

# Food and fibre: Design and Technologies

## Design and Technologies

The technologies contexts content descriptions in Design and Technologies provide a framework within which students can gain knowledge and understanding about technologies and design across a range of technologies contexts. These content descriptions focus on the characteristics and properties of technologies and how they can be used to create innovative designed solutions.

The technologies contexts provide a progression of learning from Foundation to Year 8 and optionally to Years 9–10 or lead to more specialised Technologies subjects in Years 9 and 10. They also reflect national priorities including workforce needs, food security and sustainable food and fibre production and health and wellbeing priorities.

Food and fibre production is one of the prescribed technologies contexts. Students will progressively develop knowledge and understanding about the managed systems that produce food and fibre through creating designed solutions. (Food and fibre production includes food specialisations from Foundation to Year 6.) The knowledge and understanding strand and processes and production strand are integrated to enhance learning.

## Food and fibre dimensions

### Design and Technologies - Years 5 and 6

#### Year 5

##### Knowledge and understanding

Content descriptions with elaborations:

Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services and environments for current and future use (ACTDEK019)

- identifying the components of a service or system that contribute to its success and assessing potential risk or failure, for example, communication in the school or communication of a message to a wide audience; a system that manages an aspect of the environment; a campaign such as Clean Up Australia Day in different communities

Investigate how and why food and fibre are produced in managed environments and prepared to enable people to grow and be healthy (ACTDEK021)

- investigating and experimenting with different tools, equipment and methods of preparing soil and the effect on soil quality and sustainability, including conserving and recycling nutrients, for example when designing a sustainable school vegetable garden or cropping area
- describing the relationship between plant types and animal breeds and their environmental suitability when selecting suitable plants or animals for an environment
- sequencing the process of converting 'on-farm' food or fibre products into a product suitable for retail sale, that is, the 'paddock to plate' supply chain, or when making yarn or fabric from fibre

##### Processes and production skills

Content descriptions with elaborations:

Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended designed solutions (ACTDEP024)

- investigating how to minimise material use and manage waste by critiquing the environmental and social impacts of materials, components, tools and equipment

Generate, develop and communicate design ideas and processes for audiences using appropriate technical terms and graphical representation techniques (ACTDEP025)

- generating a range of design ideas for products, services or environments using prior knowledge, skills and research

Select appropriate materials, components, tools, equipment and techniques to make designed solutions and apply safe procedures (ACTDEP026)

- using appropriate personal protective equipment required for the use of some tools and equipment, for example protective eyewear
- manipulating materials with appropriate tools, equipment and techniques, for example when preparing food, cultivating garden beds, constructing products

Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions (ACTDEP027)

- independently and collaboratively identifying criteria for success, processes and planning, for example using visual representations such as a flowchart
- evaluating the suitability of materials, tools and equipment for specific purposes
- evaluating products, services and environments from a range of technologies contexts with consideration of ethics and sustainability

Develop project plans that include consideration of resources when making designed solutions individually and collaboratively (ACTDEP028)

- outlining the planning and production steps needed to produce a product, service or environment using digital technologies

## Year 6

### Knowledge and understanding

Content descriptions with elaborations:

Examine how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services and environments for current and future use (ACTDEK019)

- identifying the components of a service or system that contribute to its success and assessing potential risk or failure, for example, communication in the school or communication of a message to a wide audience; a system that manages an aspect of the environment; a campaign such as Clean Up Australia Day in different communities

Investigate how and why food and fibre are produced in managed environments and prepared to enable people to grow and be healthy (ACTDEK021)

- investigating and experimenting with different tools, equipment and methods of preparing soil and the effect on soil quality and sustainability, including conserving and recycling nutrients, for example when designing a sustainable school vegetable garden or cropping area
- describing the relationship between plant types and animal breeds and their environmental suitability when selecting suitable plants or animals for an environment
- sequencing the process of converting 'on-farm' food or fibre products into a product suitable for retail sale, that is, the 'paddock to plate' supply chain, or when making yarn or fabric from fibre

### Processes and production skills

Content descriptions with elaborations:

Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended designed solutions (ACTDEP024)

- investigating how to minimise material use and manage waste by critiquing the environmental and social impacts of materials, components, tools and equipment

Generate, develop and communicate and document design ideas and processes for audiences using appropriate technical terms and graphical representation techniques (ACTDEP025)

- generating a range of design ideas for products, services or environments using prior knowledge, skills and research

Select appropriate materials, components, tools, equipment and techniques and apply safe procedures to make designed solutions (ACTDEP026)

- using appropriate personal protective equipment required for the use of some tools and equipment, for example protective eyewear
- manipulating materials with appropriate tools, equipment and techniques, for example when preparing food, cultivating garden beds, constructing products

Negotiate criteria for success that include sustainability to evaluate design ideas, processes and solutions (ACTDEP027)

- independently and collaboratively identifying criteria for success, processes and planning, for example using visual representations such as a flowchart
- evaluating the suitability of materials, tools and equipment for specific purposes
- evaluating products, services and environments from a range of technologies contexts with consideration of ethics and sustainability

Develop project plans that include consideration of resources when making designed solutions individually and collaboratively (ACTDEP028)

- outlining the planning and production steps needed to produce a product, service or environment using digital technologies