

Australian Curriculum: Design and Technologies

Years 3 and 4

BAND DESCRIPTION

Learning in Design and Technologies builds on concepts, skills and processes developed in earlier years, and teachers will revisit, strengthen and extend these as needed.

By the end of Year 4 students will have had the opportunity to create designed solutions at least once in the following technologies contexts: Engineering principles and systems; Food and fibre production and Food specialisations; and Materials and technologies specialisations. Students should have opportunities to experience designing and producing products, services and environments.

In Year 3 and 4 students develop a sense of self and ownership of their ideas and thinking about their peers and communities and as consumers. Students explore and learn to harness their creative, innovative and imaginative ideas and approaches to achieve designed products, services and environments. They do this through planning and awareness of the characteristics and properties of materials and the use of tools and equipment. They learn to reflect on their actions to refine their working and develop their decision-making skills. Students examine social and environmental sustainability implications of existing products and processes to raise awareness of their place in the world. They compare their predicted implications with real-world case studies including those from the Asia region, and recognise that designs and technologies can affect people and their environments. They become aware of the role of those working in design and technologies occupations and how they think about the way a product might change in the future.

Using a range of technologies including a variety of graphical representation techniques to communicate, students clarify and present ideas, for example by drawing annotated diagrams; modelling objects as three-dimensional images from different views by visualising rotating images and using materials. Students recognise techniques for documenting design and production ideas such as basic drawing symbols, and use simple flow diagrams.

Students become aware of the appropriate ways to manage their time and focus. With teacher guidance, they identify and list criteria for success including in relation to preferred futures and the major steps needed to complete a design task. They show an understanding of the importance of planning when designing solutions, in particular when collaborating. Students identify safety issues and learn to follow simple safety rules when producing designed solutions.

ACHIEVEMENT STANDARD

By the end of Year 4, students explain how products, services and environments are designed to best meet needs of communities and their environments. They describe contributions of people in design and technologies occupations. Students describe how the features of technologies can be used to produce designed solutions for each of the prescribed technologies contexts.

Students create designed solutions for each of the prescribed technologies contexts. They explain needs or opportunities and evaluate ideas and designed solutions against identified criteria for success, including environmental sustainability considerations. They develop and expand design ideas and communicate these using models and drawings including annotations and symbols. Students plan and sequence major steps in design and production. They identify appropriate technologies and techniques and demonstrate safe work practices when producing designed solutions.

Design

CONTENT DESCRIPTIONS

Design and Technologies knowledge and understanding

Technologies and society

Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs (ACTDEK010)

Technologies contexts

Investigate how forces and the properties of materials affect the behaviour of a product or system (ACTDEK011)

Investigate food and fibre production and food technologies used in modern and traditional societies (ACTDEK012)

Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes (ACTDEK013)

Digital Technologies processes and production skills

Creating designed solutions by:

Investigating and defining

Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to produce designed solutions (ACTDEP014)

Generating and designing

Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques (ACTDEP015)

Producing and implementing

Select and use materials, components, tools, equipment and techniques and use safe work practices to make designed solutions (ACTDEP016)

Evaluating

Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment (ACTDEP017)

Collaborating and managing

Plan a sequence of production steps when making designed solutions individually and collaboratively (ACTDEP018)