Western Australian Curriculum

Technologies | Design and Technologies

Scope and sequence of the mandated curriculum content

Pre-primary–Year 10 | Revised curriculum

For familiarisation in 2025

**Acknowledgement of Country**

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Overview

The current Western Australian Curriculum: Technologies was adopted and adapted from the Australian Curriculum version 8.4.

The revised Western Australian Curriculum: Technologies is adopted and adapted from the Australian Curriculum version 9.

The Technologies learning area comprises two subjects: Design and Technologies and Digital Technologies. The Technologies curriculum is written on the basis that students will study both Technologies subjects from Pre-primary to the end of Year 8. In Years 9 and 10 the study of Technologies is optional.

Guide to reading this document

The Scope and sequence for Design and Technologies shows the **mandated** curriculum for teaching, written as **content descriptions** across year levels so that a sequence of content can be viewed across the years of schooling from Pre‑primary to Year 10.

The document is organised by two Design and Technologies strands: Technologies and society and Design thinking skills.

The **Design and Technologies** subject includes four contexts: Engineering principles and systems; Food and fibre production; Food specialisations; and Materials and technologies specialisations. Within the Design and Technologies subject, students have the opportunity to study at least one of the contexts each year; it is desirable that schools provide students with the opportunity to engage with all contexts across Pre-primary to Year 10.

The **Design thinking skills** strand for **Pre-primary to Year 10** includes the sub-strands: Project management; Investigating and defining; Designing; Producing and implementing; and Evaluating. This strand is shared with the Digital Technologies subject.

The table below outlines the subject organisation for the Pre-primary to Year 10 Design and Technologies curriculum. The Design and Technologies subject includes four contexts.

|  |  |
| --- | --- |
| **Technologies and society** | **Design thinking skills** |
| Engineering principles and systems | Food and fibre production | * Project management
* Investigating and defining
* Designing
* Producing and implementing
* Evaluating
 |
| Food specialisations | Materials and technologies specialisations |

**Key**

The four Design and Technologies contexts and the abbreviations used in this document are listed below:

EP&S Engineering principles and systems

F&FP Food and fibre production

FS Food specialisations

M&TS Materials and technologies specialisations

Pre-primary–Year 6

Strand: Technologies and society

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Explore familiar technologies to meet personal needs | People use technologies to create products for personal needs | People use selected technologies to make familiar products and environments to meet local needs | Role of people in design and technologies occupations in the local community | Diverse roles for people in design and technologies occupations | People in design and technologies occupations consider competing factors in the design of products, services and/or environments | People in design and technologies occupations address competing considerations, including sustainable factors in the design of products, services and environments |
|  |  |  | Technologies are designed and used in products, services or environments to meet individual needs | Products, services and/or environments are designed to meet community (society) needs, including consideration of sustainable factors | Technologies are used in the design of products, and implementation of services and environments | Competing technologies are used for the design of products, services and environments for community needs |

Engineering principles and systems

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Objects can be moved when force is applied | Force generates movement in objects and can be affected by materials | Force can move objects within a system | Forces, and the properties of materials affect the behaviour of objects | Forces, and the properties of materials affect the behaviour of an object or system | Forces can control motion, sound or light in a product or system | Forces and electrical energy can control motion, sound or light in a product and/or system |

Food and fibre production

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Animals and plants have essential needs, including food, water, space and shelter  | Living things are used in everyday life for food and clothing  | Food and fibre are produced in different seasons and environments | Food and fibre produced to meet food and clothing needs | Food and fibre produced in different time periods or cultures, including the technologies and equipment used | Food and fibre production in environments for sustainable and regenerative practices | Food and fibre production systems for products, considering design features, consumer demand and managed environments |

Food specialisations

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Foods come in different colour/s, texture/s, flavour/s and shapesAppropriate hygiene practices are necessary for safe food handling | Familiar foods are sourced from various placesFoods are prepared in a range of ways for consumption | Staple foods from local sources are used to create a range of food products | Food selected to nourish the body, for energy to move and support growth | Physical properties of food influence selection and preparation | Systems for food preparation and food safety affect selection of food for meals/products | Food choices, consumer demands and preparation systems affect the use of a food in a meal/product |

Materials and technologies specialisations

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Everyday objects are made using different materials | Properties of a material determine their selection for a specified purpose | Materials can be combined to produce a product for a specified purpose | Properties of materials, suitability and safe practice using given technologies to create a product to achieve a purpose | Properties of materials and components for a range of purposes affect suitability and function in a system | Properties for a range of materials, related components and use of given technologies to achieve a purpose | Properties of selected materials, technologies, and production systems affect suitability and functionality in a product |

Strand: Design thinking skills

Sub-strand: Project management

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Share ideas to develop a solution | Share ideas and work with others to develop a solution | Plan, share ideas and work with others to develop a solution for a known user | Communicate ideas and follow a plan with consideration of time management, to develop a solution | Use agreed protocols and management roles to communicate ideas, plan and make decisions, to develop solutions | Use agreed protocols and management roles to communicate decisions, plan and manage time, to develop designed solutions | Use agreed protocols to set goals, manage competing factors, resources and time, to plan, develop and communicate decisions, when developing designed solutions for a given task |

Sub-strand: Investigating and defining

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Explore the purpose for design | Explore ideas and design opportunities for a personal need | Explore ideas and design opportunities for a known user | Define ideas and design opportunities for individual and/or local needs | Define the features of a design brief and the requirements of a design task for a community need | Break down a design brief to define the purpose and requirements for a given task | Break down a design brief to define the purpose, requirements and constraints for a given task |
|  |  |  |  | Investigate and select resources based on properties for the given task | Investigate and select resources based on properties and functions for the given task | Investigate and select resources considering constraints, properties and functions appropriate for the given task |

Sub-strand: Designing

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Design solutions through discussion, drawing and/or modelling to meet a personal need | Design solutions through drawing, modelling and/or a sequence of steps | Design solutions generated and communicated through discussion, drawing, modelling and/or a sequence of steps | Design solutions created with labelled drawings, use of technical terms and/or a sequence of steps | Design solutions through use of labelled drawings, technical terms, decision-making and/or a sequence of steps | Design solutions considering competing factors, with annotated diagrams, storyboards and/or a sequence of steps, using technical terms and an iterative process | Design alternative solutions achieved through an iterative process, including critical thinking, graphical representations, use of a range of technologies, techniques, technical terms and/or a sequence of steps |

Sub-strand: Producing and implementing

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Use available technologies and materials to safely create a solution | Use available technologies and materials to safely create a preferred solution | Use given equipment and technologies to safely create a solution | Use appropriate technologies and components with given equipment and follow agreed protocols to produce a designed solution | Use appropriate technologies, components and/or equipment and follow agreed protocols to produce a designed solution | Use technologies, components and/or equipment to implement agreed protocols to produce a designed solution | Use a range of technologies, components and/or equipment to implement agreed protocols to produce a designed solution |

Sub-strand: Evaluating

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Pre-primary | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Use personal preferences to evaluate the solution | Use personal preferences to evaluate the solution for a personal need | Use personal preferences and the needs of the known user to evaluate the solution | Use given criteria to evaluate diagrams, technologies and the components used for the designed solution | Use given criteria to evaluate design features, selected resources, decision‑making processes and the designed solution | Use given criteria to evaluate design features, consideration of competing factors, processes and the designed solution | Develop negotiated criteria to evaluate design features, graphics, selected technologies, processes and functionality with consideration of constraints for the designed solution |

Years 7–10

Strand: Technologies and society

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| People in design and technologies occupations consider competing factors, social and ethical influences and existing technologies for designed solutions | People design for change considering ethical and sustainable factors, available technologies and systems for designed solutions, locally and regionally | People consider social, ethical and sustainable factors, and use specialised technologies for designed solutions to address community needs | People consider social, ethical, sustainable and security factors to improve design and production systems using specialised technologies to achieve designed solutions |
| Products, services and/or environments evolve locally through the application of technologies | Products, services and/or environments are designed and developed with creative and innovative application of technologies | Products, services and environments are designed and developed with consideration of economic factors and alternative technologies | Products, services and environments are designed and developed with consideration of specialised occupations, economic and environmental factors to identify market opportunities, innovate, create and develop entrepreneurial behaviours |

Engineering principles and systems

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Force, motion and energy, including light and/or sound and/or heat and/or wind are used to control engineered systemsSocial and ethical considerations for the design and development of engineered products and systems, including ways products evolve locally to achieve designed solutions | Force, motion and energy are used to control and manipulate engineered systemsEthical and sustainable considerations for the design and development of engineered products and systems, including economic factors, use of locally or regionally sourced materials and reliable supply chains to achieve designed solutions | Properties of materials, combined with force, motion and energy influence the design of engineered products and systemsSocial, ethical and sustainable considerations for the design and development of engineered products and systems, including consumer and/or producer values and management of resources to achieve designed solutions for a specified community need | Effect of materials when combined with force, energy and/or motion in the design of ethical and sustainable engineered products and systemsSocial, ethical, sustainable, consumer and producer considerations in the design and development of entrepreneurial and marketing strategies for an engineering enterprise, including management of risks, security measures and for optimum quality and performance to achieve designed solutions |

Food and fibre production

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Features of production systems, including managed environments, regulatory requirements for quality and safely produced food and/or fibre productsSocial and ethical considerations for the design and development of food products and/or fibre products or a combination, including ways products evolve locally to achieve designed solutions | Process for selection of food and fibres, components, and systems, including for managed environments, to produce food and/or fibre productsEthical and sustainable considerations for the design and development of food products and/or fibre products or a combination, including economic factors, use of locally or regionally sourced food and fibre products, and reliable supply chains to achieve designed solutions | Competing factors (social, environmental, economic) influence the design and function of specialised food and fibre products and systemsSocial, environmental, economic and sustainable considerations for the design and development of specialised food and/or fibre products and systems, including consumer and/or producer values and management of resources to achieve designed solutions for a specified community need | Role of technological innovations in ways food and fibre products are grown, processed and marketed, in the design of ethical and sustainable food/fibre products and systemsSocial, ethical, sustainable, consumer and producer considerations in the design and development of entrepreneurial and marketing strategies for a food- and/or fibre-based enterprise, including management of risks, security measures and regulatory responsibilities for optimum quality and performance to achieve designed solutions |

Food specialisations

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Sensory properties and nutritional value of foods determine preparation, production and presentation techniquesSocial and ethical considerations for the design and development of meals and specialised food products, including ways products evolve locally to achieve designed solutions | Nutritious and sustainable diets, and physical properties of food determine processing techniquesEthical and sustainable considerations for the design and development of specialised food products and systems, including economic factors, locally or regionally sourced produce and reliable supply chains to achieve designed solutions | Wet and dry processing techniques and effect on nutrition, considering demographic groups, food safety including regulatory responsibilities for packaging and labelling; storage and transport of food; food enhanced for nutrition and sensory properties, global tastes and perceptionsSocial, ethical and sustainable considerations for the design and development of specialised food products and systems, including consumer and/or producer values and management of resources to achieve designed solutions for a specified community need | Processing techniques and the preservation of food products, considering application of nutrition principles; ways sensory and physicalproperties of food influence the design, preparation and development of specialised food productsSocial, ethical, sustainable, consumer and producer considerations in the design and development of entrepreneurial and marketing strategies for a specialised food enterprise, including management of risks, security measures and regulatory responsibilities for optimum quality and performance to achieve designed solutions |

Materials and technologies specialisations

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Properties of combined materials, features of production systems, given components, tools and equipment for quality, safely produced productsSocial and ethical considerations for the design and development of products using specialised technologies, including ways products evolve locally to achieve designed solutions | Materials, components and systems, in combination with specialised technologies for the design, development and safe production of productsEthical and sustainable considerations for the development of specialised products and systems, including economic factors, locally or regionally sourced materials and reliable supply chains to achieve designed solutions | Properties of materials, components, specialised tools, equipment and technologies used in the design and development of production systems to produce materials-based productsSocial, ethical and sustainable considerations for the design and development of specialised materials-based products and systems, including consumer and/or producer values and management of resources to achieve designed solutions for a specified community need | Functional properties of materials, combined with components and application of specialised technologies and systems in the design and development of designed solutionsSocial, ethical, sustainable, consumer and producer considerations in the design and development of entrepreneurial and marketing strategies for specialised materials-based enterprise, including management of risks, security measures and regulatory responsibilities for optimum quality and performance to achieve designed solutions |

Strand: Design thinking skills

Sub-strand: Project management

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Plan, develop and communicate, using project management processes, considering time and available resources to achieve solutions | Plan, develop and communicate, using project management processes, considering time, resources and costs to achieve solutions | Manage projects, using suitable technologies, with an agile and collaborative approach. Use project management processes to consider time, risk, economic and sustainable factors | Manage projects, using suitable technologies, with an agile and collaborative approach. Use project management processes to consider time, production processes, social, ethical, economic and sustainable factors, and legal responsibilities |

Sub-strand: Investigating and defining

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Investigate and define the problem and requirements of a given design brief | Investigate a problem for a given need or opportunity | Ideate a problem and define the needs of an end user, through interviews and/or surveys | Ideate a problem and define the needs of the client/stakeholder through anecdotal evidence and/or data gathering techniques |
| Break down a given design brief, identifying and defining the purpose and competing considerations | Develop a design brief for a given need or opportunity | Develop a design brief for a solution based on end user needs | Develop a design brief for a solution or to innovate an existing product, service or environment |
| Consider given technologies, resources and/or components to develop solutions | Consider technologies, resources and/or components to develop solutions, identifying constraints | Investigate a range of technologies, resources and/or components to develop ideas and solutions, with consideration of social, ethical and other constraints | Investigate a range of technologies, resources and/or components to develop ideas and solutions, with consideration of social and ethical factors, legal responsibilities and competing constraints |

Sub-strand: Designing

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Design processes and solutions with given technologies and techniques, using appropriate technical terms | Design processes and solutions considering a range of technologies and techniques, using appropriate technical terms | Design alternative solutions considering available technologies, usability and aesthetics, using appropriate technical terms | Design alternative solutions considering available technologies, functionality, accessibility, usability and aesthetics, using appropriate technical terms |

Sub-strand: Producing and implementing

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Implement agreed protocols and use a range of technologies, components and/or equipment to produce designed solutions | Implement agreed protocols, a range of technologies, techniques, components and processes to produce designed solutions | Select, implement and test a range of technologies, techniques and processes to produce designed solutions and/or prototypes | Select, justify, implement and test a range of technologies, techniques and processes to produce designed solutions and/or prototypes |

Sub-strand: Evaluating

|  |  |  |  |
| --- | --- | --- | --- |
| Year 7 | Year 8 | Year 9 | Year 10 |
| Use given contextual criteria to evaluate design processes and solutions | Use student-developed contextual criteria to evaluate design processes and solutions | Evaluate design processes and solutions against student‑developed criteria | Evaluate design processes and solutions against student‑developed criteria |