Environment

Education for sustainability

Environment Centres
TEACHERS GUIDE

1724-01

www.moretonbay.qld.gov.au | Phone 3205 0555

Moreton Bay Regional Council

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Council supports sustainable schools

The Moreton Bay region has a diverse and expanding community with varying degrees of connection to our unique environment.

The *Education for Sustainability* program exists to ensure the high quality living environment in which residents and visitors to our region have come to expect is maintained and enhanced.

A strong and healthy environment supported by our community members engaged in sustainable practices will continue to provide the environmental, scientific, social, recreational, cultural, spiritual, scenic, health and economic benefits that make Moreton Bay region the place we want to live and learn in.

Our school programs focus on key values identified by residents of the Moreton Bay region, including:

- maintaining and enhancing a healthy natural environment;
- quality recreation and cultural opportunities; and
- healthy and supportive communities.

All participants gain new skills and knowledge on biodiversity, regional ecosystems, catchments and marine environment, energy conservation, climate change and sustainable living.

We encourage all schools to book into these quality, hands-on field investigations, presentations and education packages, delivered at education centres, and nearby natural areas by education professionals and dedicated volunteers.

You are invited to learn and explore!

All schools in the Moreton Bay Regional Council area can access a range of free or low cost environment and sustainability education programs at the following environmental education centres. Visit the environmental education centres website at www.moretonbay.qld.gov.au/environmentaleducation.

Osprey House Environment Centre

Dohles Rocks Road, Griffin

Booking details: Any Tuesday or Wednesday during school hours. Some activities will incur a cost for facilitators (as listed).
Phone the coordinator on (07) 3886 4463 or 0417 627 039 or
email **kim.pantano@moretonbay.qld.gov.au**

Kumbartcho Sanctuary Environment Centre

15 Bunya Pine Court, Eatons Hill

Booking details: Any Tuesday, or Wednesday during school hours. Some activities will incur a cost (as listed).
Phone the coordinator on 0417 627 039 or
email **kim.pantano@moretonbay.qld.gov.au**

CREEC Environment Centre

150 Rowley Rd, Burpengary

Booking details: Please contact CREEC for available days and costs.
Phone the coordinator (07) 3888 8751 or
email **Wayne.Marsh@moretonbay.qld.gov.au**

PetSmart hands-on presentations and lessons

Booking Details: Please complete the online school or community group booking form on our teacher's web page www.moretonbay.qld.gov.au/petsmart-teachers
Phone (07) 3205 0555 or email **petsmart@moretonbay.qld.gov.au**

Bookings Essential

Osprey House Environment Centre

Address: Dohles Rocks Road, Griffin
Phone/fax: (07) 3886 4463
Email: kim.pantano@moretonbay.qld.gov.au
Website: www.ospreyhouse.asn.au

Year levels: Prep onwards

Duration: Half day or full day trips available

What's on offer?

Osprey House is an educational and environmental facility situated amongst the mangroves of Dohles Rocks in Hays Inlet. The centre has several established education programs that have been designed to accommodate all year levels and involve a number of different activities.

Important information

Osprey House's education programs are provided by Moreton Bay Regional Council. The length of the program can be tailored to suit the needs of the group, full and half days are most common. Trained Osprey House volunteers and Council education officers present the activities. Insect repellent, hats, and sunscreen are important when visiting Osprey House as many of the activities are held outside and mosquitoes can be present. Toilets, a picnic area and BBQ facilities are available along with a large bus parking and turning area.

Kumbartcho Sanctuary Environment Centre

Address: 15 Bunya Pine Court, Eatons Hill
Phone/fax: 0417 627 039
Email: kim.pantano@moretonbay.qld.gov.au
Website: www.kumbartcho.org.au

Year levels: Prep onwards

Duration: Half day or full day trips available

What's on offer?

Kumbartcho Sanctuary is an educational and environmental facility situated on the banks of the South Pine River. The centre has several established education programs that have been designed to accommodate all year levels and involve a number of different activities.

*Students from prep to grade 3 will be guided by the centre coordinator.
*Students from grades 4 to 7 will conduct a "Kumbartcho - Environmental Investigation".

Important information

Kumbartcho Sanctuary's education programs are provided by Kumbartcho Sanctuary volunteers. The length of the program can be tailored to suit the needs of the group, half days are most common. Trained volunteers and Council education officers present the activities. Insect repellent, hats, and sunscreen are important when visiting Kumbartcho Sanctuary as many of the activities are held outside and mosquitoes can be present. Toilets, a picnic area and BBQ facilities are available.

Caboolture Region Environment Education Centre (CREEC)

Address: 150 Rowley Rd, Burpengary
Phone: (07) 3888 8751
Email: wayne.marsh@moretonbay.qld.gov.au
Website: www.creec.org.au

Year levels: Prep onwards

Duration: Half or full day visits available

What's on offer?

CREEC offers a range of informative and engaging programs catering for different age groups. All the programs are designed to complement existing units that teachers are implementing in the classroom.

Important information

CREEC's education programs are provided by CREEC volunteers and Moreton Bay Regional Council. The programs are tailored to suit different academic levels and can vary in length from half to full days. Trained volunteers and council education officers present the activities. Students will need to wear closed in shoes, broad brimmed hat and sunscreen. Insect repellent should also be brought along to CREEC as many of the activities are held outside and mosquitoes can be present.

Toilets, a picnic area and BBQ facilities are available along with a large bus parking and turning area.

PetSmart

Location: Program is presented at your school
Phone: (07) 3205 0555
Email: petsmart@moretonbay.qld.gov.au
Website: www.moretonbay.qld.gov.au/petsmart-teachers

What's on offer?

Moreton Bay Regional Council's PetSmart Program is an interactive education program for all primary and secondary schools of the Moreton Bay Region.

The PetSmart Team presents an exciting interactive educational program with lessons linked to Australian Curriculum learning areas of Science, Geography, Health and Physical Education, Civics and Citizenship. Within these learning areas there are opportunities to incorporate several general capabilities including literacy, numeracy, critical and creative thinking, personal and social capability and ethical behaviour. The cross-curriculum priority of sustainability is also strongly present in the Program.

The Program provides year level appropriate experiences to reinforce key messages regarding interactions between pets, humans and wildlife, responsible pet ownership, and the role of local laws in protecting pets, the community, and the local environment.

Important Information:

Book online now at our teacher's page www.moretonbay.qld.gov.au/petsmart-teachers.

Dog bites are serious. 70% of bites to children cause facial injuries and over half the dog attacks we deal with are people less than 12 years of age.

The long-term goal, through education and awareness, is to encourage the community to be 'PetSmart', to be responsible pet owners and to respect all animals.

Our program teaches children they have to FREEZE - stand up tall, look at their shoes and hide their fingers which look like "sausages". The children remember the "sausages" and hopefully the rest will follow.

PetSmart has created a song to assist children learning a fun way to retain important information through movement and music. The creation of this song is a great opportunity to promote dog safety and reinforce the messages to children and their parents.

This song is available to listen to on our website, along with the lyrics.

Engaging environmental walks, talks & presentations

At Environment Centres

Living with the Environment

- LE 1 - Bird Watching & Identification
- LE 2 - Catchment Story and Water Pollution
- LE 3 - Endangered Species
- LE 4 - Erosion
- LE 5 - Exploring Osprey House
- LE 6 - Going Potty
- LE 7 - Let's get active about Waterways
- LE 8 - Litter Surveys
- LE 9 - Nature Walk
- LE 10 -Nest Box Workshop
- LE 11 -Stream Habitat Health
- LE 12 -The Insect World
- LE 13 -The Living Mangrove & Web of life
- LE 14 -Threats to Our Oceans
- LE 15 -Where have the Dugongs gone?
- LE 16 -Up the Creek and Down the Drain
- LE 17 - Wild About Wildlife
- LE 18 - Yali Moyum Aboriginal art walk

Sustainability Investigations

- SI 1 - Native Plants – Why we need them
- SI 2 - Reduce, Reuse, Recycle
- SI 3 - Renewable Energy
- SI 4 - Sustainability Tour
- SI 5 - Urban Water Cycle and Water Saving
- SI 6 - Worm Farm & Composting

PetSmart

- PS 1 - Being PetSmart
- PS 2 - PetSmart goes WILD

Other topics and high school projects can also be accommodated. Please discuss your specific class needs during booking.

LE 1 - Bird Watching & Identification

Location: Bird Hide and Lookout at Osprey House.

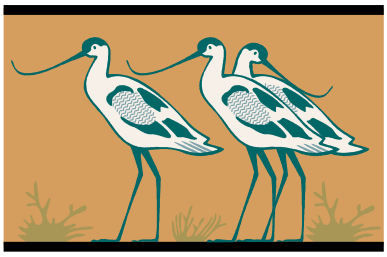
A guided bird watch and discussion on the unique bird life of the Dohles Rocks wetlands.

Objectives:

- To give students the opportunity to use binoculars and telescopes for fieldwork.
- To allow students to observe and identify birds of a wetland environment including such information as:
    - Features.
    - Types.
    - Identification.
    - Other animals living there.
- To provide students with the opportunity to explore the wetlands for wildlife in an environmentally sensitive way.

Equipment provided:

- Binoculars.
- Telescope.
- Bird Identification chart (data sheet).
- Student Worksheet.



Students to supply

- Pencils/pens.
- Clipboard.

Learning Experiences:

1. Students walk to the bird hide where some typical wetland birds are identified with reference to the chart and their own sheets. Data sheets are explained.

2. Students observe by naked eye, by binoculars and/or by telescope birds visible in the vicinity and record their activities on the sheets provided.

3. Characteristics of wetland birds are discussed as features are observed (e.g. beak shape). Discussion of how these features assist the bird's activities.

4. Students observe the resident birds including the Osprey through live webcam.

Possible Follow-up: Visit at other times of year. Do the numbers/types of birds change?

LE 2 - Catchment Story and Water Pollution

Location: Osprey House veranda, Kumbartcho Barn or CREEC.

A fun demonstration and discussion on the impact and prevention of pollution in our local waterways. This lesson creates a lasting impression on students through a very visual interactive story.

Objectives:

For students to be able to:

- Explain what a catchment is.
- Understand the process of the water cycle.
- Identify sources of pollution into a catchment and the impact pollution has on waterways.
- Propose ways to improve the health of a catchment.
- Understand that stormwater drains flow directly to the local waterway.

Key Focus:

- What are catchments?
- Water Cycle.
- Main uses of catchments.
- Catchments in South East Queensland.
- Story of a catchment – Impacts on catchments.
- Ways to improve the health of a catchment.

Equipment provided:

- Presenter supplies materials for 'Story of a Catchment'.
- Map/catchment model.

Learning Experiences:

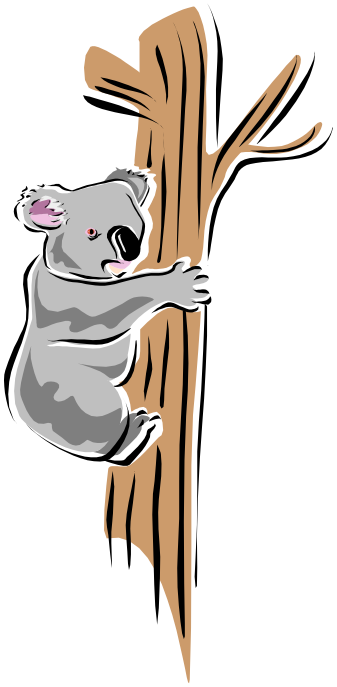
1. A catchment and the different features found in a catchment are explained to students.
2. Presenter presents the 'Story of a Catchment' using a large model to represent a catchment. Students are given a type of land use they will represent and when the land use is mentioned they are informed to drop contents from the film canister into the model of the catchment.
3. After reading the story, the presenter will summarise main land uses and human impacts on catchments.
4. Students discuss ways they can help to improve the health of a catchment. Presenter outlines how catchments are managed to ensure they are kept healthy.

LE 3 - Endangered Species

Location: Osprey House, Kumbartcho Sanctuary or CREEC

Objectives:

- Students will identify a number of local fauna and flora species which are either endangered or under threat in this region.
- Students gain an understanding of why these species are under threat and identify ways that can improve species numbers.



Equipment provided:

- Examples of endangered species of the local area.
- Worksheet.

Students to supply:

- Pen/pencil.
- Clipboard.

Learning Experiences:

1. Supervisor outlines briefly, what is an endangered or threatened species?
2. Supervisor identifies local fauna and flora species which are endangered or threatened.
3. Students, through discussion, identify reasons as to why these species are vulnerable around the area.
4. Students, through discussion, identify changes that we can all make to help these species survive.

LE 4 - Erosion

Location: Kumbartcho Sanctuary and South Pine River, or CREEC.

Objectives:

- This presentation aims to extend students'.
- Knowledge of what is erosion, what causes erosion, different types of erosion and how we can all make a difference.

- Students gain an understanding as to the importance of native plants in our natural environment in relation to erosion and view erosion in the natural environment.

Equipment provided:

- Worksheet.

Students to supply:

- Pen / pencil.
- Clipboard.

Learning Experiences:

1. Supervisor outlines briefly a definition of erosion and the different types of erosion that can occur.
2. Students gain awareness of the 3 natural forces which cause erosion.
3. Students work through an activity highlighting the actions of people which leaves the earth vulnerable.
4. Students are taken for a guided walk through the bushland habitat at Kumbartcho and the South Pine River or CREEC Environment Centre and become more familiar with a variety of areas where erosion has occurred.

LE 5 - Exploring Osprey House

Location: Osprey House (Prep to Grade 3).

Supervisor: Education Officer or Environmental Centre Volunteer.

Objectives:

- For students to interact with the displays in the environment centre and gain a hands on understanding of the features of the mangrove wetlands and local fauna and flora species.

Equipment provided:

- Workbook.

Students to supply:

- Pen / pencil.
- Clipboard.

Method:

1. Students explore the environment centre.
2. Students use the interpretative displays to answer questions and draw features of the centre which interests them.
3. Students interact with the touch and tell table displays and see a working worm farm.
4. Students gain a stronger understanding of the relationships and the impacts which will occur due to changes to the natural environment through human impact.

LE 6 - Going Potty

Location: Pine Rivers Community Nursery (Kumbartcho Sanctuary).

Objectives:

- Students will gain an understanding of the processes involved in the propagation of native plants.
- Students gain an understanding of the importance of native plants in our natural environment.
- Students gain awareness that loss of vegetation is not easily replaced.

Equipment provided:

- Worksheet.
- Native plant seeds.
- Tube stock plant.
- Potting mix.

Students to supply:

- Pen/pencil.
- Clipboard.

Learning Experiences:

1. Supervisor outlines briefly the processes involved in the propagation of native plants. These include seed collection, preparation, sowing and pricking out.
2. Supervisor guides the students through sections of the community nursery highlighting the differences between each section and why the plants must pass through each section to survive.
3. Students pot up a native plant to take back to home/school.
4. Students are taken for a guided walk through the bush land habitat at the centre and become more familiar with a variety of native plant species and their importance to biodiversity.

LE 7- Let's get active about Waterways

Location: CREEC

This program involves students testing the water quality of the nearby creek. Students will test for temperature, pH, turbidity, salinity and other nutrients and assess from tests undertaken the health of the waterway. Students will also be involved in assessing the health of the stream habitat. The program is linked with the 'Stream Habitat Health'.

Key Focus:

- Aspects of Water Quality.

Objectives:

For students to:

- Gain knowledge and skills of water quality sampling techniques.
- Identify indicators that are used to determine the health of a waterway.
- Draw conclusions to the health of the waterway through water quality tests undertaken.

Equipment provided:

- Water testing kit.
- Containers.
- Water Quality Recording Sheet.

Students to supply:

- Pencil/Pen.
- Clipboard.

Learning Experiences:

1. Supervisor gives students a health and safety talk before guiding them to the nearby creek.
2. Supervisor will outline the following aspects:
   - The importance of testing water quality.
     - Sources of pollution which impact a waterway.
     - Water quality indicators.
3. Demonstration of water quality testing will be conducted. Students will be given the opportunity to participate in testing the water.
4. Students rate health of waterway based on results collected.
5. Supervisor provides recent water quality results of nearby waterways from council and healthy waterways monitoring program and leads a discussion to compare with student results

LE 8 - Litter Survey

Location: Osprey House.

Objectives:

- Students will gain an understanding of the types of rubbish that litter our wetland areas and discuss some of the impacts of this rubbish.
- Students gain an understanding of the different places litter may come from.

Equipment provided:

- Litter survey form.

Students to supply:

- Pen/pencil.
- Clipboard.

Learning Experiences:

1. Supervisor outlines briefly that litter comes in various forms (paper, glass, metal etc).
2. Supervisor outlines that litter can cause a range of problems including, harm to wildlife, aesthetics, germs, rodents, fire, human hazard (sharp items) etc.
3. Students predict some of the types of rubbish that they think may find around the area.
4. Students predict where they think the rubbish may have come from.
5. Students survey a designated area for litter and complete the “Litter survey” form attached.
6. Once the survey has been completed, the supervisor leads a discussion about the types of litter found, where they may have come from, how long they might have been there, etc (as per the “Litter survey” form).
7. Supervisor prompts students for solutions to the litter problem.

LE 9 - Nature Walk

Location: Nature Path/Boardwalks Osprey House (Prep to Grade 3)
Kumbartcho Sanctuary and CREEC (all grades).

Supervisor: Education Officer or Environment Centre Volunteer.

Objectives:

- For students to identify and understand the difference between ecosystems based on plant communities and identify the animal species which therefore inhabit them.

Equipment provided:

- Workbook.

Student to supply:

- Pen/pencil.
- Clipboard.

Method:

1. Students explore the boardwalks and nature paths of the environment centres.
2. Students explore different ecosystems and identify the plant species which inhabit each and adaptation that are in place to assist them in their survival
3. Students identify native animal species which are reliant on each ecosystem for food and shelter.
4. Students gain a stronger understanding of these relationships and the impacts which will occur due to changes to the natural environment through human impact.

LE 10 - Nest Box Workshop

Location: Bunnings Warehouse Carseldine (grade 4 onwards).
Supervisor: Bunnings Team member, Education Officer or Environment Centre Volunteer.

Objectives:

- To identify the importance of hollows in trees for native wildlife.
- For students to understand why “nest boxes” are important to native wildlife.
- Children will build a bird box to create habitat in the school or their home.

Equipment provided:

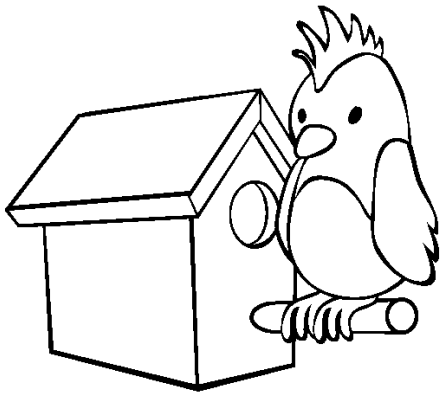
- Workbook.
- Materials and tools to build a bird box.

Student to supply:

- Pen/pencil.
- Clipboard.

Method:

1. Discussion with students as to how hollows are formed in the natural environment.
2. Students build a bird box.
3. Identification of why these can be used as a substitute to hollows.
4. Understanding gained of how native animal species utilise both hollows and nest boxes.



LE 11 - Stream Habitat Health

Location: Kumbartcho Sanctuary & CREEC**.**

Supervisor: Education Officer or Environmental Centre Volunteer.

Objectives:

- An interactive module focusing on the importance of vegetation and the presence of macro-invertebrates in determining the health of our waterways. Students will rate our stream habitat and discover hidden wildlife in water samples.

Equipment provided:

- Worksheets.
- Water samples.
- Magnifying glasses.
- Petri dishes.
- Macro-invertebrate identification chart.

Students to supply:

- Pen/pencil.
- Clipboard.

Learning Experiences:

1. Supervisor guides teams of students through the Stream Habitat Record sheet identifying:
    a) Bank Vegetation.
    b) Verge Vegetation.
    c) In Stream Cover.
    d) Bank Erosion and Stability.
    e) Riffles, Pools and Bends.
2. Students rate the stream habitat.
3. Supervisor presents students with a water sample from the river and students identify macro-invertebrates present in the sample and rate the water quality in the river.
4. Students are taken for a guided walk through the bush land habitat at the environment centre and become more familiar with the Riparian rainforest corridor.

LE 12 -The Insect World

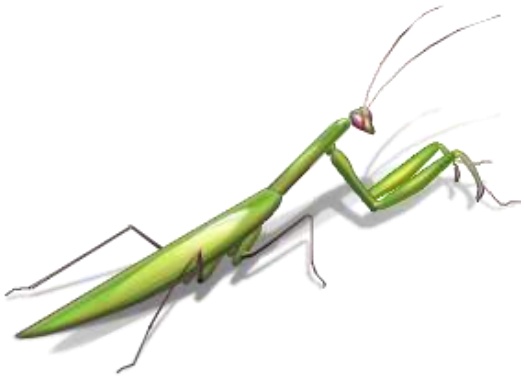
Location: Osprey House theatre, Kumbartcho Barn or CREEC.
Presented by Bugs Ed – Cost $5.00 per student.

Objectives:

- Students will learn about the fascinating hidden world of insects and minibeasts. Examine beautiful and bizarre specimens of insects, spiders, scorpions and other creepy crawlies from around the world. Then get up close and personal with some unique live Australian insects, such as giant stick insect, cool caterpillars and fearsome preying mantis.

- Study Streams available include:

  Secrets to Success.
  Insect Lifecycles.
  Endangered Insects.
  Days of our Hives.
  Friends or Foes .
  Predators and Prey .
  Amazing Ants.



Equipment provided:

- Activity Sheet.
- Sample insects.
- Live specimens.

Students to supply:

- Pen/pencil.
- Clipboard.

Learning Experiences:

1. Supervisor outlines the insect study stream selected by the school.
2. Supervisor explains the diversity of the insect world and highlights their importance to other animals as they are a vital food source.
3. Life cycles are presented and differences explained.
4. Students study samples of insects during session.
5. Students interact with live insects.

LE 13 - The Living Mangrove and the Web of Life

Location: Osprey House Amphitheatre.

Supervisor: Education Officer or Environmental Centre Volunteer.

Objectives:

- To raise student awareness of mangroves and the mangrove community, including such information as:
    - Fish Habitat Areas.
    - Relationships between fauna and flora species.
    - Adaptations.
    - Other animals living there.
- Web of Life -interaction between the natural and human environment.

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Equipment provided:

- Binoculars.
- Telescope.
- Mangrove identification chart.
- Mangrove food chain chart.

Students to supply

- Pens/pencils.
- Clipboard.

Learning Experiences:

1. At the Amphitheatre, students will sit and look out at the wetlands and discuss:
    a. What is a wetland?
    b. What are mangroves?
    c. What adaptations do mangroves have?
    d. Impacts on biodiversity by human action.

2. Students will walk along the boardwalk and identify:
    a. Types of mangroves and fauna species.
    b. Understand the relationships at all levels of our diverse environment.

LE 14 -Threats to our Oceans

Location: Osprey House theatre and veranda.

Supervisor: Education Officer or Environmental Centre Volunteer.

Objectives:

- This module is targeted at Prep-Year 3 students who gain a stronger understanding of the threats which face our marine life.
- Students create a 3D artwork each to strengthen their learning outcomes.

Equipment provided:

- Activity sheet mural.
- Sample of items that should not be in the ocean and their impact.

Students to supply:

- Pen / pencil.
- Clipboard.

Learning Experiences:

1. Supervisor outlines the things that impact on our oceans and the effects fauna and flora species.
2. Students are engaged to identify ways they can make positive change to reduce the impact of unwanted items.
3. Students create a 3D mural to emphasise the impact of foreign items in the ocean.

LE 15 - Up the Creek and Down the Drain

Supported by Healthy Waterways

Location: Caboolture Region Environmental Education Centre.

Supervisor: Education Officer or Environmental Centre Volunteer.

Objectives:

- Connection to place through 'deep, attentive listening' that engages all of the senses;
- Learning about the impact of litter on our waterways and oceans;
- Respect and care for our waterways through gaining knowledge and taking action;
- Becoming active and responsible members of our community;
- Finding sustainable ways of living; and
- Having fun through imagining and pretending.

Equipment provided:

- Pre visit resources sent to class in the form of Pete's letters and articles.
- Burpengary Creek story during visit.

Students to supply:

- Pen / pencil.
- Blank paper.
- Clipboard.

Learning Experiences:

1) Students experience an interactive story with an environmental education theme piece-by piece leading up to the creek visit (Pete's story as told via the letters he sends to the class);

2) Students explore the story characters and roles of Waterways investigators as they follow an inquiry framework and sequence of activities aimed at facilitating deep thinking, reflection, communication and local action (these activities link to a central excursion experience and can stretch over a whole term);

3) Students explore the CREEC environment Centre to complete the story thread and connect to the exciting environment of Burpengary Creek, brought to life by a conclusion to the story and engagement in onsite activities practicing attentiveness and reflection.

See http://healthywaterways.org/initiatives/cem/ucdd for more details.

LE 16 - Where have the Dugongs gone?

Location: Osprey House.

Supervisor: Education Officer or Environmental Centre Volunteer.

Objectives:

- To raise students' awareness of the impact of our actions on dugong.
- To provide interesting information to students about dugong (e.g. threats, appearance, characteristics).

Equipment provided:

- Life size dugong model.
- Dugong poster.
- Underwater photographs.

Students to supply:

- Pens/pencils.
- Clipboard.

Learning Experiences:

1. Students presented with information about dugong with the aid of a poster and the model.

2. Students learn Dugong facts and identify physical characteristic and adaptations.

3. Students take this information back to the classroom to use in the writing of a report about dugongs.

4. Students are engaged to discover how they can help this species which is diminishing in Moreton Bay and find out why it is in decline.

LE 17 - Wild about Wildlife

Location: Osprey House theatre, Kumbartcho Barn or CREEC.
Presented by Gecko Wildlife Presentations – Cost $5.00 per student.

Objectives:

- This experience stimulates children's' senses with a close-up and tactile encounter. We give the children the opportunity to touch animals wherever possible. Presentations are tailored to your needs and complement the Education Queensland curricula for Science – Life and Living Strand.

- Study Streams available include:
    - Wildlife Encounter.
    - Frogs.
    - Flying Foxes.
    - Animal Classification.
    - Adaptations.

Equipment provided:

- Activity Sheet.
- Live specimens.

Students to supply:

- Pen/pencil.
- Clipboard.

Learning Experiences:

1. Supervisor outlines the wildlife study stream selected by the school.
2. Supervisor explains the diversity of wildlife world and highlights their importance to our natural environment.
3. Life cycles, habitats and interactions are presented explained.
4. Students interact with live animals.

LE 18 - "Yali Moyum" Interpretative Plaques Aboriginal Artwork

Location: Osprey House boardwalk.

Supervisor: Education Officer or Environmental Centre Volunteer.

Objectives:

- To help students understand the interaction between the Aboriginal people and the natural environment.
- To help students understand the importance of particular environmental features along the boardwalk.

Equipment provided:

- Chalk/crayons.
- A4 paper, white or coloured (blue, green, yellow, pink, etc).

Learning Experiences:

1. Each student will be provided with 2 sheets of paper.
2. Students will place paper over the plaque and rub with chalk or crayons.
3. Supervisor discusses with the students the significance of the plaques and provides descriptive interpretation to the students highlighting the importance of the mangrove/wetland habitat to the Aboriginal people, and how they relied on the fauna and flora species for their everyday survival.
4. Students Grade 4-7 create a plaque rubbing and an experience a creative writing module which is collated into a book for further extension work at school.

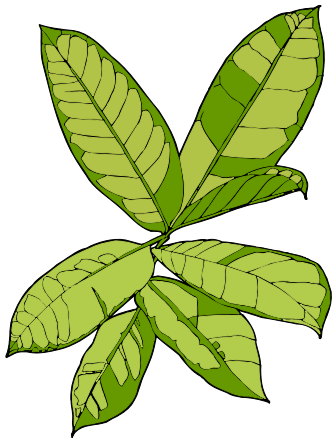
SI 1 - Native Plants – Why we need them

Location: Walks and paths - Osprey House, Kumbartcho and CREEC.

Supervisor: Education Officer or Environmental Centre Volunteer.

Objectives:

- For students to understand why "Native Plants" are the preferred plants to grow in our gardens.
- For students to understand the difference between the terms "Native Plants" and "Exotic Plants".
- What is a weed?



Equipment provided:

- A "Weed" poster.
- Book "Mangroves to Mountains".
- Potting mix and a native plant.

Students to supply:

- Pen/pencil.
- Clipboard.

Learning Experiences:

1. Can the students find any plants that are "weeds"?
2. Potting up a native plant to take home and grow in their own garden.
3. Supervisor to discuss:
    a. What is a plant?
    b. What is required to grow any plant?
    c. What is an Australian plant?
    d. What is a Native plant?
    e. What is an "Exotic Plant".
    f. Why are some exotics a poor choice? (Escapees into native bushland).
4. Would a mixture of plants be a better alternative for our gardens?
    a. Why is it better to grow Native plants?
    b. Drought tolerance.
    c. Adaptation to local soils.
    d. Attraction to local birds and animals as food source.

SI 2 - Reduce, Reuse, Recycle
What goes around comes back around

Location: Osprey House BBQ area, Kumbartcho Barn or CREEC.

Supervisor: Education Officer or Environmental Centre Volunteer.

Objectives:

- For students to understand the need for recycling.
- For students to understand what can be recycled.
- For students to realise that most food waste can be recycled as compost.

Equipment provided:

- Crate of artificial rubbish; paper, tins, bottles, variety of plastics, bones, 4 containers/ boxes.
- Booklets with relevant page Litter survey form.

Students to supply:

- Pen/pencil.
- Clipboard.

Learning Experiences:

1. Sort out the rubbish into food waste and recyclable.
2. Discussion:
   a. What can we do with food waste instead of binning it?
   b. What food cannot be put into a compost bin? – meat, bones, citrus and onion skins.
   c. Why should we be recycling?
   d. What effect is using up our natural resources going to have on the future of the world?
   e. If we recycle efficiently, how much waste should there be at the end of a week?
3. Students to write different types of garbage found at home in relevant column.
   Paper , Metal, Plastic , Food waste, Glass, Other.
4. What percentage of those things can be recycled?
5. What can we recycle at home?

SI 3 - Renewable Energy

Location: Kumbartcho Sanctuary, Osprey House or CREEC.

Supervisor: Education Officer or Environment Centre Volunteer.

Objectives:

- To gain an understanding of the difference between renewable and non-renewable energy and which energy sources full under each category.
- To identify why renewable energy sources are a more environmentally friendly alternative source of energy.
- To encourage students to formalise ideas of other sources of alternative energy.

Equipment provided:

- Model of solar-powered house.
- Model of wind-powered house.
- Model of water-powered house.
- Workbook.

Student to supply:

- Pen / pencil.
- Clipboard.

Method:

1. Identify with students the difference between renewable and non-renewable energies and which energy sources fit under each category.
2. Demonstrate all the house models working allowing students to take turns to interact with them.
3. Students identify the benefits or shortfalls of each type of energy.
4. Students are encouraged to identify ways to be energy efficient and other possible renewable energy sources.

SI 4 - Sustainability Tour
Business/Kumbartcho/School/Home

Location: Bunnings Warehouse Carseldine and Kumbartcho Environment Centre.

Supervisor: Bunnings Staff, Education Officer or Environment Centre Volunteer.

Objectives:

- For students to identify and understand what different strategies have been put in place to make different sectors of our community more sustainable.
- For students to identify if strategies embraced by one sector can be implemented in another sector.
- Identify the benefits of these strategies across all sectors.

Equipment provided:

- Workbook.

Student to supply:

- Pen / pencil.
- Clipboard.

Method:

1. Tour Bunnings Warehouse and document the different strategies that have been put in place to reduce the stores consumption of water, energy and materials.
2. What recycling strategies are in place?
3. What other ways does Bunnings try to act in a more sustainable manner?
4. Tour Kumbartcho and document strategies used to act in a more sustainable manner
5. Repeat exercise at school.
6. Repeat exercise at home.
7. In what ways are the different sectors acting the same or similarly?
8. Where are they acting differently?
9. Can any sectors learn and embrace opportunities that are performed by another sector?

SI 5 - Urban Water Cycle and Water Saving

Location: Osprey House, Kumbartcho Barn or CREEC.

Supervisor: Education Officer or Environmental Centre Volunteer.

Objectives:

- To build students understanding of the water cycle and the urban water cycle.
- To allow the students to understand the idea of water saving practices.
- To gain an understanding that water is a limited resource.

Equipment provided:

- Water cycle cards and poster.
- Buckets poster.
- Buckets.

Students to supply:

- Pencil and Clip Board.

Learning Experiences:

1. Discuss where water comes from – the water cycle.
2. Discuss how we use water and what would happen if we didn't have water.
3. Discuss the urban water cycle – how humans interrupt the cycle to ensure water supply to our communities, use the water, treat it and return it to the natural water cycle.
4. Discuss how we can change our behaviours and devices to save water.

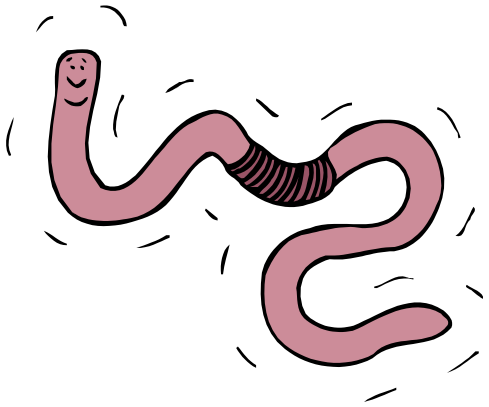
SI 6 - Worm Farm/Composting

Location: Osprey House veranda, Kumbartcho Barn or CREEC.

Supervisor: Education Officer or Environment Centre Volunteer.

Objectives:

- To introduce students to good gardening practices.
- To relate recycling to good gardening practices.
- Show how food waste can become a resource.



Equipment provided:

- Some examples of food and other items.
- The worm farm/compost bin.

Student to supply:

- Pen/pencil.
- Clipboard.

Method:

1. Students are each given two items and must identify whether they can be used for composting or should go elsewhere.
2. Why can only certain things go in the compost bin?
3. Why don't we put citrus skins, onion skins or bones in it?
4. How else can we reuse food scraps and paper?

Complimentary council programs and support for schools

	**ResourcEd Schools Waste Education** The Waste Education program supports the community with strategies to reduce the amount of waste produced and to find alternatives for a more sustainable lifestyle that reduces waste being disposed at landfills.
Travel Choice Fitter, Greener, Smarter	**Travel Choice** Travel choice encourages the community members to embrace more sustainable travel choices by: Promoting safe, healthy and connected communities; Reducing greenhouse gas emissions and traffic congestion; Connecting people and destinations. www.moretonbay.qld.gov.au/travelchoice .
LIVING SMART Homes Solutions Awards www.livingsmartqld.com.au	**Living Smart is Smart for Schools** The Living Smart program educates students and families about sustainable living. This is a great way to learn more about saving energy and water (and money in the process), making more sustainable choices and leaving our planet in good shape for our children. www.livingsmartqld.com.au . Energy efficiency kits are now available at the Caboolture or Strathpine libraries to provide students/community with lifelong skills to assess efficiencies and make wise choices to conserve energy.
	**Don Perrin Environmental Bursary** The Don Perrin Environmental Bursary of $2,000 is offered to assist a graduating student each year to be put towards the cost of environmental study at university. www.moretonbay.qld.gov.au/donperrinbursary .

Moreton Bay Regional Council