# Western Australian Curriculum

## Technologies | Design and Technologies

Year level descriptions | Pre-primary–Year 10

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.

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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.

# Contents

# Overview

Year level descriptions provide an overview of the content being studied at that year level. The year level descriptions include reference to the phases of schooling to provide guidance about the sort of learning experiences that children and students are likely to engage with.

# Pre-primary

In the early childhood phase of schooling, learning, development and wellbeing are connected and learning builds on the *Early Years Learning Framework* and each child's funds of knowledge. A holistic curriculum that integrates knowledge, understandings, skills, values and attitudes across learning areas connects learning to children's lives and their natural curiosity about their world.

Design and Technologies provides opportunities for children to explore familiar technologies and the need for design, while developing an understanding of the components and processes involved. They generate, record and share design ideas through discussion and drawing to create solutions, and use personal preferences to evaluate products.

In Pre-primary, children discover the uses of familiar technologies in everyday life in at least one of the following Design and Technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations, and Materials and technologies specialisations. They explore common objects for their purpose and design features to develop understandings of designing solutions to solve a problem and meet personal needs. Children use technologies safely by observing teacher modelling or role-play to participate in either elementary engineering, plant/fibre production, food preparation or identify materials used for clothing needs. They experiment with identifying problems and draw on their memory of a sequence of steps to complete a task, such as packing away play equipment or completing a puzzle.

# Year 1

In the early childhood phase of schooling, learning, development and wellbeing are connected and learning experiences are informed by the Principles and Practices of the *Early Years Learning Framework*. A holistic curriculum that integrates knowledge, understandings, skills, values and attitudes across learning areas connects learning to children's lives and their natural curiosity about their world.

Design and Technologies provides opportunities for children to explore ways force generates movement in objects, or identify essential needs for animals and plants, or know sources of familiar food, or recognise properties of selected materials and develop design thinking skills to create solutions.

In Year 1, children have opportunities to explore and create solutions in at least one of the following Design and Technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations, and Materials and technologies specialisations. They investigate the process of designing and producing products for personal needs.

Children have a natural curiosity about their physical, social and technological world and learn through play and experimentation. They observe, manipulate and explore objects and ideas, materials and technologies. Children explore technologies taking particular note of the materials, equipment, and ways to work safely to make products. They begin to develop an understanding that products have a purpose for their own personal needs and that of others. Children have opportunities to create solutions through guided learning, focusing on ideas and design for a personal need. They use available technologies and materials to safely manage and create a preferred solution, and evaluate these solutions based on personal preferences.

# Year 2

In the early childhood phase of schooling, learning, development and wellbeing are connected and learning experiences are informed by the Principles and Practices of the *Early Years Learning Framework*. A holistic curriculum that integrates knowledge, understandings, skills, values and attitudes across learning areas connects learning to children's lives and their natural curiosity about their world.

Design and Technologies provides opportunities for children to explore ways people use selected technologies to create familiar products and environments to meet local needs and develop an understanding of the importance of managing design in creating products, systems or environments.

In Year 2, children are provided opportunities to create solutions in at least one of the following Design and Technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations, and Materials and technologies specialisations. Children explore ideas for design opportunities for a known user, such as a family member, and produce products using given equipment and technologies to safely create the designed solution. They have opportunities to create a range of solutions through guided learning and in collaboration with peers.

Children begin to develop design thinking skills by conceptualising possible solutions as a drawing, model, or sequence of steps in a process, and ways to control the use of selected technologies. They explore ways to manage and solve problems through discussion, planning, sharing of ideas and working with others to develop designed solutions and create products, systems or environments.

## Year 2

# Year 3

In the middle to late childhood phase of schooling, students develop a sense of self, their world expands, and they begin to see themselves as members of larger communities. Learning experiences emphasise and lead to an appreciation of both the commonality and diversity of human experience and concerns.

Design and Technologies builds on concepts previously acquired and students continue to develop understanding in design thinking skills, such as products to assist people with limited mobility, hearing or sight, and outlining procedures to achieve solutions.

In Year 3, students have opportunities to learn about technologies in society and to create solutions in at least one of the following Design and Technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations, and Materials and technologies specialisations. Students are provided with opportunities to manage, develop ideas, design and make products for individual and/or local community needs.

Students apply design thinking skills to generate multiple ideas for design of their solutions. They learn to define problems using project management skills. Students experiment with appropriate work protocols and consider ways to improve, modify or adapt for different situations, including safety. They use given criteria to evaluate diagrams, technologies and the components used for the designed solution.

# Year 4

In the middle to late childhood phase of schooling, students develop a sense of self, their world expands, and they begin to see themselves as members of larger communities. Learning experiences emphasise and lead to an appreciation of both the commonality and diversity of human experience and concerns.

Design and Technologies builds on concepts previously acquired and students continue to develop an understanding of design thinking skills, such as properties of materials and outlining step-by-step procedures. They have opportunities to create a range of solutions, including the reuse, repurpose and recycle of materials, and select materials from regenerated sources.

In Year 4, students have opportunities to learn about technologies in society and the diverse roles for people in design and technologies occupations and create solutions in at least one of the following Design and Technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations, and Materials and technologies specialisations. Students consider the way products, services and environments are designed to meet community needs, including consideration of sustainable factors.

Students define solutions to meet specific needs and consider society's use of technologies that meet community requirements and implement project management protocols, appropriate technologies, components and equipment to produce designed solutions. They use agreed protocols and management roles to communicate ideas, plan and make decisions to develop solutions to achieve a purpose. Students use given criteria to evaluate design features, selection of resources, and decision-making processes.

# Year 5

In the middle to late childhood phase of schooling, students develop a sense of self, their world expands, and they begin to see themselves as members of larger communities. Learning experiences emphasise and lead to an appreciation of both the commonality and diversity of human experience and concerns.

Design and Technologies builds on concepts previously acquired and students continue to develop an understanding of design thinking skills through collaborative planning and decision-making, and interaction with knowledgeable others. Students demonstrate an increased responsibility for project management with the implementation of agreed protocols to communicate and organise activities, individually, and in groups of varying sizes.

In Year 5, students have opportunities to learn about technologies in society, ways people in design and technologies occupations consider competing factors in the design of products, through different technologies, as they create solutions in at least one of the following Design and Technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations, and Materials and technologies specialisations. Students are provided with opportunities to produce products, services or environments, and develop an understanding of designing solutions, considering features, such as the repurposing of components, sustainable factors and regenerative practices.

Students develop strategies to manage and communicate information and ideas using agreed ethical protocols and consider the safety aspects of working with others. They break down design briefs to define the purpose and requirements for a given task and designed solutions, considering competing factors with annotated diagrams and a sequence of steps, using technical terms and an iterative process. Students use management roles to communicate decisions, plan and manage time to develop a designed solution and reference the given criteria to evaluate.

# Year 6

In the middle to late childhood phase of schooling, students develop a sense of self, their world expands, and they begin to see themselves as members of larger communities. Learning experiences emphasise and lead to an appreciation of both the commonality and diversity of human experience and concerns.

Design and Technologies builds on concepts previously acquired and students continue to develop an understanding of design thinking skills. Students experiment with a variety of materials to investigate the advantages of different representational forms for different purposes and situations, such as for engineering systems, food and fibre production, food preparation systems, and suitability and functionality in a product.

In Year 6, students have opportunities to learn about technologies in society and ways people in design and technologies occupations address competing considerations, including sustainable factors, as they create solutions in at least one of the following Design and Technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations, and Materials and technologies specialisations. Students consider ways competing technologies are used in the production of products and develop an understanding of designs for services and environments for community needs.

Students understand and appreciate different points of view, develop the ability to think in more abstract terms, and undertake sustained activities for longer periods. They work collaboratively and communicate decisions to develop agreed protocols, set goals, manage competing factors, resources and time to develop solutions for a given task. Students design alternative solutions, achieved through an iterative process. They develop negotiated criteria to evaluate design features, selected technologies, functionality and consideration of constraints of the designed solution to achieve a purpose.

# Year 7

In the early adolescence phase of schooling, students align with their peer group and begin to question established conventions, practices and values. Learning and teaching programs assist students to develop a broader and more comprehensive understanding of the contexts of their lives and the world in which they live.

Design and Technologies focuses on further development of understanding and design thinking skills in ways products evolve locally to achieve designed solutions. Students begin to develop an interest in particular fields of knowledge, such as engineering, food and fibre production, food systems and various materials and their use.

In Year 7, students have opportunities to learn about technologies in society and ways people in design and technologies occupations consider competing factors, social and ethical influences and existing technologies in at least one of the following Design and Technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations, and Materials and technologies specialisations. Students are provided with opportunities to investigate ways products, services and environments evolve locally with the use of various technologies.

Students are provided with opportunities to manage and create a range of designed solutions to achieve a specific purpose. They extend understanding of the vital role and ways design and technologies are incorporated in everyday life. When defining problems, students identify the key elements of the problem, the intended purpose and ways competing factors and constraints are at play. They manage and design increasingly complex processes and solutions with given technologies and techniques, considering social and ethical influences. Students collaborate and implement agreed protocols when using a range of technologies, components and equipment to produce design solutions. They plan and manage individual and team projects with autonomy. Students consider ways of managing the exchange of ideas, time and available resources, and use given contextual criteria to evaluate design processes and solutions.

# Year 7

# Year 8

In the early adolescence phase of schooling, students align with their peer group and begin to question established conventions, practices and values. Learning and teaching programs assist students to develop a broader and more comprehensive understanding of the contexts of their lives and the world in which they live.

Design and Technologies focuses on enhancing the understanding of design thinking skills to achieve solutions, including the use of a wide range of technologies, materials and systems to broaden experiences and involvement in local and regional projects.

In Year 8, students have opportunities to learn about technologies in society and ways people design for change, considering ethical and sustainable factors, available technologies and systems for designed solutions in at least one of the following Design and Technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations, and Materials and technologies specialisations. Students consider ways products, services and/or environments are designed and developed with creative and innovative application of technologies.

Students have opportunities to investigate a problem for a given need or opportunity, considering ethical and sustainable factors for the design and development of products and systems, including economic factors, use of locally or regionally sourced materials based on reliable supply chains to achieve designed solutions. They establish project management procedures that minimise risk and consider safety and efficiency, using materials, components and systems in combination with specialised technologies for the design, development and production of products, systems and/or environments. Students collaborate to plan, develop ideas and communicate, using project management processes to consider time, resources and costs, and the incorporation of student developed contextual criteria to assess design processes to achieve the desired solution.

# Year 9

In the middle adolescence phase of schooling, teaching and learning programs encourage students to develop an open and questioning view of themselves as active participants in their society and the world.

Design and Technologies enhances development of the understanding and application of design thinking skills precisely and accurately to describe problems, and the use of functional properties to develop solutions. It also focuses on engaging students with specialised learning, considering enterprising behaviours and entrepreneurial activities.

In Year 9, students have opportunities to learn about technologies in society and ways people consider social, ethical and sustainable factors, and use of specialised technologies in at least one of the following Design and Technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations, and Materials and technologies specialisations. Students explore ways products, services and environments are designed and developed, considering economic factors and alternative technologies to achieve designed solutions for a specified community need.

Students investigate and analyse problems to define a range of technologies, resources and components required to develop ideas and solutions to design alternative solutions. They consider available technologies, usability, aesthetics and application of appropriate technical terms. Students develop a strong awareness of social, ethical and sustainable considerations for the design and development of engineered products, specialised food and fibre products, food production systems or materials-based products and systems, including consumer values and management of resources to achieve designed solutions for a specified community need. They manage projects, using suitable technologies, with an agile and collaborative approach and use management processes, considering time, risk, economic and sustainable factors. Students evaluate design processes and solutions against student developed criteria, including social, ethical and sustainable considerations.

# Year 10

In the middle adolescence phase of schooling, teaching and learning programs encourage students to develop an open and questioning view of themselves as active participants in their society and the world.

Design and Technologies builds on the earlier work students have experienced in investigating patterns, processes and phenomena, and explore forms of representation and use of a range of technologies. They understand that particular ways of managing, working and thinking have developed over time for particular reasons and may still be subject to critical review, revision and change. Learning experiences will enhance working collaboratively and enable students to draw on increasingly diverse and complex sources of information to facilitate comparing, contrasting, synthesising, questioning and critiquing information to achieve desired solutions.

In Year 10, students have opportunities to learn about technologies in society and ways people consider social, ethical, sustainable and security factors to adapt and improve design and production systems in at least one of the following Design and Technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations, and Materials and technologies specialisations. Students develop an understanding of ways products, services and environments are designed and developed. They consider specialised occupations and economic factors to identify market opportunities, innovate, create and develop entrepreneurial behaviours.

Students apply design thinking skills and use divergent techniques to generate design ideas for user experiences and a range of solutions. They manage and accommodate social, ethical, sustainable and consumer and/or producer considerations in the development of entrepreneurial and marketing strategies for specialised products, systems and environments. Students evaluate enterprise opportunities and impact of existing and new solutions. They competently identify and manage processes for effective project management with consideration of time, production processes, social, ethical, economic and sustainable factors, and legal responsibilities for optimum quality and performance to achieve designed solutions.