



Design Thinking Learning Continuum K-8

DESIGN AND TECHNOLOGIES ACHIEVEMENT STANDARDS

"Achievement standards indicate the quality of learning that students should typically demonstrate by a particular point in their schooling."

TECHNOLOGIES: DESIGN & TECHNOLOGIES CURRICULUM, ACARA



Students will create designed solutions by:

Years K - 2

Typically by the end of Year 2 a student can:

Years 3 & 4

Typically by the end of Year 4 a student can:

Years 5 & 6

Typically by the end of Year 6 a student can:

Years 7 & 8

Typically by the end of Year 8 a student can:

FACT-FINDING

Explore and investigate technologies and materials

Collect and interpret data

Identify design needs and opportunities

- ▶ Collect, sort and display familiar data from a range of sources and recognise patterns in data.
- ▶ Identify needs, opportunities or problems and describe them.
- ▶ Describe the purpose of familiar products, services and environments and how they meet a range of present needs.
- ▶ List the features of technologies that influence design decisions and identify how digital systems are used.

- ▶ Collect, manipulate and interpret data from a range of sources to support decisions.
- ▶ Outline and define needs, opportunities or problems.
- ▶ Explain how products, services and environments are designed to best meet needs of communities and their environments.
- ▶ Describe how factors (social, technical and sustainability) influence the design of solutions to meet present and future needs.
- ▶ Describe contributions of people in design and technologies occupations.

- ▶ Collect and validate data from a range of sources to assist in making judgements.
- ▶ Describe a range of needs, opportunities or problems and define them in terms of functional requirements.
- ▶ Describe how design and technologies contribute to meeting present and future needs.

- ▶ Collect, authenticate and interpret data from a range of sources to assist in making informed judgements.
- ▶ Explain a range of needs, opportunities or problems and define them in terms of functional requirements and constraints.
- ▶ Explain the contribution of design and technology innovations and enterprise to society.
- ▶ Explain factors that influence the design of products, services and environments to meet present and future needs.
- ▶ Explain how social, ethical, technical and sustainability considerations influence the design of innovative and enterprising solutions to meet a range of present and future needs.

GENERATING IDEAS

Imagine, communicate and record design ideas

- ▶ Create ideas on the basis of personal preferences.
- ▶ Communicate design ideas for products, services and environments using modelling and simple drawings.
- ▶ Communicate ideas and information face-to-face and online.

- ▶ Generate design ideas for an audience using technical terms and graphical and non-graphical representation techniques.
- ▶ Develop and expand design ideas and communicate these using models and drawings including annotations and symbols.

- ▶ Create designed solutions suitable for identified needs or opportunities.
- ▶ Generate design ideas for specified audiences using graphical and non-graphical representation techniques.
- ▶ Design digital solutions that meet intended purposes including user interfaces and a visual program.

- ▶ Create and adapt designed solutions based on an evaluation of needs or opportunities.
- ▶ Generate and document (in digital and non-digital form) design ideas for different audiences using appropriate technical terms, and graphical representation techniques including algorithms.

JUDGING IDEAS

Analyse and evaluate design ideas

- ▶ Evaluate their ideas on the basis of personal preferences and care for the environment.

- ▶ Evaluate ideas against identified criteria for success, including environmental sustainability considerations.
- ▶ Explain how their products are designed to best meet needs of communities and their environments.
- ▶ Describe how the features of technologies can be used to produce designed solutions.

- ▶ Suggest criteria for success, including sustainability considerations, and use these to evaluate their ideas.
- ▶ Combine design ideas and communicate these to audiences using graphical representation techniques and technical terms.
- ▶ Describe competing considerations in the design of products, services and environments, taking into account sustainability.

- ▶ Develop criteria for success, including sustainability considerations, and use these to judge the suitability of their ideas.
- ▶ Make considered decisions and communicate to different audiences using appropriate technical terms and a range of technologies and graphical representation techniques.
- ▶ Explain how the features of technologies impact on designed solutions and influence design decisions.

PLANNING

Design courses of action

Document project plans

Monitor projects

- ▶ Design solutions to simple problems using a sequence of steps and decisions.
- ▶ Record design ideas using techniques including labelled drawings, lists and sequenced instructions.
- ▶ Select the technologies needed to realise designed solutions.

- ▶ Plan and sequence major steps in design and production.
- ▶ Record design ideas for an audience using technical terms and graphical and non-graphical representation techniques.
- ▶ Select materials, components, tools and equipment and the techniques needed to produce designed solutions.
- ▶ Use agreed protocols when collaborating, and creating and communicating ideas, information and solutions face-to-face and online.

- ▶ Record and document project plans including production processes and resources.
- ▶ Record design ideas using appropriate technical terms, and graphical and non-graphical representation techniques.
- ▶ Select appropriate technologies and techniques to produce designed solutions.
- ▶ Use ethical, social and technical protocols when collaborating, and creating and communicating ideas, information and solutions face-to-face and online.

- ▶ Plan processes and resources to produce designed solutions for each of the prescribed technologies contexts.
- ▶ Apply project management skills to document and use project plans to manage production processes.
- ▶ Independently and safely plan and design a range of digital solutions that meet intended purposes including user interfaces and the use of a programming language.
- ▶ Use appropriate protocols when collaborating, and creating and communicating ideas, information and solutions face-to-face and online.

PRODUCING

Test and implement designed solutions

- ▶ With guidance produce designed solutions.
- ▶ Follow sequenced steps and demonstrate safe use of materials, tools and equipment when producing designed solutions.
- ▶ Develop design ideas through modelling.

- ▶ Use identified criteria for success, including sustainability considerations, to judge the suitability of their solutions
- ▶ Identify appropriate technologies and techniques and demonstrate safe work practices when producing designed solutions.

- ▶ Use appropriate technologies and techniques correctly and safely to produce designed solutions.
- ▶ Test and modify digital solutions that meet intended purposes.
- ▶ Explain how the features of technologies impact on designed solutions.

- ▶ Independently and safely produce effective designed solutions for the intended purpose.
- ▶ Independently and safely test and modify a range of digital solutions that meet intended purposes including user interfaces and the use of a programming language.
- ▶ Effectively manage processes and resources to produce designed solutions for each of the prescribed technologies contexts.
- ▶ Apply knowledge gained from one context to another unrelated context and identify new meaning.

REFLECTING

Reflect on design processes

Evaluate designed solutions

- ▶ Evaluate their solutions on the basis of provided criteria.
- ▶ Evaluate the success of design processes and solutions including their care for environment.

- ▶ Use identified criteria for success, including sustainability considerations, to judge the suitability of their solutions and processes.
- ▶ Evaluate designed solutions against identified criteria for success, including environmental sustainability considerations.

- ▶ Suggest criteria for success, including sustainability considerations, and use these to evaluate their designed solutions.
- ▶ Negotiate criteria for success, including sustainability considerations, and use these to judge the suitability of their solutions and processes.

- ▶ Develop criteria for success, including sustainability considerations, and use these to judge the suitability of their designed solutions and processes.