

**Levels 7 and 8**
**Levels 9 and 10**

<b>Technologies and Society</b>	
Examine and prioritise competing factors including social, ethical, economic and sustainability considerations in the development of technologies and designed solutions to meet community needs for preferred futures	Critically analyse factors, including social, ethical and sustainability considerations, that impact on designed solutions for global preferred futures and the complex design and production processes involved
Investigate the ways in which designed solutions evolve locally, nationally, regionally and globally through the creativity, innovation and enterprise of individuals and groups	Explain how designed solutions evolve with consideration of preferred futures and the impact of emerging technologies on design decisions
<b>Technologies Contexts</b>	
<b>Engineering principles and systems</b>	
Analyse how motion, force and energy are used to manipulate and control electromechanical systems when creating simple, engineered solutions	Investigate and make judgements on how the characteristics and properties of materials are combined with force, motion and energy to create engineered solutions
<b>Food and fibre production</b>	
Analyse how food and fibre are produced when creating managed environments and how these can become more sustainable	Investigate and make judgements on the ethical and sustainable production and marketing of food and fibre
<b>Food specialisations</b>	
Analyse how characteristics and properties of food determine preparation techniques and presentation when creating solutions for healthy eating	Investigate and make judgements on how the principles of food safety, preservation, preparation, presentation and sensory perceptions influence the creation of food solutions for healthy eating
<b>Materials and technologies specialisations</b>	
Analyse ways to create designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment	Investigate and make judgements on how the characteristics and properties of materials, systems, components, tools and equipment can be combined to create designed solutions
<b>Creating Designed Solutions</b>	
<b>Investigating</b>	
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	Critique needs or opportunities to develop design briefs and investigate and select an increasingly sophisticated range of materials, systems, components, tools and equipment to develop design ideas
<b>Generating</b>	
Generate, develop and test design ideas, plans and processes using appropriate technical terms and technologies including graphical representation techniques	Apply design thinking, creativity, innovation and enterprise skills to develop, modify and communicate design ideas of increasing sophistication
<b>Producing</b>	
Effectively and safely use a broad range of materials, components, tools, equipment and techniques to produce designed solutions	Work flexibly to safely test, select, justify and use appropriate technologies and processes to make designed solutions
<b>Evaluating</b>	
Independently develop criteria for success to evaluate design ideas, processes and solutions and their sustainability	Evaluate design ideas, processes and solutions against comprehensive criteria for success recognising the need for sustainability
<b>Planning and managing</b>	
Use project management processes to coordinate production of designed solutions	Develop project plans to plan and manage projects individually and collaboratively taking into consideration time, cost, risk and production processes
<p>By the end of Level 8 students explain factors that influence the design of solutions 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.</p> <p>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.</p>	<p>By the end of Level 10 students explain how people working in design and technologies occupations consider factors that impact on design decisions and the technologies used to create designed solutions. They identify the changes necessary to designed solutions to realise preferred futures they have described. When creating designed solutions for identified needs or opportunities students evaluate the features of technologies and their appropriateness for purpose for one or more of the technologies contexts.</p> <p>Students create designed solutions for each of the prescribed technologies contexts based on a critical evaluation of needs or opportunities. They establish detailed criteria for success, including sustainability considerations, and use these to evaluate their ideas and designed solutions and processes. They generate and connect design ideas and processes of increasing complexity and justify decisions. Students communicate and document projects, including marketing for a range of audiences. They independently and collaboratively apply sequenced production and management plans when producing designed solutions, making adjustments to plans when necessary. They select and use appropriate technologies skilfully and safely to produce quality designed solutions suitable for the intended purpose.</p>