Australian Curriculum: Design and Technologies
Years 7 and 8

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 8 students will have had the opportunity to create designed solutions at least once in the following four technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations and Materials and technologies specialisations. Students should have opportunities to design and produce products, services and environments.

In Year 7 and 8 students investigate and select from a range of technologies − materials, systems, components, tools and equipment. They consider the ways characteristics and properties of technologies can be combined to design and produce sustainable designed solutions to problems for individuals and the community, considering society and ethics, and economic, environmental and social sustainability factors. Students use creativity, innovation and enterprise skills with increasing independence and collaboration.

Students respond to feedback from others and evaluate design processes used and designed solutions for preferred futures. They investigate design and technology professions and the contributions that each makes to society locally, regionally and globally through creativity, innovation and enterprise. Students evaluate the advantages and disadvantages of design ideas and technologies.

Using a range of technologies including a variety of graphical representation techniques to communicate, students generate and clarify ideas through sketching, modelling, perspective and orthogonal drawings. They use a range of symbols and technical terms in a range of contexts to produce patterns, annotated concept sketches and drawings, using scale, pictorial and aerial views to draw environments.

With greater autonomy, students identify the sequences and steps involved in design tasks. They develop plans to manage design tasks, including safe and responsible use of materials and tools, and apply management plans to successfully complete design tasks. Students establish safety procedures that minimise risk and manage a project with safety and efficiency in mind when making designed solutions.

ACHIEVEMENT STANDARD

By the end of Year 8, students explain factors that influence the design of products, services and environments to meet present and future needs. They explain the contribution of design and technology innovations and enterprise to society. Students explain how the features of technologies impact on designed solutions and influence design decisions for each of the prescribed technologies contexts.

Students create designed solutions for each of the prescribed technologies contexts based on an evaluation of needs or opportunities. They develop criteria for success, including sustainability considerations, and use these to judge the suitability of their ideas and designed solutions and processes. They create and adapt design ideas, make considered decisions and communicate to different audiences using appropriate technical terms and a range of technologies and graphical representation techniques. Students apply project management skills to document and use project plans to manage production processes. They independently and safely produce effective designed solutions for the intended purpose.

CONTENT DESCRIPTIONS

Design and Technologies knowledge and understanding

Technologies and society

Investigate the ways in which products, services and environments evolve locally, regionally and globally and how competing factors including social, ethical and sustainability considerations are prioritised in the development of technologies and designed solutions for preferred futures (ACTDEK029)

Technologies contexts

Analyse how motion, force and energy are used to manipulate and control electromechanical systems when designing simple, engineered solutions (ACTDEK031)

Analyse how food and fibre are produced when designing managed environments and how these can become more sustainable (ACTDEK032)

Analyse how characteristics and properties of food determine preparation techniques and presentation when designing solutions for healthy eating (ACTDEK033)

Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment (ACTDEK034)

Design and Technologies processes and production skills

Creating designed solutions by:

Investigating and defining

Critique needs or opportunities for designing and investigate, analyse and select from a range of materials, components, tools, equipment and processes to develop design ideas (ACTDEP035)

Generating and designing

Generate, develop, test and communicate design ideas, plans and processes for various audiences using appropriate technical terms and technologies including graphical representation techniques (ACTDEP036)

Producing and implementing

Select and justify choices of materials, components, tools, equipment and techniques to effectively and safely make designed solutions (ACTDEP037)

Evaluating

Independently develop criteria for success to evaluate design ideas, processes and solutions and their sustainability (ACTDEP038)

Collaborating and managing

Use project management processes when working individually and collaboratively to coordinate production of designed solutions (ACTDEP039)