

## Design and Technologies Foundation to Year 10 scope and sequence

Strand	Foundation to Year 2	Years 3 and 4	Years 5 and 6	Years 7 and 8	Years 9 and 10 (Elective subject)	
<b>Design and Technologies knowledge and understanding</b>	<b>Technologies and society</b>	Identify how people design and produce familiar products, services and environments and consider sustainability to meet personal and local community needs (ACTDEK001)	Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs (ACTDEK010)	Investigate how people in design and technologies occupations address competing considerations, including sustainability in the design of products, services, and environments and for current and future use (ACTDEK019)	Examine and prioritise competing factors including social, ethical and sustainability considerations in the development of technologies and designed solutions to meet community needs for preferred futures (ACTDEK029)  Investigate the ways in which products, services and environments evolve locally, regionally and globally through the creativity, innovation and enterprise of individuals and groups (ACTDEK030)	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 (ACTDEK040)  Explain how products, services and environments evolve with consideration of preferred futures and the impact of emerging technologies on design decisions (ACTDEK041)
	<b>Technologies contexts</b>	<i>By the end of Year 2 students will have had the opportunity to create designed solutions addressing the three technologies contexts below.</i>	<i>By the end of Year 4 students will have had the opportunity to create designed solutions addressing the three technologies contexts below.</i>	<i>By the end of Year 6 students will have had the opportunity to create designed solutions addressing the four technologies contexts below.</i>	<i>By the end of Year 8 students will have had the opportunity to design and produce for one or more of the technologies contexts below.</i>	<i>By the end of Year 10 students will have had the opportunity to design and produce contexts below.</i>
	<b>Engineering principles and systems</b>	Explore how technologies use forces to create movement in products (ACTDEK002)	Investigate how forces and the properties of materials affect the behaviour of a product or system (ACTDEK011)	Investigate how forces or electrical energy can control movement, sound or light in a designed product or system (ACTDEK020)	Analyse how motion, force and energy are used to manipulate and control electromechanical systems when designing simple, engineered solutions (ACTDEK031)	Investigate and make judgments on how the characteristics and properties of materials are combined with force, motion and energy to create engineered solutions (ACTDEK043)
	<b>Food and fibre production</b>	Explore how plants and animals are grown for food, clothing and shelter and how food is selected and prepared for healthy eating (ACTDEK003)	Investigate food and fibre production and food technologies used in modern and traditional societies (ACTDEK012)	Investigate how and why food and fibre are produced in managed environments (ACTDEK021)	Analyse how food and fibre are produced when designing managed environments and how these can become more sustainable (ACTDEK032)	Investigate and make judgments on the ethical and sustainable production and marketing of food and fibre (ACTDEK044)
<b>Food specialisations</b>			Investigate the role of food preparation in maintaining good health and the importance of food safety and hygiene (ACTDEK022)	Analyse how characteristics and properties of food determine preparation techniques and presentation when designing solutions for healthy eating (ACTDEK033)	Investigate and make judgments on how the principles of food safety, preservation, preparation, presentation and sensory perceptions influence the creation of food solutions for healthy eating (ACTDEK045)	

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<i>Materials and technologies specialisations</i>	Explore the characteristics and properties of materials and components that are used to produce designed solutions (ACTDEK004)	Investigate the suitability of materials, systems, components, tools and equipment for a range of purposes (ACTDEK013)	Investigate characteristics and properties of a range of materials, systems, components, tools and equipment and evaluate the impact of their use (ACTDEK023)	Analyse ways to produce designed solutions through selecting and combining characteristics and properties of materials, systems, components, tools and equipment (ACTDEK034)	Investigate and make judgments on how the characteristics and properties of materials, systems, components, tools and equipment can be combined to create designed solutions (ACTDEK046) Investigate and make judgments, within a range of technologies specialisations, on how technologies can be combined to create designed solutions (ACTDEK047)
<b>Design and Technologies Processes and Production Skills</b>					
<b>Creating designed solutions by:</b>					
<i>Investigating</i>	Explore needs or opportunities for designing, and the technologies needed to realise designed solutions (ACTDEP005)	Critique needs or opportunities for designing and explore and test a variety of materials, components, tools and equipment and the techniques needed to produce designed solutions (ACTDEP014)	Critique needs or opportunities for designing, and investigate materials, components, tools, equipment and processes to achieve intended designed solutions (ACTDEP024)	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)	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 (ACTDEP048)
<i>Generating</i>	Visualise, generate, develop and communicate design ideas through describing, drawing and modelling (ACTDEP006)	Generate, develop, and communicate design ideas and decisions using appropriate technical terms and graphical representation techniques (ACTDEP015)	Generate, develop, communicate and document design ideas and processes for audiences using appropriate technical terms and graphical representation techniques (ACTDEP025)	Generate, develop, test and communicate design ideas, plans and processes for various audiences using appropriate technical terms and technologies including graphical representation techniques (ACTDEP036)	Apply design thinking, creativity, innovation and enterprise skills to develop, modify and communicate design ideas of increasing sophistication (ACTDEP049)
<i>Producing</i>	Use materials, components, tools, equipment and techniques to safely make designed solutions (ACTDEP007)	Select and use materials, components, tools and equipment using safe work practices to make designed solutions (ACTDEP016)	Apply safe procedures when using a variety of materials, components, tools, equipment and techniques to make designed solutions (ACTDEP026)	Effectively and safely use a broad range of materials, components, tools, equipment and techniques to make designed solutions (ACTDEP037)	Work flexibly to safely test, select, justify and use appropriate technologies and processes to make designed solutions (ACTDEP050)
<i>Evaluating</i>	Use personal preferences to evaluate the success of design ideas, processes and solutions including their care for environment (ACTDEP008)	Evaluate design ideas, processes and solutions based on criteria for success developed with guidance and including care for the environment (ACTDEP017)	Negotiate criteria for success that include consideration of sustainability to evaluate design ideas, processes and solutions (ACTDEP027)	Independently develop criteria for success to assess design ideas, processes and solutions and their sustainability (ACTDEP038)	Evaluate design ideas, processes and solutions against comprehensive criteria for success recognising the need for sustainability (ACTDEP051)
<i>Collaborating and managing</i>	Sequence steps for making designed solutions and working collaboratively (ACTDEP009)	Plan a sequence of production steps when making designed solutions individually and collaboratively (ACTDEP018)	Develop project plans that include consideration of resources when making designed solutions individually and collaboratively (ACTDEP028)	Use project management processes when working individually and collaboratively to coordinate production of designed solutions (ACTDEP039)	Develop project plans using digital technologies to plan and manage projects individually and collaboratively taking into consideration time, cost, risk and production processes (ACTDEP052)