Western Australian Curriculum

Technologies | Design and Technologies

Achievement standards | Pre-primary–Year 10 (Provisional)

For familiarisation in 2025

Acknowledgement of Country

Kaya. The School Curriculum and Standards Authority (the Authority) acknowledges that our offices are on Whadjuk Noongar boodjar and that we deliver our services on the country of many traditional custodians and language groups throughout Western Australia. The Authority acknowledges the traditional custodians throughout Western Australia and their continuing connection to land, waters and community. We offer our respect to Elders past and present.

Disclaimer

Any resources such as texts, websites and so on that may be referred to in this document are provided as examples of resources that teachers can use to support their learning programs. Their inclusion does not imply that they are mandatory or that they are the only resources relevant to the course. Teachers must exercise their professional judgement as to the appropriateness of any they may wish to use.

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Overview

An Achievement standard describes the quality of learning (e.g. the depth of conceptual understanding and the sophistication of skills) that would indicate the student is well placed to commence the learning required at the next level of achievement.

The Achievement standard describes an expected level that the majority of students are achieving or working towards by the end of that year of schooling. Some students will have progressed beyond the Achievement standard; others will need additional support.

The Achievement standards for the Technologies: Design and Technologies curriculum are provisional and will be validated once teachers have had the time to become familiar with the teaching and assessment of the revised curriculum.

Pre-primary

By the end of the year:

Children explore familiar objects within the community and recognise design thinking skills. In Engineering principles and systems, children observe how objects move when force is applied. In Food and fibre production, children connect animal and plant products for everyday use as food and/or clothing. In Food specialisations, children explore food for colour, texture, flavour and shape, and use hygiene practices. In Materials and technologies specialisations, children explore and identify materials to use for creation and/or construction of a variety of products, including for personal needs, considering the materials' properties.

In the Design and Technologies contexts, children explore the purpose for designed solutions. They generate, record and share design ideas through discussion, drawing and modelling. Children safely use given technologies (tools and equipment), to create solutions and evaluate these using personal preferences.

Pre-primary

Year 1

By the end of the year:

Children explore ways familiar products are designed, and recall design thinking skills. In Engineering principles and systems, children use forces to generate movement in objects and explore ideas for the reactions observed. In Food and fibre production, children identify the essential needs of plants and animals used for production. In Food specialisations, children investigate various sources of food and ways to prepare food for eating. In Materials and technologies specialisations, children observe, explore and select materials to use for construction of various products based on the materials' properties.

In the Design and Technologies contexts, children explore opportunities when designing solutions. They communicate and develop design ideas through drawing, modelling and/or a sequence of steps. Children use given technologies (tools and equipment) and work safely to create products for preferred solutions. They use personal preferences to evaluate processes and designed solutions. Children work with others, guided by a sequence of steps, to create products for a personal need.

Year 2

By the end of the year:

Children explore and exemplify roles of people in designing solutions for familiar products and environments. In Engineering principles and systems, children use a range of forces to move objects within a system and observe reactions. In Food and fibre production, children make connections between different seasons and environments. In Food specialisations, children select food from local sources to create a food product. In Materials and technologies specialisations, children create products for a specified purpose, considering the properties of the materials available.

In the Design and Technologies contexts, children explore design solutions to meet local needs or design opportunities for a known user. They generate, communicate and explore ideas for designed solutions through discussion, drawing, modelling and/or sequenced steps. Children use given technologies and components to safely create products. They use personal preferences and the needs of known users to evaluate the designed solution and the process used.

Year 2

Year 3

By the end of the year:

Students explore and recognise roles people in Design and Technologies occupations have in the local community. They explore ways technologies are designed for solutions and used to create products, services or environments to meet individual or local community needs. In Engineering principles and systems, students observe and recognise ways forces and the properties of materials affect the behaviour of objects. In Food and fibre production, students recognise food and fibre are produced to meet food and clothing needs. In Food specialisations, students select food to nourish the body for energy to move and support growth. In Materials and technologies specialisations, students select and safely use suitable materials, appropriate technologies and components to create a product to achieve a designed solution.

In the Design and Technologies contexts, students develop a sequence of steps to achieve a designed solution. They define features of a design brief and communicate ideas using labelled drawings and technical terms. Students select and safely use appropriate technologies and components to develop a solution. They use given criteria to evaluate diagrams, technologies and components used for the designed solution. Students follow a plan, communicate sequenced steps to manage and create a product, service or environment for an individual or local community need.

Year 3

Year 4

By the end of the year:

Students recognise diverse roles people in Design and Technologies occupations have in the community. They consider ways products, services and/or environments are designed to achieve planned solutions that meet community needs, considering sustainable factors. In Engineering principles and systems, students recognise ways forces and properties of materials affect the behaviour of an object or system. In Food and fibre production, students explore ways technologies are used in a range of environments, cultures and/or time periods for food and natural fibre production. In Food specialisations, students select and prepare food, considering a range of physical properties. In Materials and technologies specialisations, students select materials and components for preferred properties, suitability and function for a range of purposes.

In the Design and Technologies contexts, students investigate and select resources suitable for a designed solution to achieve a given task. Students manage, communicate and define ideas using labelled drawings, appropriate technical terms, decision-making and/or a sequence of steps. They implement agreed protocols, appropriate technologies and components to produce designed solutions. Students use given criteria to evaluate design features, selected resources and solutions for a given task. They use management roles to plan, communicate ideas and make decisions to safely achieve designed solutions.

Year 5

By the end of the year:

Students identify ways people in Design and Technologies occupations consider competing factors in the design of products, services and environments. In Engineering principles and systems, students distinguish various ways forces control movement, sound or light in a product or system. In Food and fibre production, students identify ways to improve efficiency of production systems, considering sustainable factors for food and natural fibre products. In Food specialisations, students implement food preparation systems, considering ways food safety affects the selection of food for designed solutions. In Materials and technologies specialisations, students consider the properties for a range of materials, suitable components and use of appropriate technologies to achieve a designed solution for an identified purpose.

In the Design and Technologies contexts, students break down a design brief to define the purpose for a given task, including required resources, technologies and components. They manage and communicate alternative ideas using annotated diagrams and storyboards applying appropriate technical terms for designed solutions. Students use management roles to plan, manage time and communicate decisions, and implement agreed protocols when using technologies and components to produce a designed solution. They use given criteria to evaluate design features, competing factors and the sequence of steps used.

Year 5

Year 6

By the end of the year:

Students identify ways people address competing considerations, including sustainable factors in the design of products, services and environments. In Engineering principles and systems, students connect ways electrical energy and forces can control motion, sound or light in a product or system. In Food and fibre production, students consider design features, consumer demand and managed environments for food and natural fibre systems. In Food specialisations, students consider food choices, consumer demands, and preparation systems in the design of a meal/food product. In Materials and technologies specialisations, students consider the properties of selected materials, technologies and production systems, to plan and develop a designed solution for an identified purpose.

In the Design and Technologies contexts, students define ways competing considerations affect decisions on the selection of technologies, resources, techniques and sustainable factors in the design of a solution. Students manage and consider alternative solutions through discussion, critical thinking, modifying processes and initial design ideas using a range of appropriate technical terms, technologies and techniques. They implement production plans and safe procedures when using a variety of technologies and components to produce solutions. Students develop negotiated criteria to evaluate design features, selected technologies, processes and functionality of the designed solution. They use agreed protocols to set goals, manage competing factors, resources and time, and communicate decisions and solutions for a given task.

Year 7

By the end of the year:

Students consider ways products, services and/or environments evolve locally. They recognise competing factors, including social and ethical influences and existing technologies for designed solutions. In Engineering principles and systems, students use motion, force and energy to manipulate and control engineered systems. In Food and fibre production, students identify features of production systems including managed environments to produce local products and achieve designed solutions. In Food specialisations, students recognise ways nutritional values and sensory properties of food determine preparation techniques and presentation of a designed solution. In Materials and technologies specialisations, students identify ways the properties of materials, specialised technologies and production processes influence designed solutions to achieve quality and safely produced products.

In the Design and Technologies contexts, students investigate and define the purpose for a given task and design solutions by considering constraints, social and ethical factors, available specialised technologies and ways products evolve locally. Students implement agreed protocols using a range of techniques, technologies, components and processes to produce designed solutions. They apply given contextual criteria to evaluate design processes and solutions. Students plan, develop and communicate ideas using project management processes/skills, considering time and available resources to achieve solutions.

Year 7

Year 8

By the end of the year:

Students recognise ways products, services and/or environments are designed and developed with creative and innovative use of technologies. They consider ethical and sustainable factors to design solutions for a local or regional need, or opportunity. Designed solutions consider economic factors, locally or regionally sourced materials and reliable supply chains. In Engineering principles and systems, students use force, motion and energy to control and manipulate engineered systems, and produce products. In Food and fibre production, students consider ways competing factors influence the design of food and fibre production systems. In Food specialisations, students recognise ways nutritious, sustainable diets and the physical properties of food determine processing techniques for designed solutions. In Materials and technologies specialisations, students recognise how the selection of materials, components, systems and specialised technologies influence processes to achieve designed solutions for an identified need.

In the Design and Technologies contexts, students investigate and develop a design brief for a given need or opportunity to achieve a specific purpose. They consider a range of technologies, techniques, resources, use appropriate technical terms and communicate alternative ideas to develop designed solutions. Students implement agreed protocols, using a range of components and processes to produce designed solutions. They develop contextual criteria to evaluate design processes and solutions. Students plan, develop and communicate using project management processes/skills to achieve solutions.

Year 8

Year 9

By the end of the year:

Students consider ways social, ethical and sustainable factors affect the development of designed solutions for products, services and environments to meet community needs. In Engineering principles and systems, students consider properties of materials and the influencing factors of force, motion and energy for a designed solution. In Food and fibre production, students consider ways competing factors, including social, environmental and economic, influence design features and function of specialised food and fibre for designed solutions. In Food specialisations, students consider ways nutrition, sensory properties, global tastes, packaging and labelling responsibilities influence development of specialised products to achieve designed solutions. In Materials and technologies specialisations, students identify ways the properties of materials, components, systems and specialised technologies are used to develop designed solutions.

In the Design and Technologies contexts, students ideate a problem and define the needs of an end user to develop a design brief for a solution. They investigate a range of technologies, resources and components required to develop ideas and solutions, with consideration of constraints. Students select, implement and test a range of technologies, techniques and processes to produce designed solutions and/or prototypes. They evaluate design processes and solutions against student-developed criteria including social and ethical factors. Students manage projects, using suitable technologies, an iterative and collaborative approach, and consider time, risk, economic and sustainable factors.

Year 10

By the end of the year:

Students consider ways social, ethical, sustainable and security factors affect designed solutions, complexity of design, and production processes. In Engineering principles and systems, students identify the process of combining materials with force, motion and energy to design solutions. In Food and fibre production, students consider the role of technological innovations in ways food and fibre products are grown, processed and marketed in the design of sustainable products and systems. In Food specialisations, students select processing techniques for the preservation of food products, considering nutrition principles, consumer and/or producer values and ways properties influence design, preparation and development of specialised food products. In Materials and technologies specialisations, students consider the functional properties of materials and the application of specialised technologies and systems in the design and development of designed solutions.

In the Design and Technologies contexts, students ideate a problem and define the needs of the client/stakeholder to develop a design brief and determine the basis for a designed solution. They determine required resources and availability to develop designed solutions, considering associated constraints. Students consider specialised occupations and economic factors to identify market opportunities, innovate, create and develop entrepreneurial behaviours to design and develop products, services and environments for clients/stakeholders. Students provide relevant analysis to evaluate design processes and solutions against student-developed criteria. They manage projects, using suitable technologies, with an agile and collaborative approach. Students use project management processes/skills, consider time, production, social, ethical, economic and sustainable factors, and legal responsibilities.