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# **Technology (mandatory)**

## **Years 7–8 Syllabus**

Stage 4

**Enviro-traveller**



Teacher planning starts here



**Why does the learning matter?**

Understanding the sustainable land and environmental practices of Aboriginal peoples will enable students to see how they could implement practices into their own localities.

**Target syllabus outcomes**

- 4.1.2 describes factors influencing design in the areas of study of Built Environments, Products, and Information and Communications
- 4.2.2 selects, analyses, presents and applies research and experimentation from a variety of sources
- 4.3.1 applies a broad range of contemporary and appropriate tools, materials and techniques with competence in the development of design projects
- 4.6.2 identifies and explains ethical, social, environmental and sustainability considerations related to design projects

**Assessment activity 5**

Design, produce and evaluate an animation to tell people about your time journey. The animation should: compare past and present custodianship and the impact on the future; promote respect and care of the environment; and demonstrate technical expertise.

**Assessment activity 3**

Conduct two experiments to investigate and evaluate animation software.

**Assessment activity 4**

Generate three storyboards of an animation sequence. Select one for further development and evaluate the sequence in terms of the criteria for success.

**Assessment activity 2**

Research and evaluate the environmental and sustainability concerns of your local area.

**Assessment activity 1**

Reflect on an excursion to the local area, and complete a written account of the visit focusing on the Aboriginal people and their relationship with the land.

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<p><b>Length of unit:</b> 14 weeks (5 lessons per week)</p> <p><b>Area of study:</b> Information and communications</p> <p><b>Design specialisation:</b> Digital Media Design</p> <p><b>Technology/ies:</b> Media technologies</p>	<p><b>Focus outcomes</b></p> <p><b>4.1.2</b> describes factors influencing design in the areas of study of Built Environments, Products, and Information and Communications</p> <p><b>4.2.2</b> selects, analyses, presents and applies research and experimentation from a variety of sources</p> <p><b>4.3.1</b> applies a broad range of contemporary and appropriate tools, materials and techniques with competence in the development of design projects</p> <p><b>4.6.2</b> identifies and explains ethical, social, environmental and sustainability considerations related to design projects.</p>
<p><b>Unit description</b></p> <p>In this unit of work, students are intrepid time travellers who journey into the past to investigate the land of their local area. Returning to the present, students compare past and present environment and dream about what they want for the future. Throughout their journey, students explore the relationship of Aboriginal custodians with the land, and issues of environmental sustainability. Using animation software such as Gif animator, students design, produce and evaluate an animation to describe their journey.</p> <p><b>Aboriginal perspectives</b></p> <ul style="list-style-type: none"><li>• Custodianship and stewardship</li><li>• Country</li><li>• Dreaming stories</li><li>• Relationship with environment</li><li>• Traditional technologies</li></ul>	<p><b>Contributing outcomes</b></p> <p><b>4.1.1</b> applies design processes that respond to needs and opportunities in each design project</p> <p><b>4.2.1</b> generates and communicates creative design ideas and solution</p> <p><b>4.3.2</b> demonstrates responsible and safe use of a range of tools, materials and techniques in each design project.</p> <p><b>4.4.1</b> explains the impact of innovation and emerging technologies on society and the environment</p> <p><b>4.5.1</b> applies management processes to successfully complete design projects</p> <p><b>4.5.2</b> produces quality solutions that responds to identified needs and opportunities in each design project</p> <p><b>4.6.1</b> applies appropriate evaluation techniques throughout each design project.</p>

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### Resources

- Edwards, C & Buxton, L, *Guyunggu – an Aboriginal way of being: teacher’s notes*, published by Catholic Schools Office, 1998
- NSW Aboriginal Lands Council <http://www.alc.org.au>
- Aboriginal Nations Dreaming Story Animations <http://www.ablnat.com.au>
- NSW Department of Environment and Climate Change and NSW National Parks and Wildlife <http://www.environment.nsw.gov.au> → Aboriginal Country
- City of Sydney Council, Indigenous webpages [www.cityofsydney.nsw.gov.au/barani](http://www.cityofsydney.nsw.gov.au/barani)
- Marrickville Council, Indigenous webpages [www.marrickville.nsw.gov.au/cadigalwangel](http://www.marrickville.nsw.gov.au/cadigalwangel)
- Australian Government Culture and Recreation Portal [www.cultureandrecreation.gov.au/articles/indigenous](http://www.cultureandrecreation.gov.au/articles/indigenous)
- Global Footprints [www.globalfootprints.org](http://www.globalfootprints.org) → Sustainable community, sustainable future, issues, waste
- Peanut Butter Wiki [www.pbwiki.com](http://www.pbwiki.com) → academic, PBwiki for classrooms, view demonstration, create your own wiki

### ICT

#### Students will use the following ICTs throughout this unit:

- PBwiki – freeware used to create interactive web pages. Similar to ‘wikipedia’, students can edit online information. Plug ins such as digital photos, recordings and video can be included and there is a discussion board facility. It will be used to collect and collate class research.
- GIF Animator – freeware used to create simple animation sequences. The student first creates ‘frames’ using MS Paint and imports them into GIF animator.
- MS Paint – used to draw each ‘frame’ of the animation.
- Word processing software (eg MSWord) will also be used to present design portfolio.

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14 weeks (5 lessons per week)

Outcomes	Students learn about: <i>Students learn to:</i>	Integrated learning experiences, instruction and assessment	Evidence of learning	Feedback
4.1.1	<ul style="list-style-type: none"> <li>• design processes including analysing needs, problems and opportunities</li> <li>• <i>apply a design process when developing quality solutions for each design project</i></li> </ul>	<p><b>ANALYSING PROBLEMS, NEEDS AND OPPORTUNITIES</b></p> <p><b>Teacher:</b></p> <ul style="list-style-type: none"> <li>• Overviews the unit, and explains the task.</li> <li>• Leads class discussion to determine a definition of ‘custodianship’.</li> </ul> <p><b>Students:</b></p> <p>Trace their footprints on to coloured paper and cut them out.</p> <p><b>Teacher:</b></p> <p>Refers to footprints while leading class through a guided reflection of the design situation:</p> <ul style="list-style-type: none"> <li>– You are not the first person to step foot on this land. You are not the last person to step foot on this land. Think of who was here before you. Think who will be here after you ...</li> <li>– Who are the custodians of the school today?</li> <li>– How do we treat the land?</li> <li>– Who are the traditional custodians of the land?</li> <li>– What do we know about them?</li> <li>– What should we ask them?</li> <li>– Who will be the custodians of the future?</li> <li>– Why should we protect the land for their future?</li> </ul> <p><b>Students:</b></p> <p>Write a response to the reflection on their footprint. Footprints could then be displayed around the classroom for the duration of the unit.</p>	<p>Completed reflection demonstrates students prior understanding of concepts related to the project.</p>	<p>Teacher provides oral feedback to students.</p>

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Outcomes	Students learn about: <i>Students learn to:</i>	Integrated learning experiences, instruction and assessment	Evidence of learning	Feedback
4.2.1	<ul style="list-style-type: none"> <li>• communication methods suitable for specific audiences including                             <ul style="list-style-type: none"> <li>– users and clients</li> <li>– technical experts</li> <li>– peers</li> </ul> </li> <li>• <b>communicate information appropriate to specified audiences</b></li> </ul>	<p><b>Class:</b></p> <p>Completes dictogloss activity as follows:</p> <p>(a) teacher reads the following design situation:</p> <p><i>You have been given the keys to a time machine! You jump on board and travel to the past. A time before white invasion. You look around the site where your school now stands and notice things are very different. You explore the area and meet the traditional custodians. They call the boundaries of this area their ‘country’. They talk in a language unfamiliar to you, but you can see that they have total respect for the land.</i></p> <p><i>You jump into the time machine and return to the present time. You look around the school with new eyes. You remember the people who were here before you and how much the landscape has been changed. You notice that people today don’t respect the land in the same way. What will be left for future generations?</i></p> <p><i>You dream of what the future could be like and try to convince people that we must learn to respect our environment, before it is too late!</i></p> <p><i>The problem is, no one believes you! You must find a way to tell people about your amazing time travel journey. The sake of the planet depends on it!</i></p> <p>(b) the text is read again and students note key words and phrases</p> <p>(c) working in small groups, students compare notes and try to reconstruct the design situation</p> <p>(d) each group reads out their version and makes amendments</p> <p>(e) class develops a shared understanding of the design situation and key terminology.</p> <p><b>Students:</b></p>	<p>Reconstructed design situation demonstrates student understanding of the task and key terminology. It also demonstrates student ability to communicate information to a specified audience.</p>	<p>Peer and teacher feedback on reconstructed text.</p>
4.1.1	<ul style="list-style-type: none"> <li>• needs and opportunities in the areas of study:                             <ul style="list-style-type: none"> <li>– Built Environments</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Identify the design need, problem or opportunity posed by the design situation.</li> <li>• Identify the area of study and design specialisation.</li> </ul>	<p>Student identification of design need, problem or</p>	<p>Teacher gives oral feedback</p>

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Outcomes	Students learn about: <i>Students learn to:</i>	Integrated learning experiences, instruction and assessment	Evidence of learning	Feedback
	<ul style="list-style-type: none"> <li>– Products</li> <li>– Information and Communications</li> <li>• <i>identify needs and opportunities that require solutions in the areas of study</i></li> </ul>	<ul style="list-style-type: none"> <li>• Identify the technology to be used.</li> </ul>	<p>opportunity shows their ability to respond to a design situation.</p>	<p>during discussion.</p>
<p>4.2.2</p> <p>4.2.2</p> <p>4.3.1</p>	<ul style="list-style-type: none"> <li>• research methods               <ul style="list-style-type: none"> <li>– needs analysis</li> <li>– surveys and interviews</li> <li>– searching techniques including use of the Internet</li> </ul> </li> <li>• <i>use effective research methods to identify needs and opportunities and locate information relevant to the development of each design project</i></li> <li>• <i>use the internet when researching</i></li> <li>• the internet as a source of information</li> <li>• <i>select and use appropriate data types for particular purposes</i></li> </ul>	<p><b>RESEARCHING: TIME TRAVELLING TO THE PAST</b> (research the relationship of Aboriginal custodians with the land)</p> <p><b>Teacher:</b></p> <ul style="list-style-type: none"> <li>• Reminds students that they will be time travellers and their task will be to create a animated recording of their journey. The first leg of journey is into the past to investigate the connectedness of the people with their land.</li> <li>• Explains that: <i>‘Country’ is a word used to describe an area of land in which a number of Aboriginal families live. This country has its own borders, history, language, laws, protocols, music, dances, songs and ceremonies. Aboriginal Australia is made up of hundreds of countries that still exist today.</i> Source: ‘Guyunggu’, Coral Oomera Edwards and Lisa Buxton. Catholic Schools Office, Diocese of Broken Bay, 1998.</li> </ul> <p><b>Students:</b> Research the Aboriginal country in which the school is situated. Reference: NSW Aboriginal Lands Council</p>	<p>Correct identification of the school’s Aboriginal country demonstrates skill in using the internet for research.</p>	<p>Teacher feedback confirms the correct identification of Aboriginal country.</p>

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Outcomes	Students learn about: <i>Students learn to:</i>	Integrated learning experiences, instruction and assessment	Evidence of learning	Feedback
4.6.2	<ul style="list-style-type: none"> <li>• environmental and sustainability considerations</li>   <li>• <i>identify ethical, social, environmental and sustainability considerations relevant to each design project</i></li> </ul>	<p><b>Teacher:</b> Explains:</p> <ul style="list-style-type: none"> <li>• the connection Aboriginal people have with the land, identified in the saying ‘we are the land, the land is us’</li> <li>• that Aboriginal land began in the Dreamtime</li> <li>• that communities saw themselves as custodians or caretakers of their environment.</li> </ul> <p><b>Students:</b></p> <ul style="list-style-type: none"> <li>• Identify a dreaming story or provide examples of the respect shown by Aboriginal people to their environment or define ‘custodianship’.</li> <li>• Share examples with the class.</li> <li>• Record key themes of discussion.</li> </ul> <p><b>Students:</b></p> <ul style="list-style-type: none"> <li>• Read dreaming story <i>The Dolphin</i> and complete three level reading guide about the relationship of the people and the land. <a href="http://www.ablnat.com.au/dream2/dolphin1">www.ablnat.com.au/dream2/dolphin1</a></li> </ul>	<p>Examples raised through class discussion demonstrate students prior understanding of the relationship of the Aboriginal people with the land.</p> <p>Completed three level reading guide demonstrates:</p> <ul style="list-style-type: none"> <li>• student ability to accurately interpret meaning from a traditional story</li> <li>• understanding of sustainability.</li> </ul>	<p>Teacher provides feedback through discussion.</p> <p>Teacher provides written feedback.</p>

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<p>4.2.2</p> <p>4.6.2</p>	<ul style="list-style-type: none"> <li>• research methods               <ul style="list-style-type: none"> <li>– needs analysis</li> <li>– surveys and interviews</li> <li>– searching techniques including use of the Internet</li> </ul> </li> <li>• <b><i>use effective research methods to identify needs and opportunities and locate information relevant to the development of each design project</i></b></li> <li>• <b><i>use the internet when researching</i></b></li> <li>• environmental and sustainability considerations</li> <li>• <b><i>identify ethical, social, environmental and sustainability considerations relevant to each design project</i></b></li> </ul>	<p><b>Assessment activity 1</b></p> <p><b><i>Group work:</i></b></p> <p>Students complete a jigsaw activity to research the land, people, language and stories of their local area (country) prior to invasion:</p> <ul style="list-style-type: none"> <li>• Students are allocated into ‘home’ groups of six students.</li> <li>• Each student in the ‘home’ group is given a number from 1–5.</li> <li>• All of the students identified as ‘1’ form ‘away group 1’; students identified as ‘2’ form away group 2, etc.</li> <li>• Each ‘away’ group researches one of the following areas:               <ul style="list-style-type: none"> <li>– what animals can you see?</li> <li>– what natural landforms can you see/What plants can you see?</li> <li>– what language can you hear being spoken? What are they talking about?</li> <li>– what stories are being told?</li> <li>– what daily tasks may the people be performing?</li> </ul> </li> <li>• At the end of the research activity, the home groups re-form.</li> <li>• Each ‘away’ group member provides feedback on their research to the home group.</li> <li>• Students reflect on their research and complete a written account of the Aboriginal people and their relationship with the land.</li> </ul> <p><b><i>This activity may form the basis of a class excursion. That is, students conduct initial research, and then report their findings while visiting the local area.</i></b></p> <p><b>NB:</b></p> <p>Teachers are advised to do some initial research to guide students on a productive search. Areas of research may be omitted or substituted depending on teacher findings. Useful websites include:</p> <p><a href="http://www.nationalparks.nsw.gov.au/npws.nsf/content/home">www.nationalparks.nsw.gov.au/npws.nsf/content/home</a></p> <p><a href="http://www.cityofsydney.nsw.gov.au/barani">www.cityofsydney.nsw.gov.au/barani</a></p> <p><a href="http://www.virtualwarrane.com.au">www.virtualwarrane.com.au</a></p> <p>and local government sites eg <a href="http://www.marrickville.nsw.gov.au/cadigalwangel">www.marrickville.nsw.gov.au/cadigalwangel</a></p>	<p>Completed jigsaw activity demonstrates student ability to work cooperatively with peers, locate and interpret relevant information and effectively use internet.</p>	<p>Teacher observation and oral feedback thorough out the jigsaw activity.</p>

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4.3.1	<ul style="list-style-type: none"> <li>software including desktop publishing, presentation, video editing, draw and paint, word processing, web design</li> <li><b><i>select and use appropriate computer hardware and software in the development of a design project</i></b></li> </ul>	<p><b>Students:</b></p> <ul style="list-style-type: none"> <li>Use MS Paint to draw images inspired by this research.</li> <li>Students must use every paint tool in their drawing.</li> </ul> <p><b>NB:</b> MS Paint software will be used to create the animation sequence later in this unit. This activity provides opportunity for the students to explore the tools and techniques of this software.</p>	Completed sketches demonstrate student ability to interpret the results of research. Sketches also shows student ability to use MS Paint tools and drawing techniques effectively.	Teacher provides written feedback on final sketches.
4.6.2	<ul style="list-style-type: none"> <li>environmental and sustainability considerations</li> <li><b><i>identify ethical, social, environmental and sustainability considerations relevant to each design project</i></b></li> </ul>	<p><b>RESEARCHING: TIME TRAVEL TO THE PRESENT</b> (research the relationship of today’s custodians with the land, emphasis on sustainable practices)</p> <p><b>Class:</b></p> <ul style="list-style-type: none"> <li>Discuss the statement: Land is fundamental to the wellbeing of Aboriginal people. The land is not just soil or rocks or minerals, but a whole environment that sustains and is sustained by people and culture. For Indigenous Australians, the land is the core of all spirituality. <a href="http://www.cultureandrecreation.gov.au/articles/indigenous">www.cultureandrecreation.gov.au/articles/indigenous</a></li> <li>Define ‘sustain’ in the context of the statement. Discuss the importance of the land to the Aboriginal people.</li> <li>Compare this with today’s Australian population.</li> <li>Brainstorm significant current environmental issues.</li> <li>Suggest what a sustainable community could look like today.</li> <li>Research a definition of ‘a sustainable community’ from Global Footprints website.</li> </ul>	Class discussion demonstrates student knowledge of environmental and sustainability issues.	Teacher feedback during class discussion clarifies any misconceptions about environmental and sustainability issues.

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4.3.1	<ul style="list-style-type: none"> <li>• range, suitability and use of data types</li> <li>• a range of media such as video, animation, audio</li> <li>• the internet as a source of information</li> <li>• <b><i>select and use appropriate data types for particular purposes</i></b></li> </ul>	<p><i>A sustainable community:</i></p> <ul style="list-style-type: none"> <li>– is healthy and safe</li> <li>– uses resources sensibly and fairly</li> <li>– enables everyone to play a part</li> <li>– cuts waste and pollution</li> <li>– has its own character</li> <li>– cares about people and nature</li> </ul> <p><a href="http://www.globalfootprints.org/home/sustainability.htm#">www.globalfootprints.org/home/sustainability.htm#</a></p> <p><b>Assessment activity 2</b></p> <p><b>Students:</b></p> <p>Research how sustainable the local community is and record all research on a class ‘wiki’ site.</p>		
4.2.2	<ul style="list-style-type: none"> <li>• research methods               <ul style="list-style-type: none"> <li>– needs analysis</li> <li>– surveys and interviews</li> <li>– searching techniques including use of the Internet</li> </ul> </li> <li>• <b><i>use effective research methods to identify needs and opportunities and locate information relevant to the development of each design project</i></b></li> </ul>			
4.3.1	<ul style="list-style-type: none"> <li>• the function and correct use of a range of input and output tools used for               <ul style="list-style-type: none"> <li>– capturing images such as digital cameras, videos, scanners</li> <li>– storing</li> <li>– printing</li> </ul> </li> </ul>	<p><b>Students:</b></p> <p>Conduct an internet search to find out:</p> <ul style="list-style-type: none"> <li>• what a wiki site is</li> <li>• how to use PB wiki</li> <li>• how to establish a class wiki site to record results of data collection.</li> </ul> <p><a href="http://www.pbwiki.com">www.pbwiki.com</a></p>		

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4.6.2	<ul style="list-style-type: none"> <li>• <i>select and use appropriate computer hardware and software in the development of a design project</i></li> <li>• uses of media technologies</li> <li>• collecting information from primary and secondary sources including digitising sound, text, graphics</li> <li>• organising information for an appropriate audience</li> <li>• environmental and sustainability considerations</li> <li>• <i>select and use techniques appropriate for the purposes of a design project</i></li> <li>• <i>identify ethical, social and environmental sustainability considerations relevant to each design project</i></li> </ul>	<p><b>Class:</b></p> <ul style="list-style-type: none"> <li>• Collect data and document the sustainability of their local community. Data collection activities may include:               <ul style="list-style-type: none"> <li>– inviting a local Aboriginal person to walk and talk about the local area</li> <li>– interviewing your local National Parks ranger or landcare volunteer</li> <li>– researching indigenous plants and animals from National Parks website and identify any species in danger of extinction in your local area: <a href="http://www.nationalparks.nsw.gov.au/npws.nsf/content/home">www.nationalparks.nsw.gov.au/npws.nsf/content/home</a></li> <li>– digitally recording sounds of the local area, and identifying the source of each sound</li> <li>– digitally photographing sustainable (eg water tanks, solar heating, hybrid car, native garden) and non-sustainable practices in the local area</li> <li>– surveying the local community about sustainable practices, eg how many households have installed water tanks; how many native gardens are there; do people recycle; use of green shopping bags; water conservation</li> <li>– completing a class survey to determine the average number of cars per household</li> <li>– researching local government websites for sustainable practices, eg community nurseries, rebates on water tanks.</li> </ul> </li> <li>• Upload data onto the PBwiki site. Digital images, video recordings, scanned images, digital recording can all be uploaded as ‘plug ins’.</li> <li>• Discuss research results on the wiki discussion board.</li> <li>• Using the global footprint definition of sustainable community as a guide, evaluate how sustainable their local community is and suggests areas of improvement.</li> <li>• Class posts final evaluation on wiki site.</li> </ul>	<p>Students completed evaluation will demonstrate their ability to locate, organise and analyse information, and their understanding of sustainability issues.</p>	<p>Teacher provides written feedback on student report.</p>

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Outcomes	Students learn about: <i>Students learn to:</i>	Integrated learning experiences, instruction and assessment	Evidence of learning	Feedback
		<p><b>Extension activity</b> Invite parents and others to visit wiki site and make comments.</p>		
4.2.1	<ul style="list-style-type: none"> <li>• methods used to generate creative design ideas including               <ul style="list-style-type: none"> <li>– mind mapping</li> <li>– brainstorming</li> <li>– sketching and drawing</li> </ul> </li> <li>• <i>use a variety of methods to generate creative design ideas for each design project</i></li> </ul>	<p><b>ENVIRONMENTAL AND SUSTAINABILITY CONSIDERATIONS</b></p> <p><b>Students:</b></p> <ul style="list-style-type: none"> <li>• Trace their hands on coloured paper.</li> <li>• Dream about what they want for their future area.</li> <li>• Answer the question – <i>what can these hands do to sustain my country for the future?</i></li> <li>• Record responses on hands and paste these around the room.</li> </ul>		
4.2.2  4.4.1	<ul style="list-style-type: none"> <li>• <i>identify, interpret and evaluate data from a variety of sources</i></li> <li>• the impact of innovation and emerging technology on society and the environment</li> <li>• environmental and sustainability considerations</li> <li>• <i>identify and describe a selected innovation or emerging technology in each area of study of Built Environments, Products, and Information and Communications</i></li> </ul>	<p><b>Teacher:</b></p> <ul style="list-style-type: none"> <li>• Explains that ‘looking over country’ is Aboriginal English for managing the local environment.</li> <li>• Explains that Aboriginal custodians developed a vast knowledge about sustainable ways to manage the environment.</li> </ul> <p><i>Towards a new dreaming – future directions for Land Management in Australia.</i></p> <p>Clean-up Australia Ltd 1995.</p> <p><b>Students:</b></p> <ul style="list-style-type: none"> <li>• Investigate methods used by Aboriginal custodians to manage the environment eg firestick farming, managing water supply, sustainable practices of food collection.</li> <li>• Write a report which compares and contrasts Aboriginal use of technology with that of European settlers. Describe the impact of this technology on the environment.</li> </ul>	<p>Students will be assessed on their ability to:</p> <ul style="list-style-type: none"> <li>• locate resources and information</li> <li>• select and record information and sources</li> <li>• evaluate similarities and differences in the use of technology</li> <li>• evaluate the impact of technologies on the environment.</li> </ul>	<p>Teacher provides written feedback on student response.</p>

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		<p><b>Extension activity:</b> Investigate how this traditional knowledge is used today to manage our environment, eg Wolli Creek, Homebush Bay, Kakadu, Mungo National Park, Jervis Bay.</p>	<p>Students will be assessed on their ability to:</p> <ul style="list-style-type: none"> <li>• demonstrate an understanding of how Aboriginal custodians sustained past and present environments</li> <li>• evaluate the impact of traditional technologies on the environment.</li> </ul>	
4.2.1	<ul style="list-style-type: none"> <li>• use of design folio to record and reflect on design ideas and decisions</li> <li>• <b><i>use a design folio to record and reflect on design ideas and decisions</i></b></li> <li>• using ICTs to plan, develop and document design projects</li> <li>• <b><i>compose a design folio for a specific audience in electronic format including features such as tabs, indents, headers and footers, margins and line and paragraph spacing and using appropriate layout and graphic design</i></b></li> </ul>	<p><b>Students:</b> Develop a design folio in electronic format to communicate the research and creative ideas generated. Use features such as tabs, indents, headers and footers, margins, line and paragraph spacing and apply appropriate layout and graphic design when composing the design folio.</p>	<p>Design folio demonstrates student use of researching, communicating and ICT skills.</p>	<p>Teacher gives written feedback on design folio development.</p>

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Outcomes	Students learn about: <i>Students learn to:</i>	Integrated learning experiences, instruction and assessment	Evidence of learning	Feedback
4.1.1	<ul style="list-style-type: none"> <li>• needs and opportunities in the areas of study:               <ul style="list-style-type: none"> <li>– Built Environments</li> <li>– Products</li> <li>– Information and Communications</li> </ul> </li> <li>• <i>identify needs and opportunities that require solutions in the areas of study</i></li> </ul>	<p><b>ANALYSING PROBLEMS, NEEDS AND OPPORTUNITIES</b></p> <p><b>Teacher:</b> Recalls design situation and identifies the following design constraints:</p> <ul style="list-style-type: none"> <li>• the journey should describe past, present and future</li> <li>• GIF Animator software must be used to recount the journey</li> <li>• the animation sequence must promote respect and care of the environment.</li> </ul> <p><b>Students:</b> Negotiate a design brief for the project.</p>	<p>Negotiated design brief demonstrates student’s ability to identify and respond to a design need, problem or opportunity.</p>	<p>Teacher provides oral feedback.</p>
4.1.2	<ul style="list-style-type: none"> <li>• factors affecting design               <ul style="list-style-type: none"> <li>– function</li> <li>– aesthetics</li> <li>– ethical</li> <li>– environmental</li> <li>– socio-cultural</li> <li>– resource availability</li> </ul> </li> <li>• <i>describe the factors affecting design in the development of each design project</i></li> <li>• <i>evaluate the appropriateness of specific design solutions for different cultural groups including Aboriginal and Torres Strait Islanders and other Indigenous peoples</i></li> </ul>	<p><b>FACTORS AFFECTING DESIGN</b></p> <p><b>Class:</b> Visit the gallery of the Aboriginal black nation website <a href="http://www.abnl.com.au">www.abnl.com.au</a> and view one animated dreaming story.</p> <p><b>Students:</b></p> <ul style="list-style-type: none"> <li>• Analyse the functional, aesthetic, environmental, ethical and socio-cultural factors affecting the design of this animation.</li> <li>• Explain how they will respond to these factors when developing the animation of the journey.</li> </ul> <p>For example, the animation must have:</p> <ul style="list-style-type: none"> <li>• functional attributes such as being easy-to-use, entertaining, and recounting the journey</li> <li>• aesthetic attributes such as eye-catching graphics, realistic drawings</li> <li>• ethical attributes such as not naming individuals, acknowledging traditional custodians respectfully, original ideas</li> </ul>	<p>Student analysis of animated dreaming story shows understanding of the factors affecting design, and the appropriateness of solutions for different cultural groups.</p> <p>Student explanation demonstrates their ability to apply</p>	<p>Teacher provides oral feedback.</p>

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Outcomes	Students learn about: <i>Students learn to:</i>	Integrated learning experiences, instruction and assessment	Evidence of learning	Feedback
4.6.1	<ul style="list-style-type: none"> <li>developing criteria for success as a tool for assessing design development and production</li> <li><b><i>apply criteria for success in decision making during the development of each design project</i></b></li> </ul>	<ul style="list-style-type: none"> <li>environmental attributes – animation must promote care and respect for the environment</li> <li>socio-cultural attributes, including the accurate representation of the Australian indigenous culture and of contemporary Australian culture</li> <li>resource availability, eg use of GIF Animator, access to software and hardware.</li> </ul> <p><b>CRITERIA FOR SUCCESS</b></p> <p><i>Students:</i> Negotiate, develop and record the criteria for success that meets the needs and constraints of the design project. The criteria should complete the following sentence: <i>A well-designed animation of my journey in the time machine will ....</i></p>	<p>information to the development of their design project.</p> <p>The written criteria for success demonstrates student understanding of the use of criteria as a tool for assessing design.</p>	<p>Teacher provides oral feedback.</p>
4.2.2	<ul style="list-style-type: none"> <li>experimentation and testing of design ideas</li> <li>relationship of experimentation to success criteria</li> <li><b><i>apply the results of experimentation to designing</i></b></li> </ul>	<p><b>EXPERIMENTING AND TESTING IDEAS, TOOLS AND TECHNIQUES</b></p> <p><b>Assessment activity 3</b></p> <p><i>Students:</i> Complete a simple experiment to find out how GIF Animator works:</p> <ul style="list-style-type: none"> <li>open MS Paint software</li> <li>change attributes to 200 x 200 pixels</li> <li>draw a small boomerang shape using the line tool in MS Paint.</li> <li>colour the boomerang using the fill tool and save as boomerang001.gif (NB: all images must be saved as GIF files)</li> </ul>	<p>Completion of experiments demonstrates student skill.</p>	<p>Teacher observes experiments and provides oral feedback.</p>

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Outcomes	Students learn about: <i>Students learn to:</i>	Integrated learning experiences, instruction and assessment	Evidence of learning	Feedback
4.3.1	<p><i>and making when developing each design project</i></p> <ul style="list-style-type: none"> <li>uses of media technologies</li> <li><i>select and use techniques appropriate for the purposes of a design process</i></li> </ul>	<ul style="list-style-type: none"> <li>use the lasso tool in MS Paint to ‘capture’ the image of the boomerang. Move the image slightly and save as boomerang002.gif</li> <li>repeat until ten images are saved</li> <li>import images into GIF Animator and run. You should see the boomerang fly and return!</li> </ul> <p><b>Students:</b> Record the flying boomerang experiment using the following headings: aim, method, results, conclusion. NB: the conclusion should describe what the student found out by completing the experiment, and how they intend to use this knowledge when developing their animation.</p>	Evaluation of experiment demonstrates students ability to analyse and apply the results of research and experimentation.	<p>Students with poor skills may be required to complete the experiment more than once to develop required skill.</p> <p>Student self-assessment completed in experiment conclusion.</p>
4.2.1  4.3.1	<ul style="list-style-type: none"> <li>organising information for an appropriate audience</li> <li><i>select and use techniques appropriate for the purposes of a design project</i></li> <li>planning including storyboards, scripts</li> </ul>	<p><b>GENERATING AND EVALUATING CREATIVE DESIGN IDEAS</b></p> <p><b>Assessment activity 4</b></p> <p><b>Teacher:</b> Provides examples of storyboards and discuss their purpose.</p> <p><b>Class:</b></p> <ul style="list-style-type: none"> <li>Identify the key components of a storyboard and define their purpose.</li> <li>Watch five minutes of an animated feature film (eg toy story, cars etc).</li> <li>Deconstruct the five minute segment and create a sample storyboard.</li> </ul>		



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Outcomes	Students learn about: <i>Students learn to:</i>	Integrated learning experiences, instruction and assessment	Evidence of learning	Feedback
	<ul style="list-style-type: none"> <li>• <i>apply a design process that responds to needs and opportunities for each design project</i></li> </ul>			
4.1.1	<ul style="list-style-type: none"> <li>• <i>apply a design process that responds to needs and opportunities for each design project</i></li> </ul>	<p><b>Assessment activity 5</b></p> <p><i>Students:</i></p> <ul style="list-style-type: none"> <li>• Follow steps outlined in time and action plan.</li> <li>• Produce the animated sequence using a range of appropriate techniques.</li> <li>• Demonstrate safe and responsible use of the computer when developing the animated sequence.</li> </ul>	<p>Completed animated sequence demonstrates student ability to use ICTs responsibly and safely to produce a quality design solution.</p>	<p>Teacher provides oral feedback throughout the development of the project, and written feedback on the final product.</p>
4.5.2	<ul style="list-style-type: none"> <li>• relationship of quality solutions to needs and opportunities and the criteria for success for each design project</li> <li>• <i>produce solutions reflecting quality standards appropriate to each design project</i></li> </ul>			
4.3.1	<ul style="list-style-type: none"> <li>• storing and retrieving</li> <li>• processing techniques for combining and manipulating such as special effects, cropping, tweening, morphing</li> <li>• <i>select and use techniques for the purposes of a design project</i></li> </ul>			
4.3.2	<ul style="list-style-type: none"> <li>• displaying the final product</li> <li>• the safe and responsible use of materials, tools and techniques in each design project</li> <li>• <i>use tools, materials and techniques in a responsible and safe manner in each design project.</i></li> </ul>			

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Outcomes	Students learn about: <i>Students learn to:</i>	Integrated learning experiences, instruction and assessment	Evidence of learning	Feedback
4.6.1	<ul style="list-style-type: none"> <li>• final evaluation considering                             <ul style="list-style-type: none"> <li>– design process used</li> <li>– design solutions</li> <li>– reflection on learning</li> </ul> </li> <li>• <i>evaluate prior to, during and at completion of each design solution</i></li> <li>• <i>self-assess and peer-assess design solutions</i></li> </ul>	<p><b><i>Class:</i></b></p> <ul style="list-style-type: none"> <li>• Recalls the design situation and brief.</li> <li>• Recalls the criteria to evaluate success.</li> </ul> <p><b><i>Groups:</i></b></p> <p>Complete peer assessment of animation, using criteria for success to evaluate.</p> <p><b><i>Students:</i></b></p> <ul style="list-style-type: none"> <li>• Describe how the design need was met by this project.</li> <li>• Discuss how well the project met the criteria for success.</li> <li>• Discuss the problems encountered and how they were resolved.</li> <li>• Explain how the design could be improved.</li> <li>• Discuss the overall success of the project including a discussion of skills developed.</li> </ul>	<p>Student evaluations demonstrates an understanding of the criteria for success and an ability to reflect on their own learning.</p>	<p>Student self assessment; teacher provides written feedback.</p>

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### Assessment activity 1 – Research

#### Description of activity

Students imagine they are time travellers who journey into the past to investigate the land of their local area. They compare the past environment with the present environment to determine what is required to manage their local area. Students complete a written evaluation of their local area focusing on the Aboriginal people and their relationship with the land. They include two images created using paint software that were inspired by their investigation.

#### Context

This is an assessment activity in a unit of work on animation comparing the past stewardship of the Aboriginal custodians and the sustainability of their practices with the present care of the local area to determine what is required to manage the local environment. Students have an understanding of research methods and will include their research as part of their portfolio.

#### Areas for assessment

Researching, experimenting, generating, communicating.

#### Outcomes

##### *A student:*

- 4.2.2 selects, analyses, presents and applies research and experimentation from a variety of sources
- 4.6.2 identifies and explains ethical, social, environmental and sustainability considerations related to design projects

#### Criteria for assessing learning

Students will be assessed on their ability to:

- research and analyse the indigenous flora, fauna, people and practices of the local area
- compare the past environment with the present environment
- present a written evaluation
- create two images using paint.

## Assessment activity 2 – Class wiki

### Description of activity

Students imagine they are time travellers who journey into the past to investigate the land of their local area. They research the sustainable practices of their local area and contribute findings to a class wiki. Students refer to the data collected and displayed on the class wiki and evaluate the sustainability of the local community.

### Context

This is an assessment activity in a unit of work on animation comparing the past stewardship of the Aboriginal custodians and the sustainability of their practices with the present care of the local environment to determine what is required to manage the local environment. Students have researched their local area. They understand the requirements and protocols of contributing to a wiki and will include this information as part of their portfolio.

### Areas for assessment

Researching, experimenting, generating, communicating  
Producing solutions through using tools, materials and techniques

### Outcomes

#### *A student:*

- 4.2.2 selects, analyses, presents and applies research and experimentation from a variety of sources
- 4.3.1 applies a broad range of contemporary and appropriate tools, materials and techniques with competence in the development of design projects
- 4.3.2 demonstrates responsible and safe use of a range of tools, materials and techniques in each design project
- 4.6.2 identifies and explains ethical, social, environmental and sustainability considerations related to design projects

### Criteria for assessing learning

Students will be assessed on their ability to:

- locate, select and record resources and information
- organise information into a wiki
- demonstrate an understanding of environmental and sustainability concerns
- use research findings to evaluate environmental and sustainability concerns in their local area.

## Assessment activity 3 – Evaluation of animation software

### Description of activity

Students conduct two experiments to investigate and evaluate the features of animation software to determine which software to use for the development of their animation project. Students experiment in the use of animation software such as GIF Animator or Pivot.

### Context

This is an assessment activity in a unit of work on animation comparing the past stewardship of the Aboriginal custodians and the sustainability of their practices with the present care of the local environment to determine what is required to manage the local area. Students imagine they are time travellers who journey into the past to investigate the land of their local area. Students have developed skills in the use of animation software such as GIF Animator or Pivot. Students will include these experiments as part of their portfolio.

### Areas for Assessment

Researching, experimenting, generating, communicating

Impact of technologies and design activities

Producing solutions using tools, materials, techniques

Managing and evaluating design processes and solutions

### Outcomes

#### *A student:*

4.2.2 selects, analyses, presents and applies research and experimentation from a variety of sources

4.3.1 applies a broad range of contemporary and appropriate tools, materials and techniques with competence in the development of design projects

### Criteria for assessing learning

Students will be assessed on their ability to:

- experiment and test design ideas and processing techniques
- document experiment results
- evaluate the features of animation software.

## Assessment activity 4 – Development of a storyboard

### Description of activity

Students analyse the storyboard for *The Dolphin* and then generate three storyboards for an animation sequence which compares the past stewardship of the Aboriginal custodians and the sustainability of their practices with the present care of the local environment to determine what is required to manage the local environment. They evaluate each storyboard and select one for development as an animation.

### Context

This is an assessment activity in a unit of work on animation comparing the past stewardship of the Aboriginal custodians and the sustainability of their practices with the present care of the local environment to determine what is required to manage their local environment. Students imagine they are time travellers who journey into the past to investigate the land of their local area. Students have researched their local area and have developed skills in the use of animation software such as GIF Animator or Pivot. The storyboards will be included as part of their portfolio.

### Areas for assessment

Researching, experimenting, generating, communicating  
Impact of technologies and design activities  
Producing solutions using tools, materials, techniques  
Managing and evaluating design processes and solutions

### Outcomes

#### *A student:*

- 4.2.1 generates and communicates creative ideas and solutions
- 4.3.1 applies a broad range of contemporary and appropriate tools, materials and techniques with competence in the development of design projects
- 4.6.1 applies appropriate evaluation techniques throughout each design project

### Criteria for assessing learning

Students will be assessed on their ability to:

- analyse the storyboard of *The Dolphin*
- select and use animation techniques appropriate for the project
- collect information from primary and secondary sources including text and graphics
- plan and develop three storyboards
- evaluate each storyboard
- select a storyboard for further development.

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### Assessment activity 5 – Development of an animation

#### Description of activity

Students design, produce and evaluate an animation comparing the past stewardship of the Aboriginal custodians and the sustainability of their practices with the present care of the local environment.

The animation should:

- compare the past and present custodianship of the local area
- provide ideas for management of the local area
- promote respect and care of the environment
- demonstrate technical expertise.

#### Context

This is the final assessment activity in a unit of work on animation comparing the past stewardship of the Aboriginal custodians and the sustainability of their practices with the present care of the local environment to determine what is required to manage their local environment. Students imagine they are time travellers who journey into the past to investigate the land of their local area. Students have researched their local area, developed skills in the use of animation software such as GIF Animator or pivot and have developed and evaluated storyboards. The animation will be saved on flash drive, CD or DVD and screen grabs will be included in their portfolio.

#### Areas for assessment

Researching, experimenting, generating, communicating  
Impact of technologies and design activities  
Producing solutions using tools, materials, techniques  
Managing and evaluating design processes and solutions

#### Outcomes

*A student:*

- 4.3.1 applies a broad range of contemporary and appropriate tools, materials and techniques with competence in the development of design projects
- 4.3.2 demonstrates responsible and safe use of a range of tools, materials and techniques in each design project
- 4.5.1 applies management processes to successfully complete design projects
- 4.5.2 produces quality solutions that respond to identified needs and opportunities in each design project
- 4.6.1 applies appropriate evaluation techniques throughout each design project.

#### Criteria for assessing learning

Students will be assessed on their ability to:

- produce an effective and entertaining animation
- demonstrate technical skill and expertise when using animation software
- demonstrate safe and responsible use of the computer
- produce an animation demonstrating an understanding of environmental and sustainability considerations
- evaluate the project.

## Dimensions of the Quality Teaching Framework

Coded by Dr Wendy Amosa, Lecturer and Director, Centre for Professional Learning in Education,  
Faculty of Education and Arts, The University of Newcastle

	Code	Descriptor
<b>Intellectual Quality</b>		
Deep knowledge	5	The unit requires sustained focus on key concepts and ideas concerning custodianship, country, dreaming stories, traditional technologies and requires clear articulation of the relationships between and among these concepts.
Deep understanding	4	A substantial part of the unit requires students to provide information, arguments or reasoning that demonstrate deep understanding.
Problematic knowledge	3	The unit requires knowledge to be treated as socially constructed, with multiple perspectives addressed, such as the difference in the importance of the land as perceived by Aboriginal people and today's Australian population.
Higher order thinking	4	A substantial portion of the unit requires students to demonstrate higher-order thinking. This is evident, for example, in the completion of the flying boomerang experiment and the animation of their journeys.
Metalinguage	4	The unit requires students to make substantial reference to language and how it works. Metalinguage is evident, for example, in the creation of a definition of custodianship, discussion of key terminology of the task; meaning of 'country'; meaning of 'sustain'; and the meaning of 'looking over country'.
Substantive communication	5	The unit requires students to produce an elaborate, sustained and coherent clarification of complex ideas, concepts or arguments directly related to the substance of the topic. Examples of substantive communication include the class discussion of meaning of 'custodianship' and the footprints discussion.
<b>Quality Learning Environment</b>		
Explicit quality criteria	4	Clear statements are made regarding the quality of work and there is some elaboration of what it means to do well. This was evident by the students' consideration of the quality of their animation according to specified guidelines and the student discussion of how their projects met the quality criteria.
High expectations	5	The unit presents serious challenges to all students, and encourages them to take risks in demonstrating their learning. The risks are particularly evident through the exposure of their work on the wiki site.
Student direction	3	Students are able to exercise some control in relation to the design brief for their projects.

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	<b>Code</b>	<b>Descriptor</b>
<b>Significance</b>		
Background knowledge	4	Students' within-school background knowledge is elicited regularly throughout the unit, is connected to the substance of the unit, and includes connection to out-of-school background knowledge, such as drawing on students' prior knowledge of dreamtime stories.
Cultural knowledge	4	The unit requires students to include substantial recognition and valuing of cultural knowledge, and to challenge the framework of the dominant culture in terms of ways to sustain and be custodians of the land.
Knowledge integration	4	The unit requires students to make several meaningful connections between topics and the cross-KLA link between Aboriginal studies, geography, history and IT.
Connectedness	5	The unit requires students to recognise and explore connections between classroom knowledge and situations outside the classroom in ways that create personal meaning and highlight the significance of the knowledge. This is evident by the footprints discussion of students' school context; discussion of what the students' hands can do to sustain the local environment; and posting of final class evaluation re the sustainability of their local community on the Wiki site provides an audience for the students' work.
Narrative	5	The narrative of the time travel situation is integral to the requirements of the unit. Other use of narrative include: dreamtime stories; focus on stories that are being told in the jig-saw activity; and the storyboard activity.