apply given contextual criteria to evaluate design processes and solutions	Develop contextual criteria independently to assess design processes and solutions	Evaluate design processes and solutions against student developed criteria	Analyse design processes and solutions against student developed criteria
<b>Collaborating and managing</b>	Work collaboratively, and individually, considering resources and safety; to plan, publish and manage projects, including sequenced steps	Plan, publish and manage projects, collaboratively and/or individually, considering safety, specific task requirements, time and other required resources	Project planning using appropriate interactive digital technology, creating an iterative and collaborative approach, identifying risk and safety considerations	Use appropriate interactive digital technology to plan and manage projects, using an iterative and collaborative approach; identifying risks and analysing time, cost, production processes, safety, sustainability and legal responsibilities