




# Year 7&8 band plan — Australian Curriculum: Design & Technology Food

Implementation year: 2017      School name: Ignatius Park College

Identify curriculum	Year level description	7&8
	Technologies Learning Area	<p>The Technologies curriculum provides students with opportunities to consider how solutions that are created now will be used in the future. Students will identify the possible benefits and risks of creating solutions. They will use critical and creative thinking to weigh up possible short-term and long-term impacts.</p> <p>As students' progress through the Technologies curriculum, they will begin to identify possible and probable futures, and their preferences for the future. They develop solutions to meet needs considering impacts on liveability, economic prosperity and environmental sustainability. Students will learn to recognise that views about the priority of the benefits and risks will vary and that preferred futures are contested.</p> <p>The Australian Curriculum: Technologies describes two distinct but related subjects:</p> <p>Design and Technologies, in which students use design thinking and technologies to generate and produce designed solutions for authentic needs and opportunities</p> <p>Digital Technologies, in which students use computational thinking and information systems to define, design and implement digital solutions.</p>
	Course Organisation	<p>The Australian Curriculum: Technologies will ensure that all students benefit from learning about and working with traditional, contemporary and emerging technologies that shape the world in which we live. This learning area encourages students to apply their knowledge and practical skills and processes when using technologies and other resources to create innovative solutions, independently and collaboratively, that meet current and future needs.</p> <p>The practical nature of the Technologies learning area engages students in critical and creative thinking, including understanding interrelationships in systems when solving complex problems. A systematic approach to experimentation, problem-solving, prototyping and evaluation instils in students the value of planning and reviewing processes to realise ideas. The Australian Curriculum: Design and Technologies actively engages students in creating quality designed solutions for identified needs and opportunities across a range of technologies contexts. Students consider the economic, environmental and social impacts of technological change and how the choice and use of technologies contributes to a sustainable future.</p> <p>By the end of each band, students will have had the opportunity to create different types of designed solutions that address the technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations and Materials and technologies specialisations. For breadth of study, the curriculum has been developed to enable students to complete at least one product, one service and one environment within each band.</p> <p>In the Australian Curriculum: Design and Technologies the two strands — Knowledge and Understanding, and Processes and Production Skills — are interrelated and inform and support each other. Students work independently and collaboratively on projects as they critique, explore and investigate needs and opportunities; generate, develop and evaluate ideas; and plan, produce and evaluate designed solutions. They use criteria for success that are predetermined, negotiated with the class or developed by students.</p> <p>The Design and Technologies Processes and Production Skills strand is based on the major aspects of design thinking, design processes and production processes. The content descriptions in this strand reflect a design process and would typically be addressed through a design brief. The Design and Technologies Processes and Production Skills strand focuses on creating designed solutions by:</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> <p>The band plan for Design and Technologies is organised to:</p> <ul style="list-style-type: none"> <li>• provide flexibility when making decisions about how the subject will be implemented, based on the local context and needs of students in schools</li> <li>• align with the Australia Curriculum: Design and Technologies, which is organised in two-year bands</li> <li>• provide a course structure and content that includes a sequence of teaching and learning and identified opportunities for assessment and feedback, developed using the Australian Curriculum content descriptions and achievement standards.</li> <li>• When developing teaching and learning programs, teachers should consider opportunities to:</li> <li>• combine aspects of the strands within a subject in different ways and to integrate content from each strand as it may be possible to address multiple technologies contexts in a unit</li> <li>• provide ongoing practice and consolidation of previously introduced knowledge and skills; while content descriptions do not repeat key skills across the bands, many aspects of the Technologies curriculum are recursive</li> </ul>

	<p>provide students with learning experiences that meet their needs and interests and are relevant, rigorous and meaningful and allow for different rates of development, in particular for younger students and for those who need extra support</p> <p>apply design and systems thinking and design processes to investigate ideas, generate and refine ideas, plan, produce and evaluate designed solutions use a design brief when developing a unit of work; a design brief is a concise statement clarifying the project task and defining the need or opportunity to be resolved after some analysis, investigation and research; it usually identifies the users, criteria for success, constraints, available resources, timeframe for the project and may include possible consequences and impacts.</p> <p>The band plan course organisation allows schools to implement the Australian Curriculum: Design and Technologies:</p> <ul style="list-style-type: none"> <li>• in conjunction with other learning areas/subjects</li> <li>• in a term</li> <li>• in a semester</li> <li>• in only one year of a band.</li> </ul> <p><b>Safety</b></p> <p>All practical work must be organised with student safety in mind. Identifying and managing risk in Technologies learning addresses the safe use of technologies, as well as risks that can impact on project timelines. It covers all necessary aspects of health, safety and injury prevention and, in any technologies context, the use of potentially dangerous materials, tools and equipment. It includes ergonomics, safety including cyber safety, data security, and ethical and legal considerations when communicating and collaborating online. The current safety requirements are clearly explained at the Queensland government, Department of Education, Training and Employment website: <a href="http://education.qld.gov.au/health/safety/index.html">http://education.qld.gov.au/health/safety/index.html</a>. School must ensure that their practices meet current guidelines.</p> <p><b>Animal ethics</b></p> <p>Any teaching activities that involve caring, using, or interacting with animals must comply with the Australian code of practice for the care and use of animals for scientific purposes in addition to relevant state or territory guidelines. <i>The Animal Care and Protection Act 2001</i> and the accompanying Animal Care and Protection Regulation 2002 govern the treatment and use of all animals in Queensland (see <a href="http://www.legislation.qld.gov.au">www.legislation.qld.gov.au</a>). The Department of Agriculture, Fisheries and Forestry Queensland (DAFF), through Biosecurity Queensland, is responsible for enforcement of the legislation.</p>
<b>Phase Curriculum focus</b>	<p><b>Curriculum focus: Years 7 to 10</b></p> <p>As students move into adolescence, they undergo a range of important physical, cognitive, emotional and social changes. Students often begin to question established community conventions, practices and values. Their interests extend well beyond their own communities and they develop their concerns about wider social, ethical and sustainability issues. Students in this age range increasingly look for and value learning they perceive as relevant, consistent with personal goals, and leading to important outcomes. Increasingly they analyse and work with more abstract concepts, consider the implications of individual and community actions and are keen to examine evidence prior to developing ideas.</p> <p>In the Technologies learning area, students use technologies knowledge and understanding; technologies processes and production skills; and systems, design, and/or computational thinking to solve and produce creative solutions to problems, needs or opportunities. They communicate and record their ideas using a range of media and technologies. These specialised problem-solving activities will be sophisticated, acknowledge the complexities of contemporary life and may make connections to related specialised occupations and further study.</p> <p>Students develop a global perspective; they have opportunities to understand the complex interdependencies involved in the development of technologies and between the developer and user in their solutions, and how these can contribute to preferred futures. Students develop an understanding of the interdependence of technologies development, values, beliefs and environment (systems thinking). Through undertaking technologies processes students develop systems, design and computational thinking; and organisational and project management skills.</p>
<b>Band Description</b>	<p>Learning in Design and Technologies builds on concepts, skills and processes developed in earlier years, and teachers will revisit, strengthen and extend these as needed.</p> <p>By the end of Year 8 students will have had the opportunity to create designed solutions at least once in the following four technologies contexts: Engineering principles and systems, Food and fibre production, Food specialisations and Materials and technologies specialisations. Students should have opportunities to design and produce products, services and environments.</p> <p>In Year 7 and 8 students investigate and select from a range of technologies – materials, systems, components, tools and equipment. They consider the ways characteristics and properties of technologies can be combined to design and produce sustainable designed solutions to problems for individuals and the community, considering society and ethics, and economic, environmental and social sustainability factors. Students use creativity, innovation and enterprise skills with increasing independence and collaboration.</p> <p>Students respond to feedback from others and evaluate design processes used and designed solutions for preferred futures. They investigate design and technology professions and the contributions that each makes to society locally, regionally and globally through creativity, innovation and enterprise. Students evaluate the advantages and disadvantages of design ideas and technologies.</p> <p>Using a range of technologies including a variety of graphical representation techniques to communicate, students generate and clarify ideas through sketching, modelling, perspective and orthogonal drawings. They use a range of symbols and technical terms in a range of contexts to produce patterns, annotated concept sketches and drawings, using scale, pictorial and aerial views to draw environments.</p> <p>With greater autonomy, students identify the sequences and steps involved in design tasks. They develop plans to manage design tasks, including safe and responsible use of materials and tools, and apply management plans to successfully complete design tasks. Students establish safety procedures that minimise risk and manage a project with safety and efficiency in mind when making designed solutions.</p>

	<b>Achievement standard</b>	<p>By the end of Year 8, students <b>explain</b> factors that influence the <b>design</b> of products, services and environments to meet present and future needs. They <b>explain</b> the contribution of <b>design</b> and technology innovations and enterprise to society. Students <b>explain</b> how the features of technologies impact on designed solutions and influence <b>design</b> 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 <b>develop</b> 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 <b>design</b> ideas, make considered decisions and communicate to different audiences using appropriate technical terms and a range of technologies and graphical representation techniques. Students <b>apply</b> 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>		
Teaching and learning	<b>Term overview</b>	<b>10 Week UNIT – Food 101</b>		
		<p>Analyse how characteristics and properties of food determine preparation techniques and presentation when designing solutions for healthy eating (ACTDEK033)</p> <ul style="list-style-type: none"> <li>planning and making quality, safe and nutritious food items, using a range of food preparation tools, equipment and techniques</li> <li>examining the relationship between food preparation techniques and the impact on nutrient value, for example steaming vegetables</li> <li>investigating how a recipe can be modified to enhance health benefits, and justifying decisions, for example by replacing full cream milk with skim milk</li> <li>analysing food preparation techniques used in different cultures including those from the Asia region and the impact of these on nutrient retention, aesthetics, taste and palatability, for example stir-frying</li> </ul> <p>explaining how food preparation techniques impact on the sensory properties (flavour, appearance, texture, aroma) of food, for example the browning of cut fruit, the absorption of water when cooking rice</p>		
	<b>General capabilities and cross-curriculum priorities</b>			
	<b>Key to general capabilities and cross-curriculum priorities</b>	 <p>Numeracy      Ethical Understanding      Personal and Social Capability      Literacy      Intercultural Understanding      Information &amp; Communication Technology Capability      Critical and Creative Thinking      Sustainability</p>  <p>Australia's engagement with Asia</p>		
	<b>Content descriptions</b>	<b>Knowledge and Understanding</b>	<b>Yr 7</b>	<b>Yr 8</b>
		<ul style="list-style-type: none"> <li>Investigate the ways in which products, services and environments evolve locally, regionally and globally and how competing factors including social, ethical and sustainability considerations are prioritised in the development of <b>technologies</b> and designed solutions for <b>preferred futures</b> (ACTDEK029)</li> </ul>		
		<ul style="list-style-type: none"> <li>Analyse how motion, force and energy are used to manipulate and control electromechanical systems when <b>designing</b> simple, engineered solutions (ACTDEK031)</li> </ul>		
		<ul style="list-style-type: none"> <li>Analyse how food and <b>fibre</b> are produced when <b>designing</b> managed environments and how these can become more sustainable (ACTDEK032)</li> </ul>		
		<ul style="list-style-type: none"> <li>Analyse how <b>characteristics</b> and properties of food determine preparation techniques and presentation when <b>designing</b> solutions for healthy eating (ACTDEK033)</li> </ul>	✓	✓
		<ul style="list-style-type: none"> <li>Analyse ways to produce designed solutions through selecting and combining <b>characteristics</b> and properties of materials, systems, components, tools and equipment (ACTDEK034)</li> </ul>		

		<b>Processes and Production Skills</b>		<b>Yr 7</b>	<b>Yr 8</b>
		<ul style="list-style-type: none"> <li>Critique needs or opportunities for <b>designing</b> and investigate, analyse and select from a range of materials, <b>components</b>, tools, <b>equipment</b> and processes to develop design ideas (ACTDEP035)</li> </ul>			
		<ul style="list-style-type: none"> <li>Generate, develop, test and communicate design ideas, plans and processes for various audiences using appropriate technical terms and <b>technologies</b> including graphical representation techniques (ACTDEP036)</li> </ul>			
		<ul style="list-style-type: none"> <li>Select and justify choices of materials, <b>components</b>, tools, <b>equipment</b> and techniques to effectively and safely make designed solutions(ACTDEP037)</li> </ul>			
		<ul style="list-style-type: none"> <li>independently develop <b>criteria for success</b> to evaluate design ideas, processes and solutions and their sustainability (ACTDEP038)</li> </ul>		✓	✓
		<ul style="list-style-type: none"> <li>Use <b>project management</b> processes when working individually and collaboratively to coordinate production of designed solutions(ACTDEP039)</li> </ul>		✓	✓
<b>Develop assessment</b>	<b>Assessment</b>	<b>Yr 7</b>		<b>Yr 8</b>	
		<b>Week</b>	<b>Assessment instrument</b>	<b>Week</b>	<b>Assessment instrument</b>
		8		8	
<b>Make judgments and use feedback</b>	<b>Moderation</b>	<ol style="list-style-type: none"> <li>Cluster meetings to discuss expectations, plan unit of work and formulate assessment tasks.</li> <li>Monitoring student achievement levels through cross marking and professional dialogue.</li> <li>Reviewing student achievement through analysis and tracking of results and feedback.</li> <li>Reflection on the progress of the assessment conducted in the unit and consideration of any adaptations that may need to be made.</li> </ol>		<ol style="list-style-type: none"> <li>Cluster meetings to discuss expectations, plan unit of work and formulate assessment tasks.</li> <li>Monitoring student achievement levels through cross marking and professional dialogue.</li> <li>Reviewing student achievement through analysis and tracking of results and feedback.</li> <li>Reflection on the progress of the assessment conducted in the unit and consideration of any adaptations that may need to be made.</li> </ol>	

