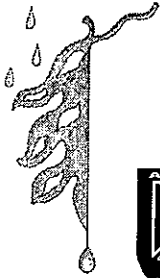


You can make a difference – Strategic Change in Primary School Environmental practice



Artwork by Lara Diaz



Educating for a
sustainable future
– Independent Education Union
Environmental
Conference 2009

Presenter: **Rose-Marie Hoekstra**
Principal – All Saints Catholic Primary
School Liverpool.



Yes – this is
important, but
it is about much
more!

This one hour journey will

- Explore a systematic approach to analyze and reduce a school's environmental footprint
- Help support a school community to value its immediate and broader environment
- Assist in integrating environmental education across the Key Learning areas

CEO Sydney Policy

SCHOOL REVIEW AND IMPROVEMENT FRAMEWORK

Resources, Finance and Facilities

5.3 Environmental stewardship

RATING: 6

- The school community is knowledgeable about, and well understands, the importance and implications of environmental stewardship in the context of Church teachings and social responsibility.
- There is a whole-school integrated approach to teaching and learning about environmental stewardship which is well documented in policies and programs.
- The school community demonstrates a strong ongoing commitment to environmentally aware values, attitudes and actions which impact positively and responsibly on the built and natural environment. There is a range of highly visible practices and activities which maintain motivation for and deepen commitment to environmental stewardship.

RATING: 4

On Holy Ground in the Land of the Holy Spirit

- Our diverse ecology is fragile and humankind's footprint is heavy
- Creation is gift and we are its stewards
- As Christians and stewards, we need to live the care that is required
- We are called to radically change our lifestyle and unsustainable patterns of consumption and production



An Ecological Vision for Catholic Schools

- Ecological sustainable development
- Education – making connections
- Being engaged, engaging and deciding
- Ecological vocation



All Saints Catholic Primary School, Liverpool



Complexity of 'The Block'



- ◆ Three schools (1900 students – 662 Primary students; 170 staff members – 52 Primary)
- ◆ Large Parish complex
- ◆ Liverpool City Centre (Westfield)

Assessing our Environmental footprint – the strategy

1. What is our Environmental footprint in 2007 – using current practice and 2006/7 information (Pre-test)
2. What strategies do we implement to reduce our Environmental footprint- (intervention)



3. When we reassess our footprint in 2010, what will we find? (Post-Test)

The Pre-test - it took all of 2007

- ◆ Research by the principal
- ◆ Formation of Committee – students, parents, principal
- ◆ Timeline working back from mid Term 4 2007 when report with recommendations was to be delivered
- ◆ Regular meetings three times per term
- ◆ Budget to engage experts

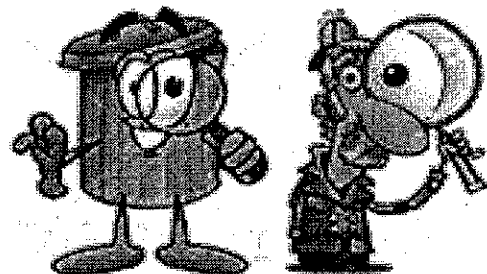


Assessing our Environmental footprint – included in the pre-test were:

- a) Water usage and practice
- b) Energy usage and practice
- c) Carbon emissions
- d) Biodiversity and its management
- e) Solid waste and practice
- f) Transport and its practice
- g) Curriculum provisions



By the reporting date (mid term 4 2007) what did we find?



a) Water usage

(Using water accounts)

- January to March 05 – 665 kilolitres
- January to March 06 – 537 kilolitres
- January to March 07 - 328 kilolitres
- Observed practice

Why the reduction?

- Reducing student population -780 – 720
- Water saving devices for taps

Water usage

- reason for reduced usage (continued)

- Dual flush toilets
- Changed practices – e.g. excessive hosing of hard surfaces
- Conservation awareness raising
- Installation of water tanks thanks to fed money

Planning for future:

- Water friendly plants
- Change all taps to timed taps over time
- Incorporate in Classroom practice

b) Energy usage

- Audit by Carbon Planet and Todae
- Commented usage was moderate compared with businesses with similar staff numbers (let alone children)
- 2006 Electricity accounts and 2007 practice used
- Major emissions contributor (15.6% of total CO₂ emissions)

Use	kWh/yr	% of total
Computer	30240	40.4%
Lighting	20381	27.3%
Other	4275	5.7%
Auxiliary	3730	5.0%
Aircon	15980	21.4%
Total	74607	100%

Energy usage continued

- Practice reviewed - Could be reduced by 20 000 kWh per year
- Greenpower – additional cost of \$2240 or 10% yet eliminate 60.4 tonnes of GHG emissions
- ICT practices to include shutting down when not in use, screen savers, USB activated power boards installed
- Mains timers attached to Zip hot water units and coolers
- Managing lights when no one present

Energy usage reduced:

- Refitting halogens with more efficient and environmentally friendly light globes
- Switch to Green power – attempted but not available for schools at this stage
- Set air conditioners to set temperature – 22C in Summer, 20C in Winter
- Solar Panels installed – (2008, 2009 using Government grants mainly) generating 15% currently.
- Policy – Environmentally Friendly Classroom code, HERO - implemented

c) Carbon emissions - what was audited?

Services	Procedures	Emissions source
Utilities and services	Electricity, water, telecommunication Waste and cleaning	• Emissions from electricity generation • CO ₂ from supply of services
Stationary/ Teaching aids	Paper General items	• Emissions from Manufacture, waste and printing • Emissions from Australia Input/Output data
Transport	Field Excursions	Fuel Combustion CO ₂ emissions cars/busses
Professional Services	Staff members individual work time contribution	Per capita emissions for work time only

Summary of emissions audit

Service/Equipment	Emissions (CO ₂ e/yr)	% of total
Professional services (Staff only)	139.0	33.7%
General Stationary (Supplies)	95.6	23.2%
Waste (Co-mingled landfill)	73.9	17.9%
Utilities	64.6	15.6%
Services (Cleaning)	24.2	5.9%
Excursions (Field Trips)	9.9	2.4%
Paper	5.5	1.3%
TOTAL	412.7	100%

d) Biodiversity / drainage

- Greatly improving our biodiversity footprint with additional plantings in the existing gardens and the creation of an Outdoor learning area through BER Pride
- The **Drains are just for Rain** program – linking drains to the nearby Georges River
- Growing vegetables
- Additional ponds/ water features to create spaces for frogs etc
- Class plantings

e) Solid Waste

- In 2007, no waste separation program
- No recycling.
- Waste accounted for 73.9 CO₂e/yr or 17.9% of the total.
- Rubbish assessment



Rubbish assessment



- One day's rubbish gathered
- Sorted into - Paper/Cardboard, Recyclable bottles etc food waste, and contaminated waste
- Weighed

Waste assessment

Item	Description	Weight 1 day	Weight year	Recyclable
1	Paper/card board	24.7kg	5250kg	Yes
2	Bottles, PET, drink cont	6kg	1260kg	Yes
3	Food waste	19.8kg	4200kg	Maybe
4	Plastic, other contaminated waste	25.95kg	5469kg	No
5	TOTAL	77kg	16179kg	

Waste management strategies

- Paper and Cardboard recycling introduced 2008 at class, office and whole school levels.
- Recycling of plastic bottles and popper containers etc in 2009
- Aiming to recycle food stuffs in 2010 but also introduce the Waste Free lunch. 2Ch currently trialing

f) Transport

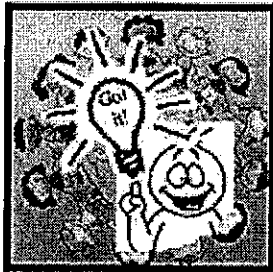
- Combination of incursions and excursions
- Awareness raising of CO₂ emissions
- Focus on balancing student needs with emissions implications
- Wish to include cost of emissions offset in excursion cost , but just haven't go around to this yet!

g) Curriculum -

- Not really considered in 2007

• Oops! ☹️

2. Intervention - strategies



- Some strategies mentioned already

Some of the strategies used included:

- A school environmental Checklist
- A reflection on one's personal footprint
- The development of appropriate artwork to build into the Committee's work and report
- Maintaining and monitoring the timeline
- Modifying the plan as information came to hand
- Engaging external consultants (Carbon Planet® and Todaye)



Carbon Planet® consultant and AS students

Strategies (continued)

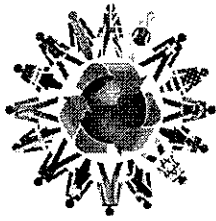
- Involving Liverpool City Council
- Regularly reporting back to the community – Newsletters, Parents meetings, Assemblies
- Getting on board with local events (eg Earth Hour) and Carbon Offset opportunities (Enviro Saver program, Tankaday program)
- Mini awareness raising exercises
- Implementing Class Electricity and Water usage survey
- Facilitating a student created Code for Environment Friendly Class room code
- Developing submissions to take advantage of Federal Environment programs (eg Rainwater tanks, Green vouchers)

Year 5 students'

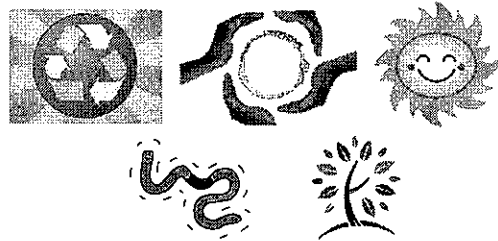
All Saints Catholic
K-6,
Liverpool...



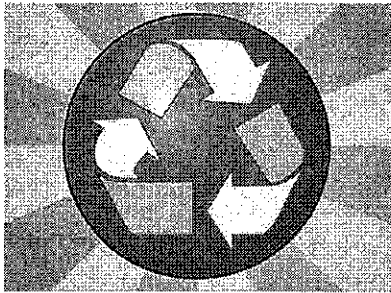
... is working hard to
make a positive difference
to our world and its
future



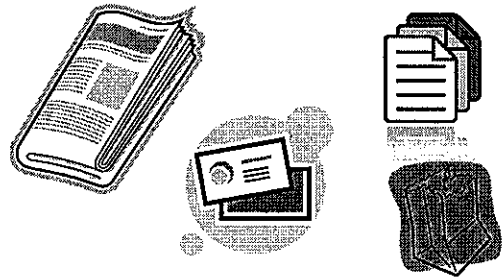
These are some of the
environmental initiatives we
have implemented to assist in
saving the planet



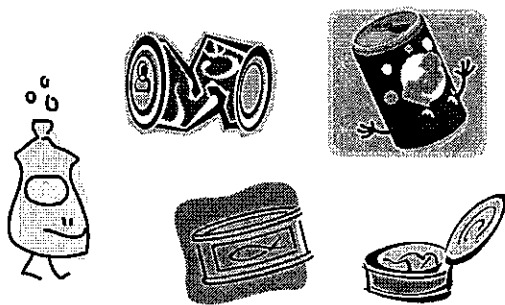
RECYCLING



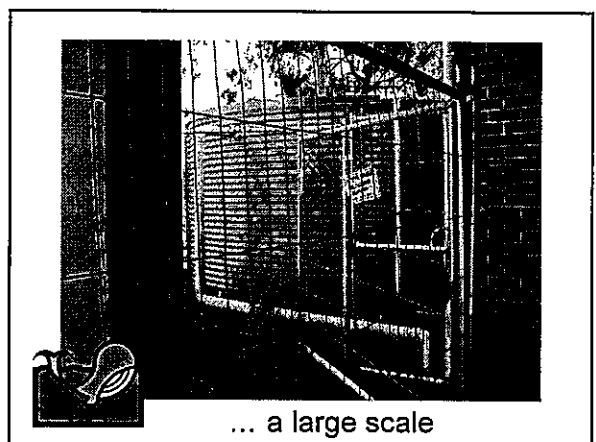
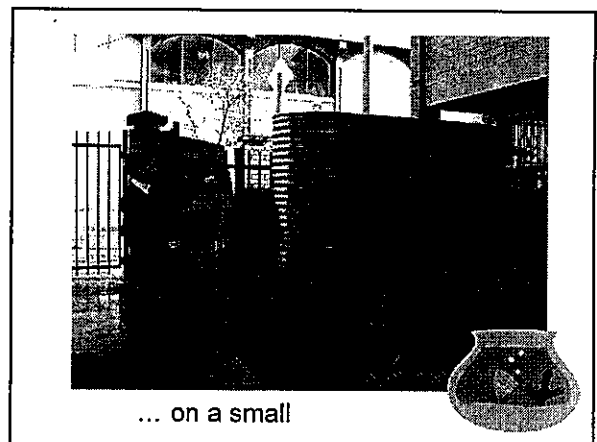
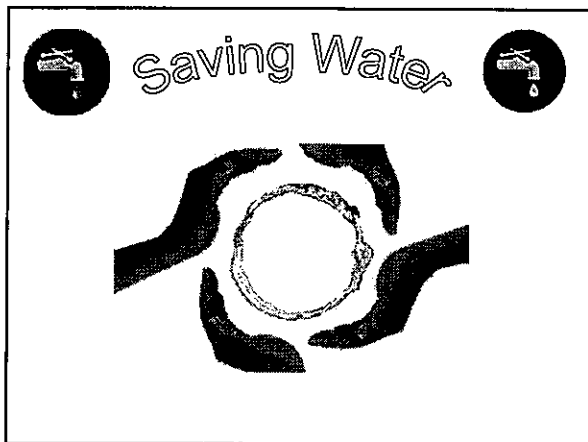
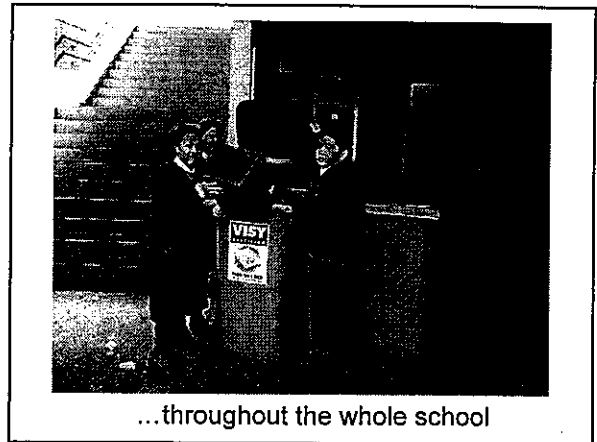
Paper Products

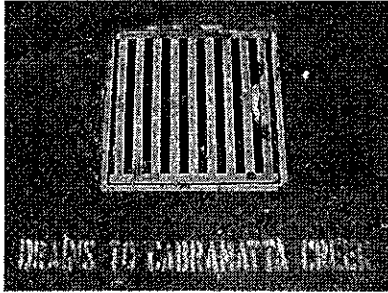


Plastic and Cans



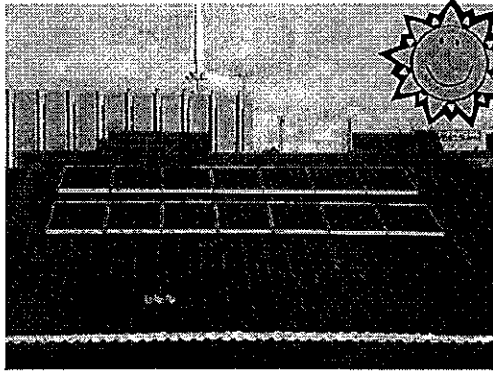
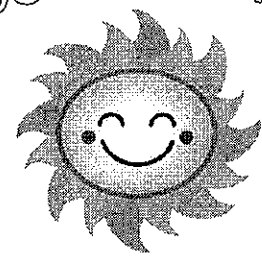
... in the classroom



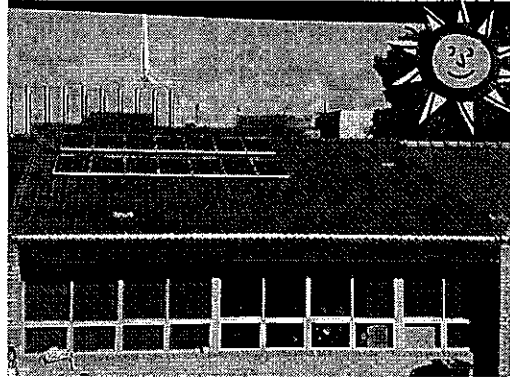


Managing Storm Water drains throughout the school

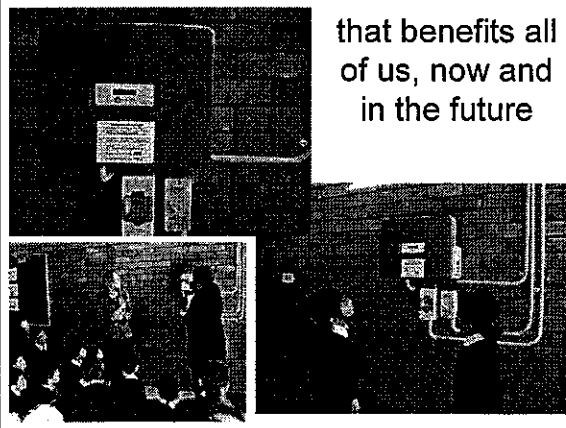
Solar Power



Solar panels on the roof

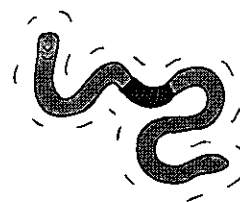


to generate clean and renewable electricity



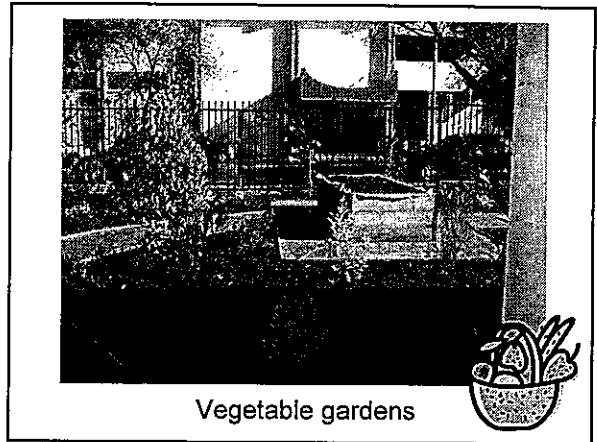
that benefits all of us, now and in the future

Biodiversity

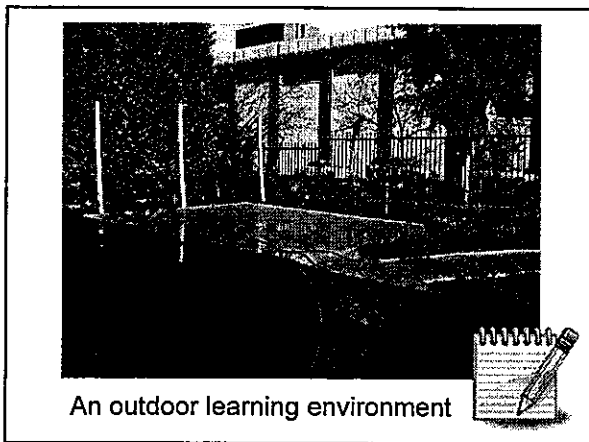




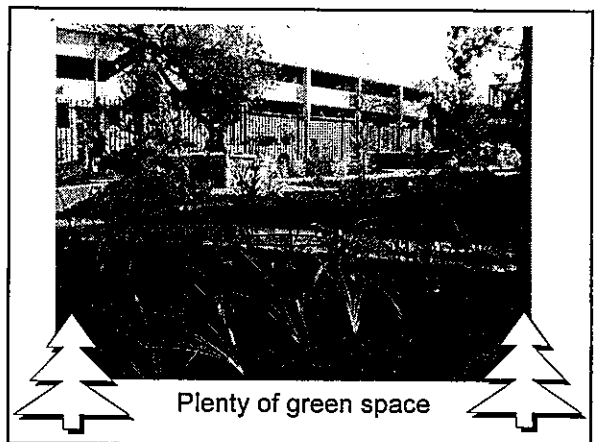
Worm farms



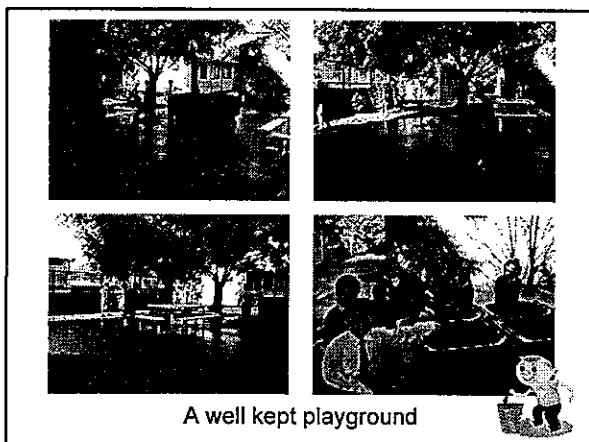
Vegetable gardens



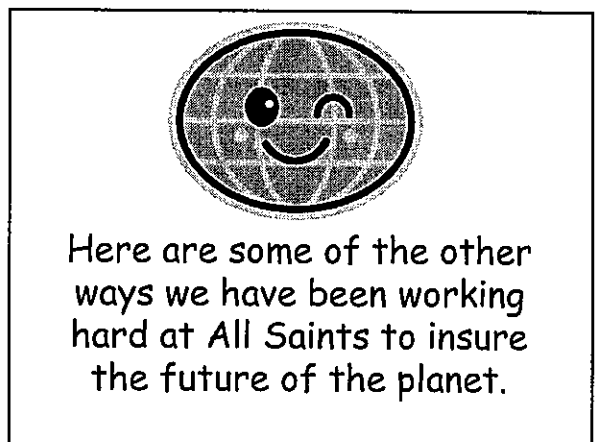
An outdoor learning environment



Plenty of green space



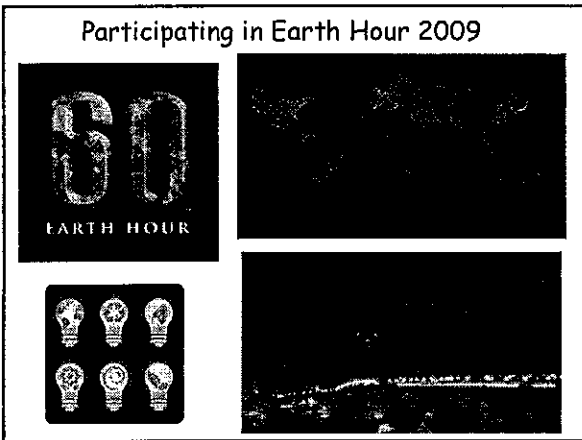
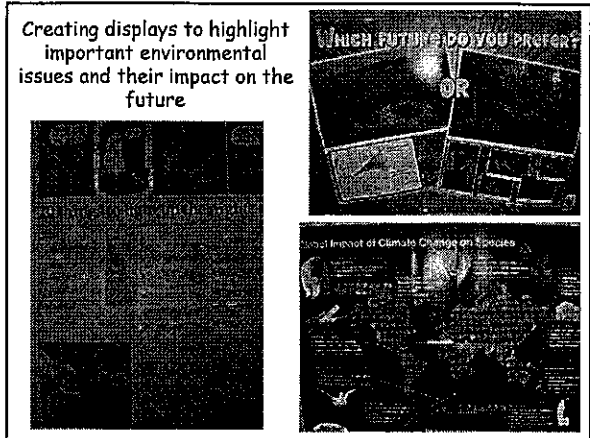
A well kept playground



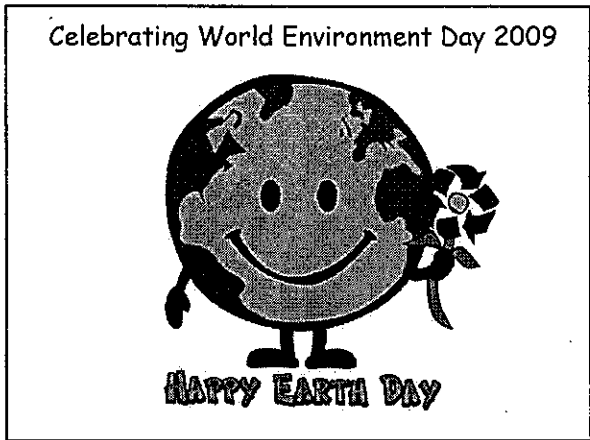
Here are some of the other ways we have been working hard at All Saints to insure the future of the planet.



Creating an All Saints Environment Committee



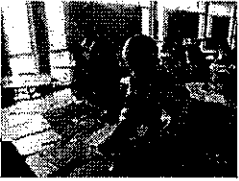
Participating in Earth Hour 2009



Celebrating World Environment Day 2009

Students School Sustainability Conference – 28.09.09


- 110 students from 12 Primary schools
- 25 teachers and parents
- Keynote speakers
- 7 schools shared their efforts
- Choice of 6 workshops
- Plenary



All Saints News.com

2008/09 Curriculum - finally

- ◆ Targeted work happening in each stage
- ◆ Integration of the Environment perspective in all KLAs – draft doc to begin in Semester 2 2009
- ◆ Liturgical celebrations – e.g. Environment Day prayer time
- ◆ Whole school focus – e.g. 2008 School Concert *All the World is sacred* -



3. When we reassess our footprint in 2010, what will we find? (Post-Test)



Post-test

- ◆ Use the same process as in 2007
- ◆ Audit the 7 aspects using 2009 data and/or 2010 practice
- ◆ Employ same consultants
- ◆ Analyze data and recommendations
- ◆ Answer 2007 questions and more recently raised questions
- ◆ Compose new report with directions for 2011 →
- ◆ Begin the next implementation

Summary

- ◆ Educate – educate – educate
- ◆ Talk the talk, talk the walk, walk the walk, walk the talk.
- ◆ Reduce
- ◆ Increase
- ◆ Recycle / Reuse
- ◆ Offset

EDUCATE

- ◆ Every member of the community
- ◆ Create strategic directions and monitor
- ◆ Use every opportunity to maximize learning
- ◆ Help project what sort of world we want to live in

THE TALK AND THE WALK

- ◆ We need to be authentic
- ◆ Aim high rather than at the lowest common denominator
- ◆ Check in with how everyone is working with the Guidelines
- ◆ Own it when things do not go well.... E.g. Carbon liability may not have reduced between 2006 and 2009 despite our efforts due to increased resourcing

REDUCE

- ◆ REDUCE:
 - Electricity usage – installation, and usage, school practice
 - Water usage – timed taps
 - Computers on but not in use
 - Air-conditioning by managing well
 - Resources - purchase wisely

INCREASE

● Increase

- Knowledge of stewardship
- Environmental awareness
- Environment perspective in curriculum
- Environmental action by students
- Teacher responsibility
- Increase installation of environment friendly lighting and water devices

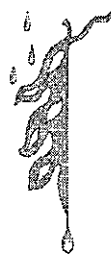
RECYCLE / REUSE

- Existing student paper resources
- Rubbish - Paper/cardboard, drink containers, food?
- Text books – e.g. *To Know Worship and Love*
- School uniforms

Offset GHG Emissions

- Green power additional 10% in cost but offsets 14.4% of emissions
- Installation of Solar Panel generating 3657 kWh per year = 5% of Energy cost
- Purchase Carbon credits 413 at a cost of \$18 = \$7434
- Reality to be assessed in 2010 with another audit to compare 2006 and 2009

You can make a difference – Strategic Change in Primary School Environmental practice



Artwork by Lara Dias

- Authentic process/approach – Pre-test, Implement, Post-test
- Policy based – have a plan
- Integrate it at all levels
- Be creative, innovative – Students Conference

It may not only change
your school's
environmental practice
– it may change you



Appendices

Appendix 1 – Timeline for Environment Committee’s work 2007

Term 1

Week	Activities	Action/Responsibilities
1-6	R-M prepares for the meeting of the Environment Committee	
8	Environment Committee meets to begin the process of what is involved in the review <ul style="list-style-type: none"> • Catholic Bishop’s statement on Earthcare Decision to audit of: <ul style="list-style-type: none"> ✓ Water usage and drainage ✓ Energy usage ✓ Carbon emissions ✓ Biodiversity of the site ✓ Solid Waste management ✓ Transport ✓ Cleaning Chemicals ✓ Foods 	R-M to plan meeting for next week
9	Environment Committee meets <ul style="list-style-type: none"> • To develop timeline • Begin to articulate responsibilities • Identify program of action • Explore the Carbon emissions audit • Develop a report for the newsletter • 60 Earth Hour promotion • Lara’s artwork 	R-M to facilitate <ol style="list-style-type: none"> 1) How to assess Storm water effect – 2) How to develop an assessment of solid waste 3) Survey the Water devices for leaks (Taps and bubblers) 4) Analysis of Water and Electricity usage in the last two years 5) Usage of Natural light – Light meter readings of all rooms 6) How to assess Biodiversity on the site – birds, lizards, insect life, native vegetation, habitats, weeds 7) How to assess Transport usage

Term 2

Week	Activities	Responsibilities
1	No meeting – R-M discussions with Carbon Planet	
2	Meeting. <ul style="list-style-type: none"> • Review actions from Week 9 Term Review Lara’s Artwork • Carbon emissions – planning for Dr Davide Ross’ visit Friday • Contact made with Liverpool City Council re support for the Environmental assessment • Draft Classroom survey re: Electricity and Water usage/ Environmental Awareness • About Catholic Schools – involve • Eco Saver – Registration completed. Audit probably 8th May 	<ul style="list-style-type: none"> • Follow up on Rainwater tanks – Pietro to provide contact details • Students to meet with Dr Ross • Liverpool Council – R-M • Parent Survey and Open Parent mtg – Sigrid • Survey completion requested from all class teachers • About Catholic schools – contact • Eco Saver registration.
5	Meeting <ul style="list-style-type: none"> • Lara’s Artwork • Transport Survey – Sigrid • Class Electricity and Water usage and Environmental Awareness Survey • Carbon Emissions audit and Dr Davide Ross’ visit • Reporting on any Liverpool Council activity • Reporting on About Catholic Schools article • Parents Meeting • Veolia – meeting re: Recycling • Water tanks 	<ul style="list-style-type: none"> • To present – R-M to chase • Survey’s forwarded to Carbon Planet • Further information being forwarded as requested • Awaiting info • Preparing article • Sigrid to present an overview • Awaiting proposal • R-M to begin process
8	Meeting <ul style="list-style-type: none"> • Lara’s Artwork completed and celebrated. To be used in all activities of the Committee. • Parents Group – Sigrid’s talk very successful. Two new members • Carbon Planet Audit ongoing – R-M constantly providing additional information • Draft Eco Code for classrooms etc in process – 	<ul style="list-style-type: none"> • To be used in all correspondence • One of the new members attended first meeting • RM supplying additional info as requested. Should be ready next term • Revised for next meeting

<ul style="list-style-type: none"> Assessing Rubbish levels – Water Tank application to Federal Government on track Channel 7 Weather – All Saints featuring About Catholic schools Article Liverpool Council – needs to be chased Eco tips in Newsletter Recycling information sought form other companies 	<ul style="list-style-type: none"> To be prepared for early next term To be submitted by the end of Term Worked out well In the pipeline R-M to do the chasing Students to provide to Office Pietro to investigate Visy
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Term 3

Week	Activities	Responsibilities
1		
2	Meeting – 23 rd July 2007 <ul style="list-style-type: none"> Review of previous minutes Update on <ul style="list-style-type: none"> Carbon Planet Audit Todae – Environmental review – August 1st Water Tank programs About Catholic schools Liverpool Council Review Classroom Code Rubbish assessment project Recycling possibilities Possible websites 	R-M to chase Liverpool Council, Visy Organise Rubbish audit and obtain necessary permission and keep all informed through Newsletter Meet with Todae to facilitate new assessment Keep Draft Code before the meeting
6	Meeting <ul style="list-style-type: none"> Carbon Planet – Recommendations processed Todae Assessment – Recommendations processed Update on Liverpool Council Rubbish Assessment results and implications Review of further recycling information – follow up on Aboriginal group Recycling of Cartridges etc Check on other recycling Excursion to Eastern Creek recycling centre Draft Report Outline reviewed 	Draft report outline to be used as a basis Follow up on Liverpool Council for biodiversity/drainage Sigrid to follow up R-M – Boys school Book excursion
9	<ul style="list-style-type: none"> Review of classroom Code Recycling Paper and cardboard information in relation to High school About Catholic Schools – appt Term 4 with Bernadette and photographer Liverpool Council appt finally arranged for early Term 4 Recycling information re: Aboriginal Communities – deferred Eastern Creek Recycling excursion organised for Term 4 	Perhaps have SRC review it Meeting with Bill Prepare material fro Bernadette Prepare material for Michelle Catley – Council Sustainability Education Officer

Term 4

Week	Activities	Responsibilities
1	Meeting: <ul style="list-style-type: none"> Update on minutes Year 5 students selected Classroom Code to be presented to SRC Draft Report presented Melbourne Conference – Workshop presentation Next meeting – Week 4 Visit to Eastern Creel Recycling plant	Students Students R-M
2	About Catholic Schools – Interviews and Photo shoot Michelle Catley – Sustainability Officer with Liverpool Council - visit	
4	Deliver Draft Report – seek feedback on recommendations	Principal
5	Report finalised, printed, published and distributed.	

Appendix 4 – Class Electricity and Water Usage Survey

Class Electricity and Water usage survey – May 2007

This Survey is for gathering information only at this stage. Please answer honestly. The results of this survey will inform future practice. Thanks – The Environment Committee.

Name of class:

Person completing survey:

Items	Class Responses
ELECTRICTY USAGE	
Lights	
Are lights always on or is natural light (blinds up) used? How many hours are lights switched on?	
Are lights switched off when the class is not there?	
Is there is procedure in place to ensure that lights are not left on when the class is out? If yes, what is it?	
Computer usage	
Are computers switched on each day or left on all the time?	
Are screens switched off when not in use?	
Air Conditioning	
Is Air Conditioning used every day?	
What procedures are in place to ensure that Air conditioning is used minimally, and/or, switched off at the end of each day?	
Water	
Normally, is water used conservatively or is it wasted?	
General Student knowledge of Environmental issues and awareness	
When you talk to your students about environmental issues, do they feel they can make a contribution? If yes – what can they suggest?	
Would students say their families are trying to reduce their energy use?	
Would students say their families are trying to reduce their water use?	
What do your students see as their main concerns in terms of the environment?	
Other comments/information/ perspectives which you and your class would like to share?	

Code for Environment Friendly Class

Use Water carefully

- Turn off taps when not in use
- In toilets, use the half flush instead of the full flush
- Turn off dripping or leaking taps and bubblers or report them to the Office
- Wash the paint brushes in a bucket of water not under running water

Use Electrical Energy carefully

- Use lighting only when needed
- Have a light person to turn off lights when not in use
- Put a jumper on (or take it off) instead of using the air conditioner. Summer temperature to be set at 22°C. Winter temperature to be set at 20°C
- Have a person in charge of turning the computers off in the afternoon
- Turn electrical items off at night instead of leaving them on standby
- Open the blinds for natural light

Minimise creation of Waste

- Implement recycling policy
- Ensure management of rubbish is effective and monitored in all classes and other learning spaces
- Re-use used paper as scrap paper.
- Use exercise books and handwriting books efficiently.
- Reduce / Minimize photocopying requirements

Class responsibility – wider school commitment

- Ensure that your class/grade responsibility is incorporated into class planning (Responsibilities to be worked out at the start of each year)
- Ensure all students are engaged in this process at some stage through the term.

HERO - Heating, Electrical, Recycling Officers. Ensure that a roster system for this position operates in all classes

