

# EcoBuzz

EcoBuzz Edition 58

Term 2 2015

*Moturoa Mission Enviro-Leader team from GBHS work with Maihi Barber to create a message to Tangaroa.*



## IN THIS ISSUE:

- Moturoa Mission
- Stream Biodiversity
- Arbor Day opportunities
- A wastewise purchasing policy

*EcoBuzz is created with the help of many contributors – thank you to you all! Feel free to share this with others too – please.*

## Kia ora tatou

'Systems' as a study topic is a great way for students to look at how we can personally connect with the bigger picture at the macrocosm and microcosm level. At the macro level, the Earth system, the social system and our bodily system maintain their existence and physical functions as a whole through the interactions of its component parts. The subsystem components for the Earth are the hydrosphere, geo-sphere, atmosphere and biosphere. Our social and bodily systems are both reliant on the Earth system for our survival.

The Earth is a dynamic system, a 'combination of interrelated, interdependent or interacting parts, forming a collective whole or entity' (Science Hub). We can similarly use these descriptors for both our social and bodily systems, which also have cycles. Cycles are continuous and are a collection of connected, on-going processes that circulate a common component throughout a system. Earth system cycles include the rock cycle, the food chain, the carbon cycle, the water cycle and energy cycles.

The key to understanding these systems, is that if one variable changes, other variables may be affected to varying degrees. Knowing that each change can trigger a string of interconnected responses makes the repercussions of any single change definitely worthy of consideration. It is easy to see how schools and centres setting bigger picture goals, making healthy decisions and taking sustainable actions at the micro level will benefit the macro level. Systems are complex but also fun to unpack when we can personally relate them to our own social and personal systems.

Think globally, act locally, respond personally

*Thanks Mary, Lindsay, Adie and Claire*



"The environment is where we all meet; where all have a mutual interest; it is the one thing all of us share." —  
Lady Bird Johnson



"It's good to have an end to journey toward, but it's the journey that matters in the end."  
- Ursula K. LeGuin

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## Update on Project Maitai/Mahitahi

Did you know Nelson City Council is running a programme to improve the health of the Maitai River? The overarching aim of the project is to create a river that is safe to swim in and take kai from, and that everyone can enjoy and feel proud of.



Here's a quick update on some of the work that is going on! If you'd like more information go to [www.nelson.govt.nz/projectmaitai](http://www.nelson.govt.nz/projectmaitai)

## Stream Biodiversity & Fish Passage – making it easy for whitebait to spawn

There is only one place along the Maitai River where inanga (whitebait) lay eggs. This important spawning area is near the Collingwood Street Bridge in the long grasses beside the river on Shakespeare Walk.

Last month, Nelson City Council extended this area by digging a trench, then filled it with hay bales in time for the king tide when inanga spawn. Inanga like to lay their eggs on long grass on riverbanks, and the hay bales are a temporary artificial spawning habitat while the grass grows.

After the spawning season has finished in May, the bales will be removed and the area around the trenches planted in natives. You can find out more about how inanga spawn on the new information sign at Shakespeare Walk.

*Digging In: Extending the inanga habitat on Shakespeare Walk are from left: Iwi Monitor Anaru Pauh, Nelmac Conservation Ranger Ben Pointer, and Nelson City Council Technical Officer – Environment, Dr Paul Fisher.*



## Funding for Community Projects

Funding has been provided for four community projects that help to meet the goals of Project Maitai/Mahitahi. This has included a grant to Nelson College and Nelson College for Girls for monitoring equipment to support their freshwater monitoring programmes. For more information about the fund, visit Nelson City Council's website.

## LAWA Film Clip <http://nelson.govt.nz/environment/water-3/projectmaitai/about-project-maitaimahitahi/>

A short film has been produced by LAWA (Land, Air, Water Aotearoa) about the Maitai River and is now available to view on the Nelson City Council website. Take a peak and find out what Council is doing in partnership with community groups and other organisations to improve the health of our river.

## Toxic Algae

A new programme has begun in collaboration with others to inform people of the problem of toxic algae, what it looks like and how to keep you and your dog safe near rivers. Watch out for further information over the next few months!

## Quick reminder - Drains are for Rain!

Help keep Nelson and Tasman's rivers and waterways clean by remembering 'Drains are for rain'!

The stormwater system is a collection of underground pipes that moves rainwater from roofs and roads to local streams and rivers, and eventually out to sea. We need your help to keep our beautiful waterways and marine environment clean and free of pollutants.

How can you help? Keep nasty chemicals like leftover paint and paint brush water, oil spills and leaks, wash water from cleaning the car, driveway and path sweepings and waste pesticides out of the stormwater system.



## Tasman 2015 Arbor Day - School Planting Activities



Tasman District Council will be holding Arbor Day planting activities over the two weeks from Tuesday 2 June through to Friday 12 June 2015. This is to celebrate Arbor Day which falls on Friday 5 June.

An invitation is extended to your school to send a group of students to participate in a planting on a local reserve or re-vegetation project in your area.

Please contact Kathy as to whether your school would like to attend a planting and also indicate how many pupils you wish to be involved and their ages. Also let her know if you have a

preference to plant in a particular area or at a site your school has planted in previously.

If you have any questions about these activities please phone Kathy Curnow on (03) 543 8492 or email [kathy.curnow@tasman.govt.nz](mailto:kathy.curnow@tasman.govt.nz).

We hope that your students can be involved in this fun and educational activity.

## Nelson School Planting Programme 2015

All schools in Nelson are invited to take part in the Nelson City Council school planting programme, over the winter months (June – September). It's an opportunity for schools to help plant native trees and plants in Nelson's parks, reserves, and alongside waterways.

You should have already received a personal invite to the programme detailing a site that you might like to help plant. All the plants and equipment are provided by Nelmac. All you need to do is get your students to the site at the specified time. Planting sessions normally take around an hour to complete, and we aim to have planting days on Monday and Tuesdays with postponement days on a Thursday and Friday.



If you would like your school to be involved, just let me know how many classes you want to bring along, the number of students and the week/s that work best for you. Please be aware that some schools have been very quick off the mark and sessions are booking up fast!

To book your session/s contact Mary Curnow at Nelson City Council on 03 546 0383 or via email at [mary.curnow@ncc.govt.nz](mailto:mary.curnow@ncc.govt.nz)

## Ecobuzz Survey

Claire, Mary and Adie really appreciate the contribution made by all those who completed the Ecobuzz survey last term. Your feedback and suggestions will progress the next steps in Ecobuzz's journey. Respondent Cristina Armstrong won the draw for the Whitcoulls' voucher.

## New Recycling Bin in Tasman

"More should be recycled" has been the response of all the people who have come on the visual waste audit tour of the Eves Valley landfill, when they see the items from one of the ten truckloads each with ten ton of rubbish emptied there each day.

And more is being recycled. At the Richmond Resource Recovery Centre (RRRC) the Smart Environmental staff hand sorters have had to work much longer hours to keep up with the quantity at times. However, still not enough is being recycled and too much is going to landfill when it doesn't need to, even allowing for the fact that many items are not recycled in Tasman/Nelson that may be in other places e.g. the North Island, because of smaller volumes and costs.

To allow for more recycling, there is a new large black recycling wheelie bin with a yellow lid that will be delivered to rateable units in Tasman in May- June this year. The bin can hold 240 litres and will be collected every second week. A new facility with automated sorting and baling, is being built at the RRRC now and this will process the recycling from the bins emptied by new Smart Environmental trucks, starting on June 29th. The current blue bin will continue to be used for glass only and the yellow-lid wheelie bin will take the rest, which is the paper, cardboard, plastic and ferrous and non-ferrous lids and cans. Nationally, the yellow lid on bins is the standard colour for co-mingled recycling.



## Saving a local Species

There are many threatened and endangered native plant species in New Zealand and it was exciting to hear a local story about the Grey Saltbush, *Atriplex cinerea*, (see photo below), which mostly seems to be a Cook Strait species.



This plant was extremely threatened as it relies on both male and female to reproduce and there is a lack of the male. However, a single plant was found on Bronte Peninsula (near Mapua), the only mainland site in the country. A few had been found on islands in the Cook Strait area.

Tim at Titoki Nursery started propagating the seed and now many more plants are found, thanks to planting efforts of Tasman District and Nelson City Councils, so look out for them on coastal sites e.g. Tahunanui Beach, Bird Island, Rabbit Island.

If your school intends to plant and/or grow native species for a local project consider including the opportunity to save a rare native plant species at the same time.

Contact Adie, Claire, Lindsey or Mary, for next steps.

# Regional Enviroschools

## Moturoa Mission 2015 memories



Chur!

The winning team from Nelson Intermediate – congratulations!



Lots of real team work!



I'm proud of us!



Team belle?



Ok-that way!



Miss super helpful!



Really?



My weed is bigger!



Heck the dog died!



## Enviroschools Moturoa Mission- A great day out again!

32 teams from Enviroschools across Nelson and Tasman took part in the second sustainability challenge at Rabbit Island in March.

The Enviro-leaders had to use strategy, problem-solving, co-operation and team work skills in order to complete a course solving environmental tasks to collect points.

There was a diverse range of activities on offer to echo the Enviroschools kaupapa of:

### A healthy, peaceful sustainable world through people teaching and learning together.

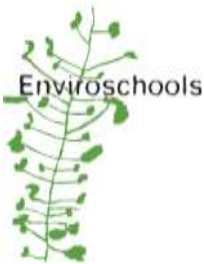
Activities included a recycling relay race, making tea from edible weeds, writing a message to Tangaroa, choosing the most suitable wood for survival cooking and completing a toxicology investigation to find out what had killed a dog swimming in a local river (hypothetical!!).

Winners on the day were Nelson Intermediate School (pictured on page 7) with runners up from Tasman School. A special prize for outstanding team spirit, team work and perseverance was awarded to Auckland Point School; Nelson's newest Enviroschool.

In a slight change to the previous year, Envirogroups also enjoyed an opportunity to network with each other in the afternoon with an activity run by Maihi Barber.

A HUGE thanks goes to all those involved: Cawthron Institute, Keep Richmond Beautiful, Nelson Environment Centre, Maihi Barber from Te Awhina Marae, Natureland, The Riverside Community, Project Janszoon, Nelson Provincial Museum, Forest and Bird, Nelmac, P F Olsens, Rabbit Island Trapping Group, Tasman District Council Bio-Security and Parks and Reserves staff, Carolyn Shirtliff and students from Salisbury School.

The event was made possible with funding from Nelson City Council, Tasman District Council and the Enviroschools Foundation.



## Thank you – Census

We'd like to say thank you for the contribution you all made to the 2014 Enviroschools Census. It has been a huge milestone for the Programme to gather so much rich evidence on the difference that all the Enviroschools are making to children and young people, their communities and our beautiful planet.

## Haere mai, nau mai ki Toimata Foundation!

In May 2015 the name of The Enviroschools Foundation changes to Toimata Foundation. The Enviroschools Programme retains its current name, logo and identity.

Over the last 15 years the Foundation has grown from supporting a handful of primary schools to supporting nearly 1000 schools, kura and early childhood centres. Participants range from children to secondary school students, and post-school youth and communities in both English and Māori settings. The Foundation works with this wide network through two programmes: Te Aho Tū Roa and Enviroschools.

Toimata Foundation will continue to support the growth and development of Te Aho Tū Roa and Enviroschools.

Toimata is a concept from Dame Katerina Te Heikoko Mataira. The name evokes ideas of creativity and craft, sustainability and vision. The takarangi design in the logo depicts all life nestled in the embrace of Ranginui and Papatūānuku and their love that flows to us here in the present, to all who have gone before and all generations to come. If you have any questions please contact your regional coordinator.



## Bird Island assistance

Getting to walk across the estuary to Bird Island from Rough Island was an eagerly anticipated adventure for Jodie Brown's class with parents from Appleby School, students and teachers from Salisbury School plus about a dozen Enviroschools Regional Coordinators from around New Zealand. Everyone had volunteered to help Michael Miller do some tree releasing\*, seedling sleeve removal and weeding around some of the 1,000 native plants that he had planted on Bird Island since he had adopted it five years earlier. (Photo of Michael Millar with group)



The Regional Coordinators were new to this part of New Zealand and really enjoyed hearing the parents and teachers share the loving connection and values they placed on this coastal section of Tasman Bay. The Salisbury School students shared a karakia before we crossed the tide out estuary. The Island was very dry so it was difficult to tree release but much easier to participate in the competition to remove the longest root section of the weed pest ice plant native to South Africa, *Carpobrotus edulis*. The dozens of sleeves that were removed from around the seedlings were piled under a tree tunnel canopy and then we all had lunch together on Rough Island with the promise of helping Michael with some planting in winter. (See photos)

\*Tree releasing = grass and weed removal just around the tree seedling to reduce competition and provide it with the light and space to grow more easily.

## Waste audits assessing resource awareness

A quick waste audit in some Early Years Enviroschools has demonstrated the influence of great practices and decision making about use of resources and purchasing that considers whether items are recycled or recyclable so that very few resources need to go to the landfill.

Waste represents a loss of resources, both in the form of materials as well as energy. Everything we consume, or use, ultimately becomes waste in some form. In nature, no perceived waste is actually wasted but we tend to think of waste as something we throw away or flush down the drain and out of sight.

One useful way that waste can be assessed is through the 5Rs hierarchy of Reduce, Reuse, Recycle, Recover and manage Residual waste, where reduction is the priority. Reduction is obvious in the centres audited so far; the audit at First Years Richmond only took 20 minutes, because their waste/recycling management was in such a central spot and best use of resources the priority. The main cause of landfill waste was the disposable nappies from the Under 2s. In the week that Harakeke had their audit with their 20 or so children plus teachers, we estimated their centre was producing less than 500 grams of waste going to landfill each week. Please note that 64,000 tons was buried in the Eves Valley and York Valley landfill last year.

Waste audits are best carried out with informed participants as the focus is on what resources are being wasted and whether they need to be, not the yuck factor of what is found, which reinforces the throw away attitude. The Tasman waste minimisation educators to contact are Adie Leng and Claire Webster and for Nelson, contact Sarah Langi of Waste Education Services.



## !! GET INTO THE OUTDOORS !!

Adventurer's Outdoor Youth Club is The Murchison Youth Council's Initiative funded by Ministry of Youth Development.

Our aim is to provide Murchison youth with some outdoor activities that would enrich their outdoor/nature knowledge with practical skills as well as provide them with environmental education through this activity.

Ten weekly workshops cover survival skills, white water rafting, search and rescue, pest control, community planting, upcycling, protect our waterways, nature studies and amazing race.

Youth will learn how to stay alive in the outdoors, how to set camp fire, how to track down lost campers, how to use maps and landmarks, how to find uses for unwanted household materials, how to eradicate pests from outdoors, the importance of insects and the role they play in maintaining a balanced ecosystem and much more...



Through this program youth get the opportunity to cooperate with local groups such as Murchison Environmental Care Group, DOC, Tasman District Council staff, Murchison Search and Rescue members as well as with local individuals and businesses.

This programme started Wednesday 18th March and runs between 3.30pm – 5.30pm. The program is suitable for 9-16 year olds, is free to attend and very well attended!



## Water Focus at Richmond School

Term 1 at Richmond School saw the year 5 and 6 syndicate studying 'Water'. We looked at the water cycle, conserving water, pollution, the way people use water in a variety of ways and the way water shapes our landscape. This tied in well with our camps at Tukuruia in Golden Bay where we did the Pupu Power Station walk, visited the Ngarua Caves on the Takaka hill, Pupu Springs, a local dairy farm, Farewell Spit and the Anatoki Salmon Farm.

Back at school we wanted to take on an ongoing local project so with the help of Adie Leng (TDC) and Mel McColgan (Waimaori Streamcare Co-ordinator) we intend to adopt a section of Borck Creek (Lower Queen St) where monitoring and potential tree planting can be carried out. As part of our studies Mel took each of our year 5-6 classes on a stream monitoring adventure where the children got to learn about flow, water clarity, temperature and the creatures that live there. Below are some photos of our experiences.



## Ngatimoti School Stream Features on LAWA

A stunning video about Ngatimoti School's stream care features as River of the Month on the front page of Land, Air, Water, Aotearoa = LAWA's website, <http://www.lawa.org.nz/>. Nelson's Maitai River featured as the River of the Month in March.

Principal, Ali Turner, and Envirogroup students share their school's ten year journey and passion for caring for their Ngatimoti Stream and how it contributes to maintaining the health of the Motueka River. They have regularly reported the steps of their journey in Ecobuzz: weeding and weeding, efforts with recognition from Weedbusters; pest trapping; growing native seedlings; more weeding; their successful funding application to Kids Restore New Zealand, which came with a surprise visit from Ruud Kleinpaste; more weeding, and the massive effort to create the track and finish the planting, hopefully ensuring the protection of the stream, along with the rock wall put in after effects of flooding. Their key message is to encourage others to take action to maintain the health of streams in New Zealand's catchments so the rivers and coastal waters will be healthier.

The LAWA website is a national collaboration of organisations to tell the stories of New Zealand's environment through data sharing, video stories and learning opportunities. **This film can also be seen on You Tube:** <https://youtu.be/Ag1dDgpZ67o>

*Two members of the Ngatimoti School Envirogroup monitoring the health of the Ngatimoti School Stream*





## Hira Rural Kindergarten...

We were delighted to receive our Enviro Schools Silver Award in Term 1. Our reflection day was not daunting, but a fabulous celebration of our communities achievements in sustainability practices and learning.

Thanks to all those who have supported us and to Roger Wilde, Helen Durbridge, Sally Jamieson and Lindsey Fish who, along with parents, children and teachers, were part of the reflection process.

One of the most significant things we learnt was that when you collaborate with others you achieve so much more. One of our next steps is, to support children to take a more active role in implementing their ideas for sustainability.



## Kids Edible Gardens In Schools

During the last week of Term 1, two cooking workshops were held with 30 enthusiastic children from Victory Primary, Auckland Point Primary and Nelson Intermediate schools. The chef was David Agnew, the hospitality training provider at Nelson Training Centre. David's purpose was to make space for the kids to be creative with the autumn harvest. Four cooking stations offered a choice of brightly coloured vegetables and goodies for them to make their own artistic and yummy dishes. David also subtly wove in lots of learning such as safety in the kitchen, how to use all the senses to enjoy food by making your dishes smell and look delicious and even feel good – once you've washed your hands of course.

First up, was kneading dough into rectangles and filling them with rainbow slivers of vegetables, ham, cheese and freshly-made tomato sauce to be baked on the spot. These were joined by balls studded with sweet delights such as dried fruits and dark chocolate.

Then came the painful exercise of delayed gratification while these cooked and the children rushed around the Nelson Environment Centre garden identifying and gathering fresh herbs for their frittatas. They found thyme, rosemary, parsley, oregano, sage, fennel, mint and tarragon (the labels may have helped!).

The mix of primary and intermediate children was perfect for "big brother big sister" dynamics with the older children making sure, together with the school supervisors, that eggs got broken without missing the pan. Nancy from Hampden St says "The cooking stations were set up so every student was always fully engaged making bread, chopping vegetables and making frittatas."

Needless to say only crumbs were left.



*Cooking up some treats*

## Kids Edible Gardens at Hampden Street School: Trench composting

Our gardeners are enthusiastic, hardworking students who enjoy being given big jobs. One of these was how to help compost "happen" and use the school's food scraps to make our own. After a brief explanation of "trench" composting, several elected to build the structure, others made signs explaining how it works, and others planted seedlings of flowers and peas around the trench. When the second group of KEGS students arrived they made their own sign for the trench which ended up being as much art as information and elevated the trench into a beautiful object.

Nancy Eisenberg, KEGS Facilitator





## Waste Education Services/Small Planet A 'waste-wise' purchasing policy

A 'waste-wise' purchasing policy helps to establish your school's commitment to reducing waste at source and to communicate the action to parents, staff and students.



When deciding what to purchase, consider products that are better for the environment. The Environmental Choice New Zealand scheme makes deciding easy – approved products carry a green tick symbol as an eco-label.

## RECYCLING ONLY WORKS IF PEOPLE BUY THE RECYCLED PRODUCTS!

Here is an example Purchasing Policy for you to adapt to your school's needs:

### OUR SCHOOL WILL:

#### REDUCE:

- Only buy things we really need
- Buy items that are long lasting, e.g. reusable cloth or synthetic bags
- Buy in bulk
- Print double-sided
- Print hard copies only when necessary.

#### REUSE

- Reuse everything we can:
  - the back of used paper
  - envelopes
  - newspaper
  - yoghurt pots
  - food scraps.
- Buy products that are packaged in reusable materials.

#### RECYCLE

- Recycle as much as possible of what we cannot reuse: printer cartridges, paper, plastic containers
- Buy products that are recycled and/or recyclable: unbleached, recycled printing paper, envelopes, stationery, photocopying paper and toilet paper
- Buy products that are packaged in recyclable materials, such as paper and cardboard
- Take non-recyclables home.
- Use biodegradable plastics where possible.

#### RECOGNISE

- Recognise the efforts and achievements of everyone involved in the waste reduction programme.

#### REVISE

- Revise our policies and practices yearly to make sure we are reducing waste as efficiently as we can.

#### RECORD

- Record any changes we make in purchasing and calculate the savings – both environmental and financial.

#### REJOICE!

- Publicise our success and celebrate!





## Small Planet Workshop:

Our annual Small Planet Cluster meeting is on **Wed 29 April at 3-4.30pm** at Nelson Environment Centre. By popular request, this year's workshop will be:

## LOVE FOOD, HATE WASTE: SAVE MORE!

The workshop will cover: meal planning, savvy shopping, safe storage, luvverly leftovers, lunches, etc. This will tie in with the national Love Food, Hate Waste campaign and our local campaign. I am offering parent workshops for early childhood centres on the same topics so this will equip you as teachers with the knowledge and messages we are promoting to families with young children. And it will be fun, I promise! And free!

Please let me know if you wish to register for the workshop as I need to print out the resources for you to take away

To register, or for more info,  
contact: Sarah Langi

Waste Education Services and Small Planet –  
Nelson funded by Nelson City Council

Email: [sarahlangi@nec.org.nz](mailto:sarahlangi@nec.org.nz)

Phone: Nelson Environment Centre: 5459176 ext1

[www.wes.org.nz](http://www.wes.org.nz)



## Artbox art exchange: a treasure trove for children's art/craft materials

Our Artbox, which “rescues” materials suitable for children’s arts and crafts from landfill, will be open as usual on the 3rd Wed each month at 3.30–4.30pm.

The next open day is 20 May at Nelson Environment Centre.

We are stocked with paper and card and lots more; so come along; teachers from schools and early childhood centres are all welcome. Bring any surplus treasures you may have to exchange; if none, you are still welcome.

An annual subscription of \$15 applies; materials are free.



*Campus Corner students show off their vests made from materials from the Artbox*

Attention all caretakers, grounds staff!

## RIDDING NZ OF PERSISTENT ORGANIC POLLUTANTS (POPS)



A nationwide collection is on to clear New Zealand of DDT and other obsolete pesticides.

**AND IT'S FREE!**

[www.thegreatDDTmuster.co.nz](http://www.thegreatDDTmuster.co.nz) | 0800 247 326



Simply visit [www.thegreatddtmuster.co.nz](http://www.thegreatddtmuster.co.nz) or call 0800 247 326 for full details on how to book collection of these banned pesticides.



## Win a \$4000 beverage container recycling Prize for your secondary School.

APPLY NOW to become one of 12 secondary schools in New Zealand that will receive FREE permanent beverage container recycling bins, thanks to the Keep New Zealand Beautiful Beverage Container Community Grants Programme!

Applications close 22nd May 2015 @ 4:00pm.

[www.paper4trees.co.nz](http://www.paper4trees.co.nz)



## Trust Power Community Awards

Do you know a group that provides outstanding services to your community? You can nominate them now for a Trustpower Community Award.

Entries are now open for the 2015 Trustpower Nelson Tasman Community Awards. Anyone can enter a group, and all voluntary groups and non-profit organisations are eligible. Entries close on May 1, 2015.

The awards cover five categories;

- Heritage and Environment
- Health and Wellbeing
- Arts and Culture
- Sport and Leisure
- Education and Child/Youth Development.

Category winners receive \$500, runners-up receive \$250 and the Supreme Winner will take home \$1,500 and an all-expenses paid trip for two representatives to the Trustpower National Community Awards.

Nomination forms can be picked up from council service centre or completed online at:

[www.Trustpower.co.nz/communityawards](http://www.Trustpower.co.nz/communityawards)

For more information on the awards visit:

<http://www.tasman.govt.nz/tasman/community/trustpower-community-awards/>

# Calendar



2015  
International  
Year of Soils

“Healthy soils for a healthy life”

<http://resources4rethinking.ca/en/theme/fisheries-day>

<http://www.hiwithekiwi.co.nz/resources>

## Term Two

25 April	Save the Frogs	<a href="http://www.savethefrogs.com/day">www.savethefrogs.com/day</a> <a href="http://www.nzfrogs.org">www.nzfrogs.org</a>
5 June	World Environment Day	<a href="http://www.nzscienceteacher.co.nz">www.nzscienceteacher.co.nz</a>
5 June	Arbor Day	<a href="http://www.arborday.org">www.arborday.org</a> <a href="http://www.tfsnz.org.nz">www.tfsnz.org.nz</a>
18 June	Matariki	<a href="http://www.mch.govt.nz/nz-identity/heritage/matariki">www.mch.govt.nz/nz-identity/heritage/matariki</a>

## Term Three

3-7 August	School's Peace Week	<a href="http://www.peace.net.nz/contents/school's-peace-week">www.peace.net.nz/contents/school's-peace-week</a>
13-19 Sept	Keep NZ Beautiful Week	<a href="http://www.knzb.org.nz">www.knzb.org.nz</a>
27 September	World Rivers Day	<a href="http://worldriversday.com/resources">http://worldriversday.com/resources</a> <a href="http://www.biodiversity.govt.nz/kids">www.biodiversity.govt.nz/kids</a>

## Term Four

16 October	World Food Day	<a href="http://www.pbs.org/newshour/extra/2013/10/world-food-day-resources/">http://www.pbs.org/newshour/extra/2013/10/world-food-day-resources/</a>
20-26 October	Save Kiwi Week	<a href="http://www.kiwiforkiwi.org">www.kiwiforkiwi.org</a> <a href="http://www.kcc.org.kz/kiwi">www.kcc.org.kz/kiwi</a>
1-8 November	Conservation Week	<a href="http://www.doc.govt.nz">www.doc.govt.nz</a>
21 November	World Fisheries Day	<a href="http://resources4rethinking.ca/en/theme/fisheries-day">http://resources4rethinking.ca/en/theme/fisheries-day</a> <a href="http://www.hiwithekiwi.co.nz/resources">http://www.hiwithekiwi.co.nz/resources</a>

## Future Learning – by GOOD.

This short video from many of the worlds current leaders in education and pedagogy, questions the how and why of our current teaching practices. Sugata Mitra (who put computers in slums and watched children teach themselves) asks how do we prepare our students for an unknown future? He suggests education should now be focused on these three things – (1) reading comprehension, (2) information retrieval skills (how to find out something) and (3) how to believe (and therefore how to discern what not to believe – like doctrine).

In days of old learning was about how to ride a horse and use a gun. Now it is how to read, write and do maths – but will this provide our students with the skills they need for the future?

[https://www.youtube.com/watch?v=qC\\_T9ePzANg](https://www.youtube.com/watch?v=qC_T9ePzANg)





## Activity one: Yoghurt Pottles Galore

Volume and Surface Area demonstration: to look at how buying larger containers saves waste and money.

Equipment needed – at least one 1kg yoghurt pottle and several small ones for each group

- Teacher to fill the 1kg yoghurt pottle with water. Have the students guess how many small yoghurt containers could be filled by this big one (put their bets on the board).
- Start filling the small ones – when their number is reached they sit down. When it is empty those with a bigger guessed number can sit down too. Anyone still standing up? Give them a reward.
- Next cut a 1 kg clean yoghurt pottle into pieces so that it can lie flat on a surface of grid paper. Work out the area it covers.
- Now the small groups cut up the small clean yoghurt containers into flat jigsaw pieces – how many small containers does it take to cover the same area as 1 large container? How much less yoghurt does that mean?

Discussion: can we see that by purchasing larger containers and spooning the yoghurt into smaller reusable containers as part of lunch we can reduce the amount of rubbish or recycling (depending on what we do with the empty containers) and save money? Can they work out how much money is saved by buying 1kg yoghurt?

Brainstorm: What products packaged into lunchbox sized or convenient packaging could this same process be applied to – eg prunes, chips, snack biscuits, .....?

## Activity two: The Last Sunflower

The Last Sunflower is a focus activity about sustainable decision-making.

The activity centres around the key question “what will we do with the last sunflower?”

You will need:

A handful or more of sunflower seeds.

1. Pass around the seeds from the sunflower — each take as many as you like.

Did everybody get some seeds?

How many seeds did you each get? Line up from the person with the most to the person with least seeds.

How many people had none?

What can you do as a group to make sure that the seeds are shared fairly?

2. Now imagine these are the seeds of the last sunflower. You must decide what you will do with your seeds.

What did you decide to do?

Did you make decisions as individuals or as a group?

Which suggestions of action best reflected a sustainable approach?

3. Discuss meeting the needs of today while making sure we can meet future needs.



## Activity three: The life of of an Aluminium Can.

<http://ecan.govt.nz/advice/your-school/games-movies/Documents/tip-the-balance/intro.html>

Watch the video then cut the shapes out and put them in the order you think happens.

Bauxite travels 3000km by boat to Gladstone refinery in Queensland.

Recycling plant.

Goes to Landfill in York Valley, Nelson.

Bauxite mine, Weipa, Cape York, Queensland.

Ore smelted (heated and melted) into aluminium blocks.  
Smelter, Melbourne.

Ore is shipped on a boat 2200km from Gladstone to Melbourne.

Consumed by someone.

Filled cans sent to Nelson by truck and Interlander ferry to a warehouse for distribution.

A distribution warehouse in Nelson.

Made into aluminium sheets, then cans.

OR

Can is sold by corner dairy or supermarket near you

Refinery where ore is washed out of Bauxite, Gladstone, Queensland.

Empty cans trucked to plant for filling – Auckland.

Shipped back to smelter in Melbourne for melting down – then the cycle begins again.

Rubbish bin.

Delivered by truck to retail outlets (shops and dairies) in Nelson/Tasman.

Can is filled in a drinks factory in Auckland.

Aluminium blocks shipped 2600 km to Auckland.

*What other steps can you add?*

## Activity four: Easy soil test

**What you will need:** A soil sample, Vinegar, Baking soda, Water, 2 sample containers.

**Soil pH** is the measure of the soil's acidity or alkalinity. Soil acidity and alkalinity is measured on a scale of 0 to 14, called the pH scale. Most plants grow between the pH range of 4.5 to 8.0; a soil pH of 5.0 has a high acid content; a soil pH of 7.5 has a high alkaline content; a soil pH of 7.0 is neutral.

### Here's how:

1. Scoop about half-cup of dry soil into a container. Then, add a half-cup of vinegar. If the soil bubbles or fizzes, it's alkaline.
2. If there's no reaction, scoop a fresh half-cup soil sample into a second container. Add a half-cup of water and mix. Then, add a half-cup of baking soda. If the soil bubbles or fizzes the soil is highly acidic.

### Tips:

- Vegetables and other plants grow best when the soil pH is optimal for the plants being grown. It is important to match a plant to the soil pH or to adjust the soil pH to a plant's needs so growing them in 'like groups' helps.
- Soils in moist areas tend to be acidic and dry areas often have more alkaline soils.
- Soil pH is important because a soil's acidity or alkalinity determines what plant nutrients are available to plant roots. Nutrients in the soil-elements, such as nitrogen, phosphorus, and potassium, become available to plants when they dissolve in soil moisture. Most plant nutrients will not dissolve when the soil is either too acidic or too alkaline.
- Soil amendment takes time, so make small changes and wait for them to take hold, before making further amendments.
- Acid-loving vegetables are potato, radish, garlic, carrot, corn, pumpkins and parsley
- Alkaline-loving or tolerating vegetables are yam, peppers, mushrooms and zucchini.



## Answers for activity two:

1. Bauxite mine – 10 times the size of Christchurch (a very big hole in the ground!) Weipa, Cape York, Queensland.
2. Bauxite travels 3000km by boat to Gladstone refinery, Queensland.
3. Refinery where ore is washed out of bauxite, Gladstone, Queensland.
4. Ore on boat 2200km from Gladstone to Melbourne.
5. Ore smeltered (heated and melted) into aluminium blocks. Smelter Melbourne.
6. Aluminium blocks shipped 2600km to Auckland.
7. Made into aluminium sheets, then cans.
8. Empty cans trucked to plant for filling – Auckland.
9. Drinks factory – Auckland.
10. Filled cans sent to Nelson by truck and inter-island ferry to a warehouse centre.
11. Distribution warehouse Nelson
12. Delivered by truck to retail outlets (shops, dairies) in Nelson/Tasman.
13. Corner dairy/supermarket – Nelson/Tasman.
14. Consumed by someone then:
- 15A. Recycling Plant –shipped back to smelter in Melbourne for melting down – then cycle begins again
- OR: 15B. Rubbish Bin Landfill – Nelson