Nudgee Beach Curriculum Framework
and
Pedagogical Framework
Focusing on the juncture between the Pedagogy of disequilibrium and a Place based Pedagogy

In, about and for a sustainable marine environment: to foster values connecting self, others and Place
Melbourne Declaration on Educational Goals for Young Australians signed in 2008 states the following goals:

State Support
Supporting DETE’s Strategic Plan
Roles of O&EECs
Strategic Direction
Belief
Values
Principles
Functions of O&EECs
Models of Operation
  - Destination: Teachers, students and communities come to Centres to experience high quality specialist programs.
  - Expert: O&EECs visit schools to extend student learning & deepen professional development by building on destination experiences.
  - Partnership: O&EECs work together with schools and communities to maximize destination & expert experiences in order to achieve mutual goals over a longer time period.
Commitment
Approach by O&EECs
  - Literacy and Numeracy
  - Centre programs will provide opportunities for students to demonstrate a range of literacy and numeracy indicators located within the day:
  - Speaking and listening
Teaching and Learning Models
  - Active and Informed Citizenship
  - Multi-Literacy
  - Environmental Literacy
Curriculum Organisation
Global Learning Outcomes
Curriculum Delivery
Pre-visit Planning Process
The Learners are Active Participants
Time allocation
Professional Development
Safety
Resources
Materials for teachers
Equipment and materials
Assessment
Assessment of learning
Assessment as learning in some cases the experiences at the centre will become part of the formative assessment collected towards the final piece on the topic. Centre staff will work closely with visiting teachers for this to be aligned to the criteria and tasks set for students.

Assessment for learning

Pedagogy – Four + One = Five ...(The 5th Pedagogy) Learning Beyond the Classroom

Influencing Documents

APPENDIX 1

Elements of the Fifth Pedagogy (As identified by UQ researchers)

APPENDIX 2

Recognised Dimensions and Strategies of Productive Pedagogies

Focus Questions

Higher-order thinking requires students to manipulate information and ideas in ways that transform their meaning and implication. This transformation occurs when students combine facts and ideas to synthesise, generalise, explain, hypothesise or arrive at some conclusion or interpretation, Manipulating information and ideas through these processes allows students to solve problems, gain understanding and discover new meaning.

APPENDIX 3

Science Model

APPENDIX 4

Integrating ICT

APPENDIX 5

Personality Types
Foreword
According to the Education (General Provisions) Act 2006 section 13

“The Minister may establish institutions at which the State provides educational instruction to persons enrolled at State schools as an adjunct to the educational programs provided to the persons at the State schools, including, for example—
(a) environmental education centres; and (b) outdoor education centres.

Nudgee Beach Environmental Education Centre (NBEEC) is one such Centre. The Centre was established in 1989 with the closure of the Nudgee Beach State School. The Centre provides services to client schools that cannot be delivered by the school community.

Pedagogical Model

Assessment FOR Learning

Self
Others
PLACE

Assessment AS Learning

Life learning in real places
- Attentiveness
- Real places
- Issues

Exploring local context and places
- Environmental narrative

Learning by Doing
- Attentive exploring and inquiry
- Connecting to people and places

Full Sensory mind and body engagement
- Caring for Self, Others and Place

Indigenous perspectives

Adventure and Challenge
- Disequilibrium
- Real life projects
- Reflection on learning
- Adventure

In, about and for a sustainable marine environment: to foster values connecting self, others and Place
The Pedagogical Framework at Nudgee Beach

Nudgee Beach is a tidal environment and therefore our working environment is shifting just like the sand on which we work. At low tide a large four kilometres by four hundred metre sand beach emerges while at high tide patches of sand peep between the fringe mangrove forests. Nudgee Beach EEC delivers learning experiences predominantly on this sand as well as in various other locations some with historical and cultural significance within the northern Moreton Bay side area. These environments include islands, beaches, bushland, mangroves, wetlands where staff and students interact with the plants and animals they contain on a day visit basis. The staff at the centre are very familiar with “the Place” in which they work experiencing these environments, their flora and fauna at different points in the lunar cycle; weather conditions; different times of the day and the year; using different stories and experiences to meet the needs of learners from different age levels and curriculum focuses. For many students these environments are foreign and provide a level of challenge that creates a level of disequilibrium originally described by Piaget and the focus of Outdoor Education as optimum for learning. The centre explores an expansive vision of sustainability and place with students using all four dimensions of productive pedagogy, and the additional ‘fifth’ dimension “Learning Beyond the Classroom” that moves beyond productive pedagogy, and is particularly suited to developing ‘learning for sustainability’.

Our Pedagogy is one reflecting the deep connections to place. It is holistic and encompasses indigenous perspectives both in content and as a way of seeing the world. It is multi-sensory; nobody goes to the beach without engaging their sense of smell; the visual impact of the beach; the feel and texture of the sand between your toes. Clients from preparatory years to year twelve and TAFE access the centre services. Students come to Nudgee Beach to go to the Beach; not the melaleuca wetlands or casuarina forest. They all think they are going to a Gold Coast type beach that is the mental image of beaches held by Australians so when they see Nudgee Beach they are not necessarily thinking that it’s that great. But, by the end of the day they have a buzz about what they have done and seen. Going out onto the beach one day hundreds of jellyfish are on the sand returning the next day and there’s hundreds of stingray holes instead. The life and what is there to attract students is continually changing and shifting. Our programs have to be able to not only reflect the capacity to book a school to come to the site three to six months in advance but to also be able to deal with the shifts and changes the environment and the weather of the day create. We are very much about the doing; whether they are five, ten or fifteen it about every child participating; every student must have their hands on the sand, on the equipment and engaged in the doing. If they have never pumped a yabby pump they don’t know how to do it or hold the animal they find. It is this newness, an unfamiliar context which creates the disequilibrium for the participant which we must both overcome and harness to engage them in the learning. Many students have never walked in wet shoes, our current obsession with cleanliness as a society means for many students it is the first time they have got “Dirty”. It’s a spiral curriculum informed by the classroom teacher and the initial interactions and conversations with students which assists in the assessment for learning. It’s a curriculum which has to accommodate the base level skills needing to be explained at every year level as well as the depth and complexity of learning required for senior classes at the same time. Because of the tidal nature our programs are designed in modules which can be interchanged to account for the tidal differences so students can engage in the modules in different order to accommodate the shifting tides. The intent is to focus on creating a non-competitive environment with students. It is this assessment as learning which focuses on skills, student performance and observation as assessment of learning: In, about and for a sustainable marine environment: to foster values connecting self, others and Place. The shifting sand with every tide assists to reduce the impact on the beach of this student engagement. The impact of three thousand students is continually monitored by staff. We continue to monitor our program delivery, the students learning and our impact though scientific analysis of which data comparing areas on the beach which are not within the green zones.
**International Context**

O&EECs incorporate the objectives of the United Nations Decade on Education for Sustainable Development (2005-2014) and the values and principles of the Earth Charter into their programs and services.

**National Alignment**

*Melbourne Declaration on Educational Goals for Young Australians signed in 2008 states the following goals:*

**Goal 1:** Australian schooling promotes equity and excellence

**Goal 2:** All young Australians become:
- Successful learners
- Confident and creative individuals
- Active and informed citizens

O&EECs promote and support schools in their journey to implement the principles of the National Curriculum and entwine the National Environmental Education Statement for Australian Schools – Educating for a Sustainable Future and the Australian Sustainable Schools Initiative and Health Promoting Schools program.

**State Support**

O&EECs support the ambitions and targets as set out in Towards Q2 Tomorrow’s Queensland, especially in relation to the Green, Healthy and Smart goals. O&EECs also support the regional implementation of the Queensland Environmentally Sustainable Schools Initiative (QESSI), Health and Well Being Framework, Health Promoting Schools, Values Education and Smart Moves.

**Supporting DETE’s Strategic Plan**

The priorities for 2012-2015 are aligned to the department’s P-12 Curriculum, Assessment and Reporting Framework, Learning and Wellbeing Framework and School Community Partnership Framework. The centre aligns with Education Queensland’s improvement agenda United in our pursuit of excellence which details the strategies that are being implemented across our system to ensure that every day, in every classroom, every state school student is learning and achieving within a safe, supportive, inclusive and disciplined learning environment. While committed to the corporate goals and priorities of DETE, O&EECs have expanded on specific strategic goals in the “United in our Pursuit of Excellence” specifically ‘laying strong educational foundations’ and ‘improving agility and sustainability.’ O&EECs strongly support the following corporate outcomes:

- ‘students to respect diversity and develop critical thinking and creativity skills that equip them to be global citizens in a sustainable world’ as well as environmental sustainability across DET’s services and business systems.’

**Roles of O&EECs**

- Implement policies on outdoor and environmental education and respond to priorities in accordance with the DETE Strategic Plan
- Deliver outdoor and environmental education programs to schools based on the National Curriculum, essential Learnings and Education Queensland’s Curriculum P-12 Framework to optimise learning outcomes for students
- Provide specific physical and specialist human resources for outdoor and environmental education for sustainability in response to the needs of students, teachers and school communities.
Strategic Direction

As a sector within DETE, O&EECs have identified specific goals that enhance the strategic direction of DETE. They are:

- **Pedagogy & Place** achieving deep learning for sustainability through connecting people with real places.
- **Personal & Social Wellbeing** supporting individuals to become healthy, active and happy citizens for a sustainable world.
- **Connected Communities** of like minded individuals and communities that work together to create a sustainable future, and
- **Productive Organisation** where O&EECs work as part of an innovative and growing organisation where people and systems deliver professional and business solutions to achieve the goals of the outdoor and environmental education sector.

Belief

Individuals have an impact on the environment. Australia faces an unprecedented challenge from climate change, water issues and species loss. There is a risk of losing our natural heritage, our rivers, landscapes and biodiversity. Action is required now to safeguard and shape our future prosperity.

Outdoor and Environmental Education Centres (O&EECs) believe that a “sustainable future” relies on developing understanding and action to address the inter-relationship between personal, social, economic and environmental issues that impact on our lives, our climate, and our biodiversity.

Education plays a key role in empowering people to work for a sustainable future. This includes developing personal and community health and wellbeing; understanding how each of us through our lives’ impacts on our natural environment; and developing the knowledge, skills and tools to make a difference and ensure a “sustainable world” for ourselves and future generations.

Values

O&EECs support the implementation of DETE’s strategic plan values of ‘environmental sustainability’ through their programs and services.

O&EECs also support the values as outlined in the Statement on Sustainability for All Queensland School – **enough for all for ever**, including:

- respect, care and compassion for ourselves, others and our environment
- responsibility for our actions
- integrity of all life on earth
- understanding and inclusion of all peoples and perspectives
- promotion of healthy lifestyles
- courtesy, consideration and cooperating with others

Principles
O&EECs base their operations on the principles of:

- protecting biological diversity and ecological processes
- taking a precautionary and anticipatory approach to decisions and actions
- striving for social and inter-generational equity
- encouraging and providing for community participation
- encouraging wise use of resources
- promoting participation as an active and informed citizen through life long learning for a sustainable world
- embracing creative and innovative approaches to environmental and social problems.

**Functions of O&EECs**

O&EECs provide programs and services that are based on three inter-connected models of operation that achieve optimum outcomes related to improved knowledge, values and behaviour related to learning for sustainability and personal and social wellbeing when they support & draw on each other.

**Models of Operation**

- **Destination:** Teachers, students and communities come to Centres to experience high quality specialist programs.

- **Expert:** O&EECs visit schools to extend student learning & deepen professional development by building on destination experiences.

- **Partnership:** O&EECs work together with schools and communities to maximize destination & expert experiences in order to achieve mutual goals over a longer time period.

O&EECs are diverse in their operations and delivery of programs and apply these three models in a variety of ways depending of location, program speciality and levels of resourcing to meet the specific needs of schools and community groups in the area of learning for sustainability and personal and social wellbeing.

**Commitment**

O&EECs will contribute to a sustainable society by working together in ways that respect Indigenous culture, customs and country and develop deep personal, social and environmental values. They will promote living and learning sustainability and the making of environmentally responsible decisions that will leave a positive legacy for future generations. They will support social and emotional wellbeing for their staff and clients.

**Approach by O&EECs**

O&EECs approach to sustainability is through:

- governance that supports sustainability policies, procedures and programs
- implementing curriculum that is developed and delivered on the principles of environmental education for sustainability
- providing social and emotional support for individuals and organisations
- developing partnerships, alliances and networks with government, communities, universities, TAFEs and business
• implementation and evaluation of strategies and actions to reduce the ecological footprint of schools, centres and DET
• facilities that demonstrate ‘best practice’ in ecological sustainable development principles

**Literacy and Numeracy**

Centre programs will provide opportunities for students to demonstrate a range of literacy and numeracy indicators located within the day:
- Speaking and listening
- Reading and viewing
- Writing and designing
- Measurement.

Students will obtain information which will provide opportunities to contextualise information and demonstrate these indicators via:
- Factual texts
- Oral presentations
- Procedural texts
- Reports
- Science journals
- Word walls.

Specific detail about how the literacy and numeracy indicators and links to QCAT’s essential learning can be demonstrated through specific programs are discussed with classroom teachers in the previsit phase, elaborated upon during the visit experiences and enacted on in the classroom at all phases of the learning experiences.

A constructivist view of learning recognises that students actively construct their own cognitive understandings within a social context. In response, teaching takes account of students’ views, ideas and scientific explanations as well as their level of cognitive development. In this school curriculum program, teachers are encouraged to provide opportunities for their students to explore and challenge their own ideas.

Underpinning constructivist theories of learning is the view that meaning is actively constructed within the learner’s existing framework. As a powerful reference for teachers, it acknowledges that learners interpret ideas in terms of their prior knowledge and experiences.

**Teaching and Learning Models**

**Active and Informed Citizenship**

The desirable attribute of active and informed citizenship is the core outcome of environmental education and involves developing sensitivities through the environment, understanding concepts about the environment, and fostering values that commit us to act for the environment. Changing communication technologies have given individuals and groups unprecedented access to information and new knowledge through multiple media. These multi-media technologies are international and intercultural and require students to not only master traditional forms of literacy but become multi-literate. Therefore, for a student to become an active and informed citizen, they must firstly become multi-literate.

**Multi-Literacy**

Multi-literacy is the flexible and sustainable mastery of a repertoire of practices with the texts of traditional and new communications technologies via spoken languages, print, and multimedia and the ability to use these practices in various social contexts and for a variety of purposes. Students need to not only understand the structures, codes and conventions of ‘texts’, but also the social nature of texts and how texts are constructed and reconstructed. Literacy 'is a meaningful practice (that) is always inherently bound up with some way or ways of being in the world.' (Literate Futures – Reading, 2002:24) Students must develop
an understanding of the personal, social and natural worlds, and how traditional and new communications technologies shape personal and social perceptions, values and ideologies.

**Environmental Literacy**

Literacy in an Environmental Education Centre context is about providing visiting students with appropriate opportunities to experience first-hand the natural ‘texts’ of the environment and be exposed to voice, sound and texts with different people and in different contexts. It is also about providing opportunities for students to enhance their personal repertoire of literacy skills, that they can draw upon, to actively participate in social situations, to influence people, access and critically analyse information, address environmental issues and design alternative futures.

### Curriculum Organisation

To achieve the stated purpose of schooling, and more specifically environmental education, the curriculum developed and learning experiences provided by Nudgee Beach Environmental Education Centre will be organised into three essential areas of learning:-

- learning **through** the environment
- learning **about** the environment
- acting **for** the environment

Embedded in all of the Centre’s curriculum programs will be explicit environmental literacy development practices that provide students with wide range of opportunities to build upon personal repertoires of literacy skills and where appropriate utilise new and varied forms of information and communication technologies to interact with the environment, to collect data, access information and critically analyse ‘texts’.

Each Centre program will identify ‘global environmental education outcomes’ that contribute to the achievement of the stated purpose of schooling and environmental education and have been guided by the following documents:-

- P – 12 Environmental Education Curriculum Guide
- Enough for All Forever
- 5 Citizens Framework
- Australian Curriculum Framework
- Curriculum into the Classroom (C2C) syllabus documents
- Literate Futures
- Futures Perspectives

### Global Learning Outcomes

The learning experiences provided by Nudgee Beach Environmental Education Centre assist students to work towards becoming individuals who:-

- value the natural environments at a local level and at a global level;
- can interact and communicate effectively and positively with others in a range of social contexts;
- are knowledgeable and understand the complexity of the interrelationships that exist between human, physical and natural systems;
- make lifestyle choices that are sustainable and limit impacts on the environment;
- actively investigate and address environmental issues; and
- are creative and able to reflect on their personal experiences.

The individual environmental education learning experiences that make up Centre programs are designed to help students work towards achieving some core and discretionary learning outcomes as identified in documentation from the Australian National Curriculum, Curriculum into the Classroom (C2C) and Key Learning Areas:-

**Australian National Curriculum**
All Centre programs optimise opportunities for students to experience the natural, social and built environments first hand. Learning experiences actively involve students in the investigation of environmental concepts as well as the interactions between the separate components of the environment. Programs provide opportunities for students to reflect on their learning experiences and the application of their learning in real life contexts at the Centre, school or in local communities.

**Curriculum Delivery**

The planning of each excursion program is done in collaboration with the class teacher and this process responds to the individual learning needs of the students. As the excursion program is developed, appropriate teaching strategies are identified to meet the learning needs/ styles of the specific student group and the assessment and reporting requirements of the visiting teacher/school. This process is supported by the Centre’s curriculum plan and Education Queensland syllabus documents, established curriculum programs at the Centre, quality environmental education resources and combined experience of Centre staff.

Global and core learning outcomes will be detailed in Centre publications and provided to class teachers to select excursion programs appropriate to the needs of the students utilising Centre services.

**Pre-visit Planning Process**

After confirmation of planned excursions, class teachers undertake pre-excursion planning sessions with Centre staff. This planning process involves the identification of core learning outcomes for the excursion and the selection of teaching strategies and learning experiences that respond to the individual learning needs of students and school curriculum plans.

The selection process is informed by:-

Appendix 1-Science model

Appendix 2 –Integrating ICT /Digital Pedagogy

Appendix 3 –Personality Types

**The Learners are Active Participants**

The centre understands that for learners to be active participants, they;
- understand that the knowledge they have will influence their current learning, and are prepared to challenge their own beliefs and the beliefs of others
- recognise that understandings are dynamic and can be modified
- take responsibility for their own learning

In effective science teaching, the teachers are active participants. They
- facilitate learning experiences, challenging students to think critically and creatively
assist learners to develop understandings by using clear unambiguous language to explain ideas
• plan learning opportunities to meet the needs of the students, and assist all students to achieve the intended learnings.

Time allocation

The environment in which the centre operates is predominantly tidal. This environment has inherent issues. Programming of learning experiences need to be set on an individual basis, day by day, to account for the changes in tidal level and times. Programs are therefore developed with a modular capacity to account for the tides.

Professional Development

O&EEC’s are proactive in developing, providing and coordinating professional learning for both their own staff and those of school. Nudgee beach EEC has lead the creation of Bay side Centre term based professional development. Centre staff have developed personal networks both within the centres and schools to support the continued improvement and refinement of pedagogy.

Safety

The centre operates in an environment with multiple risks. The curriculum risk assessment of programs often has significant implications for learning. Staff ratios, qualifications and knowledge sits outside the scope of a traditional educational facility.

Resources

Resources at the centre are designed to support the onsite programs as well as classroom practice for client schools. The centres library is narrow in focus but contains a wealth of resources on sustainability, marine ecology and wetlands habitats.

Materials for teachers

Our resource centre is both a borrowing library and a reference library to support client teachers and onsite research to support programs.

Equipment and materials

In an effort to assist those schools that are unsuccessful in acquiring an excursion and feel confident in conducting the program themselves, loans of the Centre’s equipment and resources are available.

Assessment

Assessment is at the heart of the learning and teaching process and in the school context has three distinct but related purposes:-

• Assessment of learning;
• Assessment as learning and
• Assessment for learning.

Assessment of learning focuses on the learning and teaching process and informs the teacher of learner development, effectiveness of pedagogies, and relevance of curricula and provides feedback to the individual learner about their personal progress and development.
Assessment as learning in some cases the experiences at the centre will become part of the formative assessment collected towards the final piece on the topic. Centre staff will work closely with visiting teachers for this to be aligned to the criteria and tasks set for students.

Assessment for learning focuses on judgements made by teachers about individual learners and the comparability of these judgements between teachers and across schools. The aggregation of these judgements is what is reported on and requires a sound evidential base to ensure confidence in judgements. A sound evidential base requires a variety of techniques and time to build.

In an Environmental Education Centre context students are on site for a short period of time, therefore, judgements made by Centre teaching staff about students’ achieving outcomes are valid for a limited range of tasks and response modes. In this light, it is inappropriate for Centre staff to assess specifically for reporting purposes.

However, excursions to Environmental Education Centres provide visiting teachers with a range of opportunities to make assessment judgements about their students. Teaching staff at Centres have an invaluable role to play in supporting them and their schools by providing quality commentary about individual learners and learning experiences. Tracking growth in Learning for Sustainability: key ‘Learning for Sustainability’ skills – preliminary definitions

Pedagogy – Four + One = Five ...(The 5th Pedagogy) Learning Beyond the Classroom

The effectiveness of the Centre’s curriculum programs is dependent upon the quality of teaching at the Centre. The strategies used by teaching staff at Nudgee Beach demand intellectual quality, connect the learner to the real world, imbed learning in real world contexts, recognise difference and support learners as individuals and as members of a social group.

Centre staff members use the Productive Pedagogies framework to design tools to assist staff teachers to reflect upon professional practice. These tools and strategies include peer monitoring, structured self-reflection and regular collegial discussions to ensure a range of productive pedagogies strategies are utilised when conducting activities.

See

Appendix 1- ways of working in the 5th Pedagogy
Appendix 2 –productive Pedagogy
Influencing Documents

P-12 Curriculum Framework Providing a curriculum to maximise the capacity of all students to exit from schooling with the capabilities and values to be active and responsible citizens.

Toward Q2: Tomorrow’s Queensland
Green Queensland – Taking action to reduce our state’s carbon footprint.
DET Strategic Plan 2009 – 2013 Supporting Toward Q2 by supplying young Queenslanders with the information and tools they need to reduce their carbon footprint

National Action Plan for Education for Sustainability
Equipping all Australians with the knowledge and skills required to live sustainably.

National Framework for Values Education in Australian Schools
Incorporating values into teaching programmes and developing student responsibility in local, national and global contexts.

Smart Classrooms
Engaging and motivating students through ICT curriculum integration.

Earth Smart Environmental Sustainability Strategic Plan 2008 – 2012 (Enough for all forever through caring for self, others and place.) Working towards an environmentally sustainable future at school and beyond, by educating for sustainability and empowering young people to be informed, responsible and active citizens. This strategic plan is informed by the United Nations resolution on the Decade of Education for Sustainable Development 2005 - 2014.

Earth Smart Science (ESS) Schools Program Assisting all Queensland primary school students to develop an understanding of environmental sustainability issues in order to help them monitor and reduce their own school’s ecological footprint

Tomorrow’s Citizens: Skills for Success in the 21st Century
Focusing teaching and learning on the building of knowledge and skills that are relevant and appropriate to the needs of the 21st century learner. Five Citizen Roles provide a focus for creating relevant and engaging learning and assessment opportunities: Eco-citizen; Creative citizen; Healthy citizen; Informed citizen; Democratic citizen.

Literacy – the Key to Learning Providing opportunities to develop intellectually challenging and connected learning opportunities across C2C syllabus and Key Learning Areas.

Melbourne Declaration on Education Goals for Young Australians 2008

Ballantyne R and Packer J 2006. Promoting Learning for sustainability Principal’s Perceptions of the Role of Outdoor and Environmental Education Centres

Ballantyne R and Packer J 2008. Learning for Sustainability: The role and impact of Outdoor and Environmental Education Centres, University of Queensland


Christensen L 2012. Learning from the Land University Press

Crimmson H 2012. Teaching in the Field University Press


Education Queensland 2009. Outdoor and Environmental Education Centres Strategic Plan 2009-2013

Education Queensland 2010. Charter for Outdoor and Environmental Education Centres
### APPENDIX 1

<table>
<thead>
<tr>
<th>Elements of the Fifth Pedagogy (As identified by UQ researchers)</th>
<th>Way of working with the Fifth Pedagogy</th>
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<tbody>
<tr>
<td><strong>Being in the Natural Environment</strong></td>
<td>Deep Reflective Responding</td>
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<tr>
<td></td>
<td>Deep reflective responding requires more than just remembering, recounting or reproducing knowledge and facts. Students must display the ability to reflect deeply and meta-cognitively on thinking, learning, actions and future directions in relation to themselves, others and place. At a higher level of reflection students will make inferences and draw conclusions regarding the relationship between concepts and their own life experiences, thoughts, behaviours and insights. At the very highest level they will demonstrate the ability to transform their ideas into personal theories and suggest application of their learning to other areas of their lives now and in the future. Connecting with the natural environment at through story, attentiveness and deep reflection.</td>
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<tr>
<td><strong>Life Learning in Real Places</strong></td>
<td>Attentiveness</td>
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<td></td>
<td>Being attentive in nature requires more than just remembering, recounting or reproducing knowledge and facts. It requires students to show evidence of noticing fine detail, patterns, or interconnections between different aspects of nature. At a higher level of attentiveness students will show evidence of vividness and heightened sensory mind body awareness in their response to nature. At the very highest level they will demonstrate emotional response and changing personal awareness of their own place in nature as part of a wider community of life. Life learning through interactive stories set in real places and exploring real-life environmental issues.</td>
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<tr>
<td><strong>Full Sensory, Mind &amp; Body Engagement</strong></td>
<td>Caring for Self, Others and Place</td>
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<tr>
<td></td>
<td>Caring for self, others and place requires more than just remembering, recounting or reproducing knowledge and facts about values. It requires students to show caring and respect for self, others and place in their decisions and everyday actions. At a higher level of caring and respect students will consider the interests of the wider community of life in their everyday actions. At the very highest level they will demonstrate the values of caring and respect for self, others and place in a highly interconnected and practical manner that directs their everyday actions and their future decisions. Full sensory, mind and body engagement through story, drama and attentiveness.</td>
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<tr>
<td><strong>Exploring Local Contexts &amp; Places</strong></td>
<td>Environmental Narrative</td>
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<td></td>
<td>Using environmental narrative (story) requires more than simply recounting or responding to an environmental story. It</td>
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</table>
requires students being able to analyse and think about the problems and conflicts inherent in the narrative and then to finish the story in a way that resolves internal conflicts. At a higher level, students will show evidence that they are able to use the story as a reflective tool to make judgements about knowledge themselves, their relationships with others and the way they connect to the environment. At the very highest level they will use the story to deepen their own reflection and thinking about their own sense of ecological identity, responsibility and connection to nature.

Exploring **local contexts and places** to identify environmental problems and issues.

<table>
<thead>
<tr>
<th>Learning By Doing</th>
<th>Learning by doing <strong>connecting to people and places</strong>, and through hands-on <strong>attentive exploring and inquiry</strong>.</th>
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</thead>
<tbody>
<tr>
<td>Adventure &amp; Challenge</td>
<td>Take part in an interactive <strong>adventure</strong>, then meeting the challenge to <strong>reflect on learning</strong> and undertake a <strong>real-life project</strong> to make life better in a local, natural environment.</td>
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## APPENDIX 2

### Recognised Dimensions and Strategies of Productive Pedagogies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Focus Questions</th>
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<tbody>
<tr>
<td><strong>Higher-order thinking</strong></td>
<td><em>Higher-order thinking</em> requires students to manipulate information and ideas in ways that transform their meaning and implication. This transformation occurs when students combine facts and ideas to synthesise, generalise, explain, hypothesise or arrive at some conclusion or interpretation. Manipulating information and ideas through these processes allows students to solve problems, gain understanding and discover new meaning.</td>
</tr>
<tr>
<td><strong>Deep Knowledge</strong></td>
<td><em>Deep knowledge</em> establishes relatively complex connections to central ideas of a topic or discipline, which are judged to be crucial.</td>
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<tr>
<td><strong>Deep Understanding</strong></td>
<td>Students show <em>deep understanding</em> when they have grasped relatively complex relationships between the central concepts of a topic or discipline. They are able to solve problems, construct explanations and draw conclusions.</td>
</tr>
<tr>
<td><strong>Substantive Conversation</strong></td>
<td><em>Substantive conversation</em> is evident in classes where there is considerable teacher-student and student-student interaction about the ideas of a substantive topic; the interaction is reciprocal, and promotes coherent shared understanding.</td>
</tr>
<tr>
<td><strong>Knowledge problematic</strong></td>
<td><em>Recognising knowledge</em> as problematic involves an understanding that knowledge is constructed, and hence subject to political, social and cultural influences and implications.</td>
</tr>
<tr>
<td><strong>Metalanguage</strong></td>
<td><em>Metalanguage</em> - focussed instruction is evident when there are high levels of talk about the functions and influences of language. Topics include: talk and writing; how written and spoken texts work; specific technical vocabulary and words; how sentences work or don’t work; meaning structures and text structures; and issues around how discourses and ideologies work in speech and writing.</td>
</tr>
<tr>
<td><strong>Knowledge Integration</strong></td>
<td><em>Knowledge integration</em> is identifiable when knowledge is connected across subject boundaries, are subject boundaries do not exist.</td>
</tr>
<tr>
<td><strong>Background Knowledge</strong></td>
<td><em>Background knowledge</em> is valued when lessons provide explicit links with students’ prior experience. This may include community knowledge, local knowledge, personal experience, media and popular culture sources.</td>
</tr>
<tr>
<td><strong>Connectedness Beyond Classroom</strong></td>
<td><em>Connectedness</em> to the world is a measure of the extent to which the lesson has value and meaning beyond the instructional context, and exhibits a connection to the large social context within which students live.</td>
</tr>
<tr>
<td><strong>Problem-based Curriculum</strong></td>
<td><em>Problem-based curriculum</em> is characterised by lessons in which students are presented with a specific real, practical or hypothetical problem (or set of problems) to solve.</td>
</tr>
<tr>
<td><strong>Student Direction</strong></td>
<td><em>Student direction</em> is a measure of the degree to which students influence the nature of the activities they perform and the way in which they are implemented.</td>
</tr>
<tr>
<td><strong>Social Support</strong></td>
<td><em>Social support</em> is present in classes where the teacher supports students by conveying high expectations for them all. The teacher expects the students to recognise that it is necessary to take risks and try hard to master challenging academic work, that all members of the class can learn important knowledge and skills and that a climate mutual respect among all members of the class contributes to achievement by all.</td>
</tr>
<tr>
<td>Recognition of difference</td>
<td></td>
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<td>--------------------------</td>
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</tr>
<tr>
<td><strong>Academic Engagement</strong></td>
<td>Students demonstrate <em>academic engagement</em> when they are attentive, do the assigned work, and show enthusiasm for this work by raising questions, contributing to group tasks and helping their peers.</td>
</tr>
<tr>
<td><strong>Explicit Quality Performance Criteria</strong></td>
<td><em>Explicit quality performance criteria</em> are frequent, detailed and specific statements about what it is the students are to do to achieve. This may involve overall statements regarding requirements for successful demonstration of outcomes within a unit of work, or about performance at different stages in a lesson.</td>
</tr>
<tr>
<td><strong>Self-regulation</strong></td>
<td><em>Self-regulation</em> by students is high when teachers are not making, or not having to make, statements to discipline the students’ behaviour or movement.</td>
</tr>
<tr>
<td><strong>Cultural Knowledge</strong></td>
<td><em>Cultural knowledge</em> is valued when more than one cultural group is present and given status within the curriculum. Cultural groups may be distinguished by gender, ethnicity, race, religion, economic status or youth.</td>
</tr>
<tr>
<td><strong>Inclusivity</strong></td>
<td><em>Inclusivity</em> is the degree to which classroom practices intentionally acknowledge, support and incorporate students’ diverse background knowledge, experiences and abilities.</td>
</tr>
<tr>
<td><strong>Narrative</strong></td>
<td>The use of <em>narrative</em> in lessons involves an emphasis in teaching and in student responses on such things as the use of personal stories, biographies, historical accounts, and literacy and cultural texts.</td>
</tr>
<tr>
<td><strong>Group Identity</strong></td>
<td><em>Group identity</em> is manifested when difference and group identity are actively encouraged and recognised, while at the same time a sense of community is created. This requires going beyond a simple polit of tolerance.</td>
</tr>
<tr>
<td><strong>Active Citizenship</strong></td>
<td><em>Active citizenship</em> is evident when the teacher elaborates the rights and responsibilities of groups and individuals in a democratic society and facilitates their practice both inside and outside the classroom.</td>
</tr>
</tbody>
</table>
APPENDIX 3

Science Model
Children learn science best when they construct personal explanations for questions that they regard as important. Based on an inquiry-orientated teaching and learning model, students use their prior knowledge and literacies to develop explanations for their hands on experience of scientific phenomena. Students have opportunities to represent and re-represent their developing understanding. They are actively engage in the learning process. Students develop investigation skills and an understanding of the nature of science. The vital role of the teacher is to structure learning experiences that prompt important questions and guide the learners to valued insights.

Making the connections between what students already know and new information can be assisted through progression through five inter-related phases, known as the 5Es constructivist learning model:

- Engage
  The Engage phase is designed to spark students’ interest, stimulate their curiosity, raise questions for inquiry and elicit students’ existing beliefs about the topic. Students’ writing, drawing and talk provide an opportunity for the teacher to assess students’ prior knowledge, including any alternative conceptions. The teacher then takes account of students’ existing ideas when planning future learning experiences.

- Explore
  The Explore phase provides students with hands-on experiences of the topic’s science phenomena. Students explore ideas, collect evidence, discuss their observations and keep records such as science journal entries. The Explore phase ensures all students have a shared experience that can be discussed and explained in the Explain phase.

- Explain
  In the Explain phase students discuss and identify patterns and relationships within observations and develop scientific explanations. Students consider the current views of scientists and deepen their own understanding. Students develop a literacy product to represent their developing understanding. The representations enable the teacher to monitor developing understanding and provide feedback to learners.

- Elaborate
  In the Elaborate phase students plan and conduct an open investigation to apply and extend their new conceptual understanding in a new context. The teacher can use students’ reports of their investigation to assess the extent to which students have achieved the investigating outcomes for the unit.

- Evaluate
  In the Evaluate phase students reflect on their learning journey and create a literacy product to re-represent their conceptual understanding. The teacher can use evidence from this lesson to assess the extent to which students have achieved the conceptual learning outcomes for the unit.
APPENDIX 4

Integrating ICT

The Learning Place website contains many helpful and practical resources that can assist you in integrating ICT into Units. For example:

- **Tomorrow’s Citizens: Skills for success in the 21st Century**

  Four online units are currently available to preview or register to use. These include -

  - Eco-citizen unit – *Everything is connected* (Year 3 – Science and Sose)
  - Informed Citizen unit – *About thinking* (Years 4 & 5 – HPE and SOSE)
  - Creative Citizen unit – *I imagine* (Years 2 & 3 – Visual Art and English)


  - **Practical Ideas for Teachers** – These ten booklets provide practical, step-by-step examples of ICT activities across a range of year levels, key learning areas and student groups. To find them at the Curriculum Exchange Resource Centre, type 02246 into the Search box. Activities include –

    - Science (Life and Living) – *Life Cycle Animation*
    - The Arts (Drama) – *Our Australian History*

  - **Virtual Field Trips** (http://www.learningplace.com.au/cop/vft/) Virtual Field Trips enable students and teachers to share information about places they may not be able to visit in person.
### APPENDIX 5

#### Personality Types

<table>
<thead>
<tr>
<th></th>
<th>Wombats</th>
<th>Kangaroos</th>
<th>Dolphins</th>
<th>Eagles</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Needs</strong></td>
<td>Membership or belonging</td>
<td>Freedom to act on impulses</td>
<td>Meaning and significance</td>
<td>Mastery and self-control</td>
</tr>
<tr>
<td></td>
<td>Responsibility or duty</td>
<td>Ability to make an impact</td>
<td>Unique identity</td>
<td>Knowledge and competence</td>
</tr>
<tr>
<td><strong>Values</strong></td>
<td>Rules, regulations</td>
<td>Excitement, stimulation</td>
<td>Ethics, morality</td>
<td>Concepts, ideas</td>
</tr>
<tr>
<td></td>
<td>Conformity</td>
<td>Aesthetics</td>
<td>Authenticity</td>
<td>Progress</td>
</tr>
<tr>
<td></td>
<td>Security</td>
<td>Action</td>
<td>Self-actualisation</td>
<td>Intelligence</td>
</tr>
<tr>
<td></td>
<td>Stability</td>
<td>Variety</td>
<td>Unity</td>
<td>Logical consistency</td>
</tr>
<tr>
<td><strong>Talents</strong></td>
<td>Providing</td>
<td>Performing</td>
<td>Facilitating</td>
<td>Categorising</td>
</tr>
<tr>
<td></td>
<td>Protecting</td>
<td>Adapting</td>
<td>Revealing</td>
<td>Designing</td>
</tr>
<tr>
<td></td>
<td>Supervising</td>
<td>Promoting</td>
<td>Counselling</td>
<td>Marshalling</td>
</tr>
<tr>
<td></td>
<td>Monitoring</td>
<td>Operating</td>
<td>Mentoring</td>
<td>Organising</td>
</tr>
<tr>
<td></td>
<td>Logistics</td>
<td>Tactics</td>
<td>Diplomacy</td>
<td>Strategy</td>
</tr>
<tr>
<td><strong>Behaviours</strong></td>
<td>Responsible</td>
<td>Risk taking</td>
<td>Empathic</td>
<td>Analytical</td>
</tr>
<tr>
<td></td>
<td>Careful</td>
<td>Fast reacting</td>
<td>Inspiring</td>
<td>Problem solving</td>
</tr>
<tr>
<td></td>
<td>Meticulous</td>
<td>Impulsive</td>
<td>Impressionistic</td>
<td>Perfectionist</td>
</tr>
<tr>
<td></td>
<td>Past orientated</td>
<td>Present orientated</td>
<td>Future orientated</td>
<td>Infinite time orientation</td>
</tr>
<tr>
<td></td>
<td>Dependable</td>
<td>Restless</td>
<td>Involved</td>
<td>Absorbed</td>
</tr>
<tr>
<td></td>
<td>Economical</td>
<td>Love sensory pleasures</td>
<td>Spiritual</td>
<td>Theoretical</td>
</tr>
</tbody>
</table>

*References: Berens, AUS Identities*

Each temperament type engages with learning, teachers, environments, tasks and challenges from quite different angles, at different levels and for different lengths of time. It is this underlying knowledge of the different temperaments and our capacity to readily identify the associated behaviours of students from the outset that we bring to the curriculum mix and allows us to differentiate teaching and learning.