

# Year 9 Digital Technologies

## Achievement

By the end of Year 10, students explain how people working in design and technologies occupations consider factors that impact on design decisions and the technologies used to produce products, services and environments. They identify the changes necessary to designed solutions to realise preferred futures they have described. When producing 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. Students create designed solutions for one or more of the 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 create 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, adjusting plans when necessary. They select and use appropriate technologies skilfully and safely to produce high quality designed solutions suitable for the intended purpose.

\* ACARA Achievement is described in two years bands.

## Assessment Criteria

An overall level of achievement in this subject is determined by the teacher's on-balance judgment of the evidence presented in students' summative assessment across the following:

- Knowledge and Understanding – digital systems and representation of data
- Processes and Production Skills – collecting, managing and creating data, defining, implementing, evaluating, collaborating and managing

## Delivery (mode, time requirements, lessons)

Students have access to a one hour scheduled lesson and a one hour tutorial each week. Lessons are delivered the online learning management system and teleconferencing. Students are also expected to undertake independent study to complete tasks and assessment in accordance with the Work Rate Calendar. Course materials can be accessed online. Interaction and participation with both the teacher and other students in the course are mandatory requirements and students are required to work with other students in order to develop skills in social interaction and to complete tasks.

## Student Requirements

Computer/Laptop, Software, reliable internet connection with ample download, Microsoft Office. Due to the nature of this course there is no printed or disc copy. Students will be required to sign up to some online resources.

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Units and Learning Experiences, Summative Assessment, Criteria Assessed, Approximate timing/due date of summative assessment		
<b>Semester 1</b>	<b>Term 1</b>	<p><b>3D Design</b> Students will use 3D Design software to design a project in 3D, negotiated with their teacher and linked to the real world.</p> <ul style="list-style-type: none"> <li>• Basic pencil sketching techniques</li> <li>• Mastery of tools and design principles</li> <li>• The design process and evaluation.</li> </ul>
		<p><b>Summative assessment, criteria assessed:</b></p> <ul style="list-style-type: none"> <li>• Project folio of working programs and final assessment task – negotiated project.</li> </ul>
<b>Semester 1</b>	<b>Term 2</b>	<p><b>The Internet</b> This unit explores the technical challenges and questions that arise from the need to represent digital information in computers and transfer it between people and computational devices. The unit then explores the structure and design of the internet and the implications of those design decisions.</p>
		<p><b>Summative assessment, criteria assessed:</b></p> <ul style="list-style-type: none"> <li>• Students prepare a 2-minute Flash Talk related to one of the major issues about the Internet and its effects on people and society. Multimodal (recorded audio response)</li> </ul>
<b>Semester 2</b>	<b>Term 3</b>	<p><b>Sustainable Redesign</b> Students develop an understanding of the design processes, technologies knowledge and design thinking to produce sustainable designed solutions to identified needs or opportunities of relevance to individuals or social groups. The project provides students with a choice and opportunity to select a topic of own interests linked to real world problems. The Design Cycle is guiding them through the project.</p> <ul style="list-style-type: none"> <li>• Inquiring and analysing</li> <li>• Developing ideas</li> <li>• Creating the solution</li> <li>• Evaluating and refining.</li> </ul>
		<p><b>Summative assessment, criteria assessed:</b></p> <ul style="list-style-type: none"> <li>• Portfolio of work with final presentation on 3D prototype – negotiated redesign project.</li> </ul>
	<b>Term 4</b>	<p><b>Digital Information</b> This unit further explores the ways that digital information is encoded, represented and manipulated. Being able to digitally manipulate data, visualize it, and identify patterns, trends and possible meanings are important practical skills that computer scientists do every day. Understanding where data comes from, having intuitions about what could be learned or extracted from it, and being able to use computational tools to manipulate data and communicate about it are the primary skills addressed in the unit.</p>
	<p><b>Summative assessment, criteria assessed:</b></p> <ul style="list-style-type: none"> <li>• 'Rapid Research' activity – Format showdown with computational artefact.</li> </ul>	

**Disclaimer** All of the above information is accurate at the time of development.