

# Technologies – Design & Technology- Digital Technologies

## Goal 1:

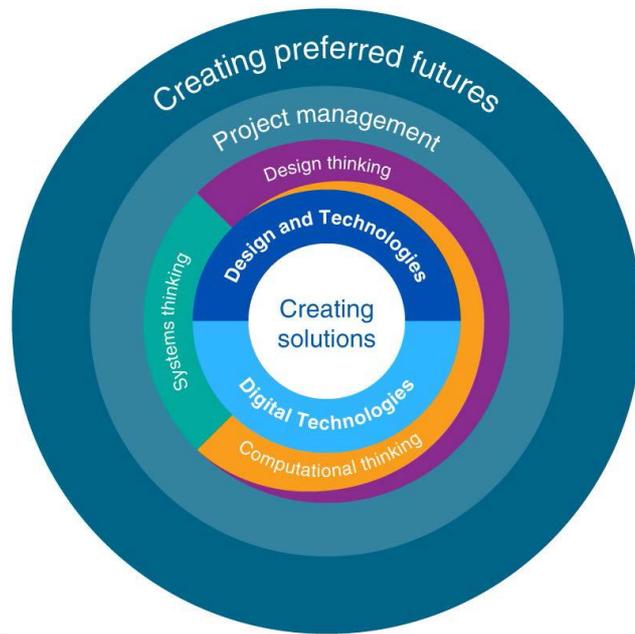
Australian schooling promotes equity and excellence

## Goal 2:

### All young Australians become:

- successful learners
- confident and creative individuals
- active and informed citizens

*Technologies enrich and impact on the lives of people and societies globally. Australia needs enterprising individuals who can make discerning decisions about the development and use of technologies.*



Design and Technologies	
<b>Design and Technologies knowledge and understanding</b>	<b>Design and Technologies processes and production skills</b>
<p><i>Technologies and society</i></p> <ul style="list-style-type: none"> <li>the use, development and impact of technologies in people's lives</li> </ul> <p><i>Technologies contexts</i></p> <ul style="list-style-type: none"> <li>technologies and design concepts across a range of technologies contexts</li> </ul>	<p><i>Creating designed solutions by:</i></p> <ul style="list-style-type: none"> <li>investigating</li> <li>generating</li> <li>producing</li> <li>evaluating</li> <li>collaborating and managing</li> </ul>



Figure 2: Relationship between the Design and Technologies strands

Digital Technologies	
<b>Digital Technologies knowledge and understanding</b>	<b>Digital Technologies processes and production skills</b>
<p><i>Digital systems</i></p> <ul style="list-style-type: none"> <li>the components of digital systems: hardware, software and networks and their use</li> </ul> <p><i>Representation of data</i></p> <ul style="list-style-type: none"> <li>how data are represented and structured symbolically</li> </ul>	<p><i>Collecting, managing and analysing data</i></p> <p><i>Creating digital solutions by:</i></p> <ul style="list-style-type: none"> <li>defining</li> <li>designing</li> <li>implementing</li> <li>evaluating</li> <li>collaborating and managing</li> </ul>



Figure 4: Relationship between the Digital Technologies strands

## Overarching ideas

### Creating preferred futures

*A focus on preferred futures involves systems thinking and provides a methodology for identifying and moving towards socially responsible and sustainable patterns of living.*

### Managing projects

*Technologies projects involve ethical, health and safety considerations, commercial realities, sustainability, project management, and consumer and client needs, including consideration of personal and cultural beliefs and values.*

### Producing designed solutions

*Design and Technologies has a strong focus on design thinking, the application of the design process and producing (making) solutions to design products, services and environments.*

### Thinking in Technologies

- o **Systems thinking** is a holistic approach to the identification and solving of problems
- o **Design thinking** is a specific application of critical and creative thinking.
- o **Computational thinking** is a problem-solving method that involves various techniques and strategies
- o

### The Design Brief

- o **Design briefs** – provide a context for learning, and a framework allowing students to make considered “design” decisions. They will frequently follow explicit teaching of skills and knowledge. There are three key components of a design brief:
- o **Context: Explains the context and purpose of the activity**
- o **Task: Provides clear instruction about the task or problem**
- o **Restrictions/Requirements/Constraints: Focuses learning activities, specifies directions or places limitations**
- o **Process & production skills**
  - Investigating
  - Generating
  - Producing
  - Evaluating
  - Collaborating & Managing

### The Contexts

- Technologies in Society
- Engineering principles & Systems
- Food & Fibre production
- Food Specializations
- Materials & Technologies specializations

### Implications

- *One Curriculum Area-Technologies*
- **2 subjects** to be taught R-8
- The links with **GC- Literacy** and numeracy
- **Cross curricula links** –
- **Assessment techniques** and link to **achievement standards** -Identifying the learning outcomes being targeted
- **Assessment focus** on gaining PK- diagnostic , formative and summative assessments

**Teaching strategies;**Fitting design focus; Materials based methodology;Accountability ;Project management;Preferred futures;ICT ;Capabilities ;Quality

**Focus on Thinking** -Higher Order thinking