

DESIGN IN TECHNOLOGY: KNOWLEDGE OF DESIGN

Knowledge of design focuses on understanding the way informed, creative and critical development of new ideas is achieved and how these are realised into feasible outcomes.

Initially students learn basic concepts relating to ‘What is design?’ and how or why something may be described as a ‘good’ or ‘bad’ design. Students progress to advanced concepts relating to sustainable design and innovation as currently understood, and to complex concepts relating to future focused themes, principles of good design, and making judgements of a design’s quality in the context of its use.

	LEVEL 6	LEVEL 7	LEVEL 8
LO	<i>Demonstrate understanding of basic concepts in design</i>	<i>Demonstrate understanding of advanced concepts in design</i>	<i>Demonstrate understanding of complex concepts in design</i>
TEACHER GUIDANCE	<p>To support students to develop understandings about the basic concepts in design at level 6, teachers could:</p> <ul style="list-style-type: none"> • Guide students to recognise that ‘design’ can be understood both as a verb and a noun. • Provide opportunity for students to explore/debate different definitions of ‘design’ in order to understand what design is. • Provide opportunity for students to explore how designing pulls together subjective and objective considerations to take human ideas into ‘made’ outcomes. Subjective considerations are those linked to aesthetics (where aesthetics is understood as it relates to all human senses/sensibilities). Objective considerations are those that can be established in a quantifiable sense. • Provide opportunity for students to explore differing opinions about the value of particular designs and how these arise due to differences in how subjective and objective considerations are prioritised. • Guide students to understand that designs can be evaluated as ‘good’ or ‘bad’ in terms of how they bring together form, function, cost and contextual understandings. 	<p>To support students to develop understandings about the advanced concepts in design at level 7, teachers could:</p> <ul style="list-style-type: none"> • Provide opportunity for students to understand what ‘designing for lifecycle’ means and what additional considerations are required when designing for lifecycle (eg, those related to accessing materials/ongoing maintenance and disposal). • Provide opportunity for students to explore implications of additional considerations on how any design can be judged as ‘good’ or ‘bad’. • Provide opportunity for students to debate the nature of innovative designing. • Guide students to determine the types of things that can inspire innovative ideas through analysing historical and contemporary innovations to identify inspirational drivers, for example previous designs (within a similar and dissimilar range of outcomes), art, nature, literature, attitudes, needs/desires/constraints/ opportunities. • Guide students to determine aspects that support innovative designing, for example, acceptance of risk taking, collaboration, freedom to explore diverse design ideas, appropriate resourcing, opportunity for free and frank debate, application of ‘feasibility filters’ – timing and ‘depth’. 	<p>To support students to develop understandings about the complex concepts in design at level 8, teachers could:</p> <ul style="list-style-type: none"> • Provide opportunity for students to explore innovative designing for sustainable futures. • Guide students to examine a range of models of design as recognised by design professionals and organisations. • Provide opportunity for students to develop a contemporary understanding of the ‘principles of good design’. • Provide students with an opportunity to debate possible and probable future scenarios, the reliability of projections based on uncertainty, and the role of design principles in responding to uncertainty and the mitigation of risk. • Provide opportunity for students to apply the principles of good design to make informed judgements about the quality of a design. • Provide opportunity for students to debate how the principles of good design may have impacted on the design decision-making undertaken during the development of a variety of technological outcomes.
INDICATORS	<p>Students can:</p> <ul style="list-style-type: none"> • explain the elements that underpin design within a specified context • explain considerations used to determine the quality of a design within a specified context • discuss the quality of a design in relation to design elements and considerations of the specific context in which the design is situated. 	<p>Students can:</p> <ul style="list-style-type: none"> • explain the relationship between lifecycle design, innovation and sustainability • explain how lifecycle analysis is undertaken and how this determines the focus for design intervention • discuss the competing priorities and compromises made as a result of lifecycle analysis when developing a sustainable technology. 	<p>Students can:</p> <ul style="list-style-type: none"> • evaluate the quality of the design of a technological outcome using contemporary design judgement criteria • discuss the impact of contemporary judgement criteria on design decision making • justify the evaluation of a technological outcome’s design.
AS	<p>AS91053 Generic Technology 1.10 <i>Demonstrate understanding of design elements</i></p>	<p>AS91363 Generic Technology 2.10 <i>Demonstrate understanding of sustainability in design</i></p>	<p>AS91617 Generic Technology 3.10 <i>Undertake a critique of a technological outcome’s design</i></p>
	Level 1 Generic Technology standards & assessment resources	Level 2 Generic Technology standards & assessment resources	Level 3 Technology achievement standards & assessment resources DRAFT