

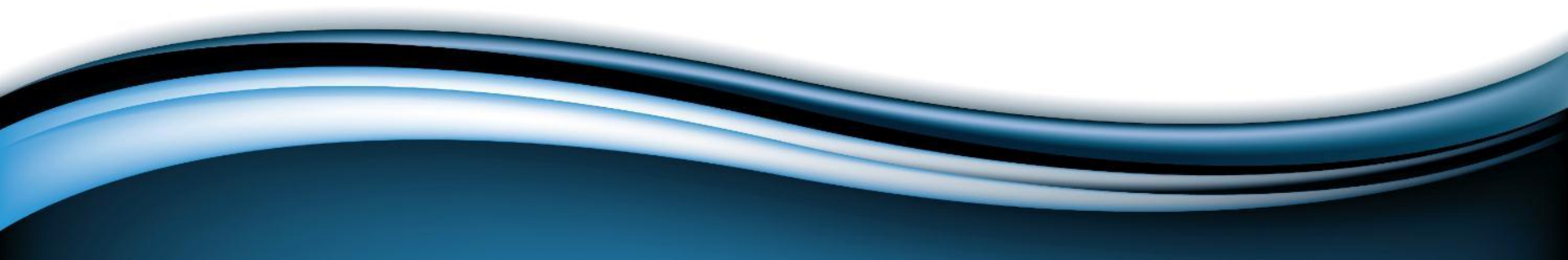
# ***THRIVE or SURVIVE***

## **A Sustainability Project for Suburban High Schools**

*A **Stage 5** Science/Cross Curriculum Unit*

*Written for the North Sydney Regional 'Differentiated High Performance Learning' Project & the Metropolitan North Project-based Learning Network 2013*

***Tracey Warzecha***



Sydney CBD

RIVERSIDE  
GIRLS HIGH SCHOOL





# Pre-AC Extra-Curric & Enrichment





# Reducing our “Footprint”

## National Solar School Program



32x7kWpanels saved 8 tonnes CO<sub>2</sub>/year

## NSW Rain Water Tank Grant



2 x 20 kL tanks supply toilets  
& organic garden

# Student Electricity Audit & Power-saving Initiatives



Students calculated wattage used per room & identified wasteful practices & posed solutions.



# Organic Garden & Aquaculture





## Organic Garden: Year 7 growing seedlings





# Aquaculture :

Brown Trout (7) & water recycled through the herb “boat” garden





# Bush Tucker Garden





# ***THRIVE or SURVIVE***

## A Sustainability Project for Suburban High Schools

### Aust. Curriculum Stage 5 Science/Cross Curricula



- Explicit teaching of Collaborative Skills
- Visually shocking students into addressing their own modern excesses of essential resources
- Analysis of their own household data & practices
- Exploring their carbon footprint & making sustainable choices toward minimization
- Researching Enhanced Greenhouse effect, alternate energies & sustainable living practices
- Developing a “*Charter for Sustainable Living in a Suburban Household*” or Fridge Posters for “*Reducing Household Wastage*”.
- Pre-testing, self- and peer- evaluation of teamwork and work-product are prominent throughout. An introduction to Aboriginal botanic studies occurs within the school’s Bush Tucker garden.
- Celebration: Riverside Survivor



# Explicit Teaching & Assessing of Collaborative Skills (post unit)

Successful teams happen when

- Every individual contributes with equal effort
- Everyone works together
- Everyone stays focused on the goal (final product)
- Everyone is included
- Everyone's opinion is respected & valued
- Everyone gives & gets recognition & praise
- Even difficulties & differences of opinions are valued
- Everyone has fun
- Everyone uses the 9 Es



Scenario Analyses  
Role play  
Self Assessment  
Survey Monkey

Rate your Skill as a C21<sup>st</sup> Century Collaborator

Name: \_\_\_\_\_ Group: \_\_\_\_\_

Rate your performance by using the scale.

Best Effort '5' ..... to ..... Least Effort '0'

Skills in used in group/team work	I give myself a: ? /5
I focused on the 9Es	
I arrived, to class, on time	
I was well prepared for each group activity	
I knew what was going on during our group activities	
I knew exactly what my role & responsibilities were	
I learnt & used everybody's name	
I sat with the group	
I shared space equally with my group members	
I was keen to get started	
I stayed on task & was not distracted	
I made direct eye contact when speaking	
I used a clear, calm voice	
I shared my thoughts	
I justified my opinions	
I allowed others to speak (respectful listener)	
I considered other group members' opinions as valuable	
I asked questions in a polite manner	
I did not make personal comments	
I used positive language	
I was flexible & was prepared to rethink my opinions or ideas	
I participated in discussion to decide on who has what job in the group	
I worked well with group decisions	

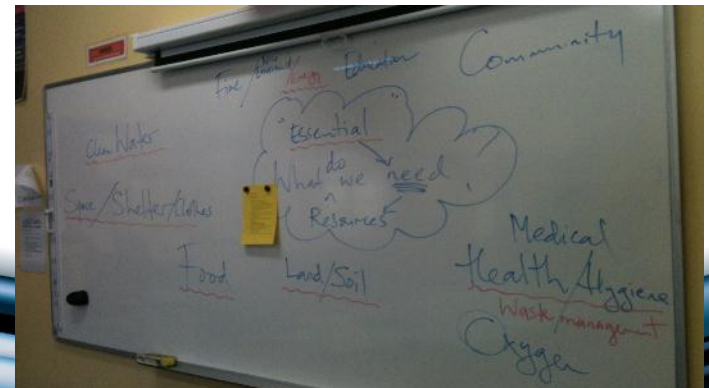


## The Visual 'Hook' to identify Essential Resources

eg : FOOD



What do you need ?



Brainstorm 6 essentials to life

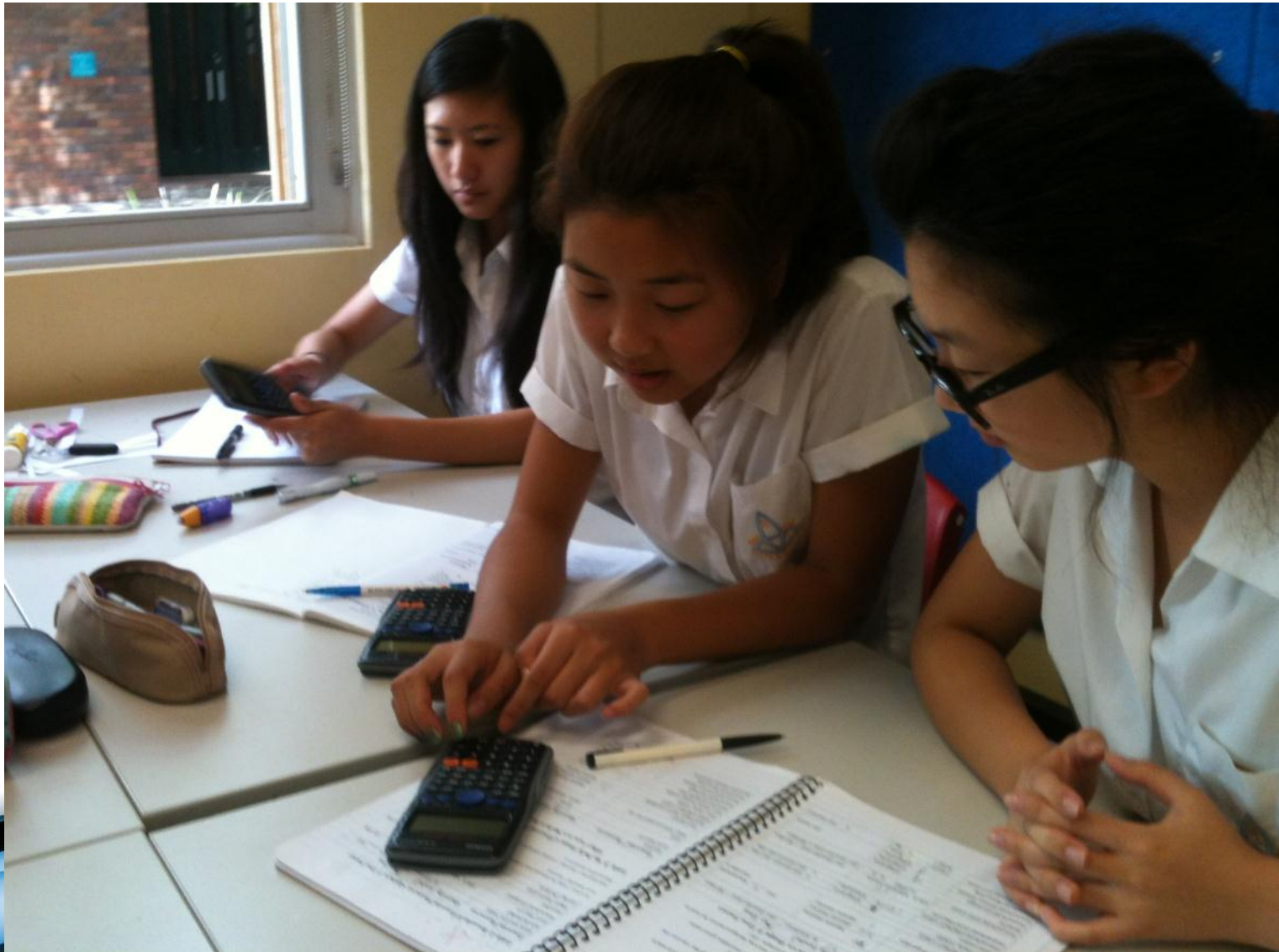


# Essential Resource Expert Groups researched Minimal *Survival* Needs





# Data Collection & Analysis of Household Resource Usage: *Thriving* excessively





# Thriving Vs Surviving Minimum Vs Modern Excess



Water

Energy

Space /Shelter

Soil

Food

Waste

# Australian Greenhouse Calculator & The Sustainable Table & Technologies for Sustainable Future..



Home > Animations

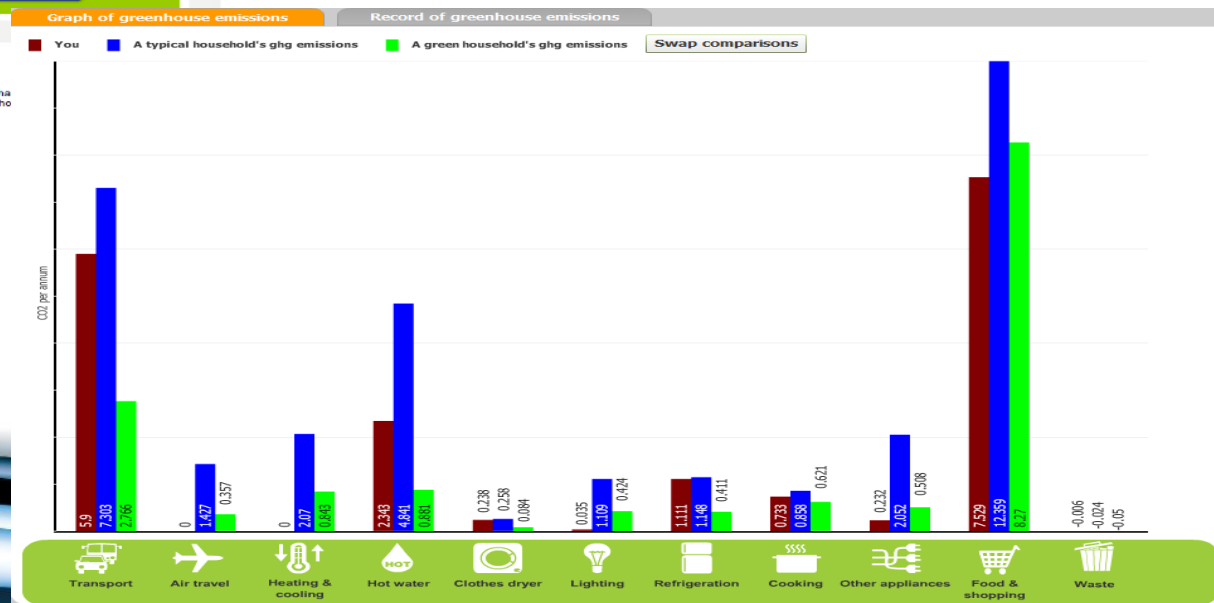


## Animations

Watch four animations to explore key issues relating to climate change screen to open the Chapter list. Select the Help icon to find out how

Students examined non-renewable resources: Stockcheck, to predict resource exhaustion dates.

Students assessed their own households using the Australian Greenhouse Calculator & identified lifestyle modifications needed & will re-calculate later in year to assess any positive changes in behaviour.





## Student Refrigerator Posters to REDUCE HOUSEHOLD WASTE

# Save Water

1. When washing dishes by hand, don't let the water run while rinsing.  
\* Fill one sink with wash water and the other rinse water or use a dishwasher

2. Use water-efficient showerheads. They are inexpensive and easy to install.  
\* By this you are saving up to 2840L of water a month

3. Take shorter showers! and turn off tap while brushing your teeth. Reduce time of the tap running

4. Collect rain water.  
\* Install a water tank or collect water from the roof to water your plants

5. Don't use the toilet as a rubbish bin  
\* Each time you flush a facial tissue or another you are wasting 20-25L of water

BY MINHEE SUNWOOD



SHOPPING

ROTATE

# FOOD

REDUCE • REUSE • REFRIGERATE



1- Menu plan your meals for a week so you then can create a shopping list you can stick to.

2- Food needs to be stored between 1 and 5 degree celcius for maximum freshness and longevity.

3- Use up your leftovers by using them in a different recipe instead of scraping it into the bin.

4- Don't throw away food. Fruit that is just going soft can be made into smoothies or fruit pies. Vegetables that are starting to wilt can be made into soup.

5- Set up a compost bin for fruit and vegetable peels. In a few months, you'll end up with rich, valuable, compost for your plants.

6- Serve small amounts of food with the understanding that everybody can come back for more once they've cleared their plates.

7- Rotate. When you buy new food from the store, push all the new items towards the back of your fridge or cupboard and bring the old items towards the front. You will run less risk of finding overdone or moldy food at the back of your food stores.



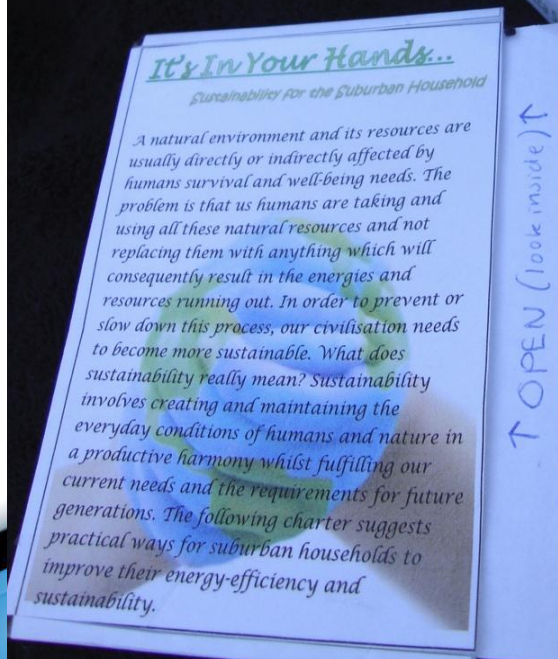
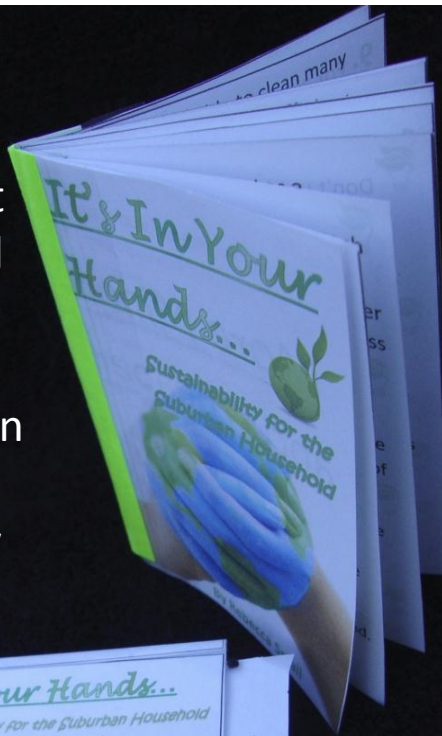
RICH SOIL



By Emma King



A Pocket Book to be available at the Council Chambers for new residents on how to live sustainably



## Student Charters for Sustainable Living

### Sustainable Live Charter for Suburbia: Sydney

Ella Coleman

- Be aware of the environment; join local environment groups e.g. Innerwest Environment group, the Friends of Lane Cove, National Park groups, Sustainability meet ups.
- Through these groups promote sustainable living

On average, a person uses 0.4 kL of water a day, or 400L. Try and lower this by:

- Showering for 5 minutes maximum
- Save and reuse washing up water
- Drain the water from the washing machine onto the garden
- Only wash clothes in the machine when you have a full load
- Use cold water in the washing machine, dishwasher etc.

Electricity is one of the most used resources, and on average, one person uses 3.75 kW a day. You can save money and the environment by:

- Use fans instead of air conditioning. Fans can cool you by 3 degrees. Air conditioners also cool unnecessary spaces, like the ceiling.
- If you are using air conditioners, make sure it is the right size for the space.
- Australian appliances have star energy ratings. The more stars, the more energy efficient.
- Turn off lights, electrical appliances and power points when they are not in use.

Reduce, Reuse, And Recycle! Each Australian creates around 1 tonne of rubbish per year. We also waste enough water to fill Sydney Harbour 3 times.

- Recycle everything possible. The less that goes the landfill, the better
- Start composting, using your food scraps. This can be later used to fertilise your garden.
- Have a bucket in your shower and use that water to water the garden.

Be conscious with your ways of living and its impact on the environment. We can change this, little by little.

Find out more about environmental groups in Sydney:

<http://www.bcl.com.au/sydney/intgroup/environmental.htm>

Find out more about sustainability:

<http://www.sydneywater.com.au/SW/your-home/using-water-wisely/water-wise-tips/index.htm>

<http://www.energyrating.gov.au>

<http://www.livinggreener.gov.au/waste/recycling/reduce-reuse-recycle>

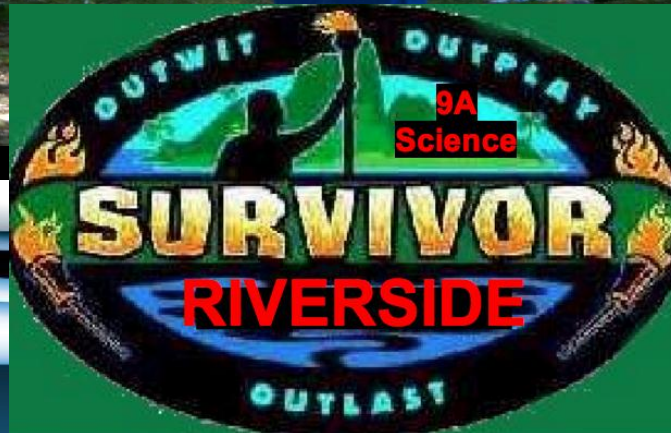


## Self Reflection & Peer – Product Evaluation





## Celebration: One girl alone in the wilds of Riverside



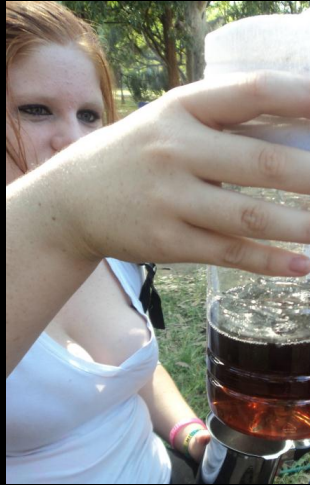
RIVERSIDE  
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Solely dependent on essential resource teams using only natural 'found' materials





Waste



Water



Essential Resource Teams



Shelter



Fire / Energy



Food/Bush Tucker









# Future Plans.... *Riverside Dreaming Bush Tucker Herb Company*

## A joint Science-Hospitality-Indigenous venture



**RIVERSIDE**  
GIRLS HIGH SCHOOL

You're welcome to follow us  
on  
[www.riversideghs.com.au](http://www.riversideghs.com.au)



*Proud to be a NSW government comprehensive  
girls' school in inner city Sydney, NSW, Australia*

