WIPING OUT WASTE 2019

Rumbalara Environmental Education Centre

RUMBALARA
ENVIRONMENTAL EDUCATION CENTRE

CLEANAWAY
Making a sustainable future possible

Central Coast Council

wise about waste

Has transformed into…

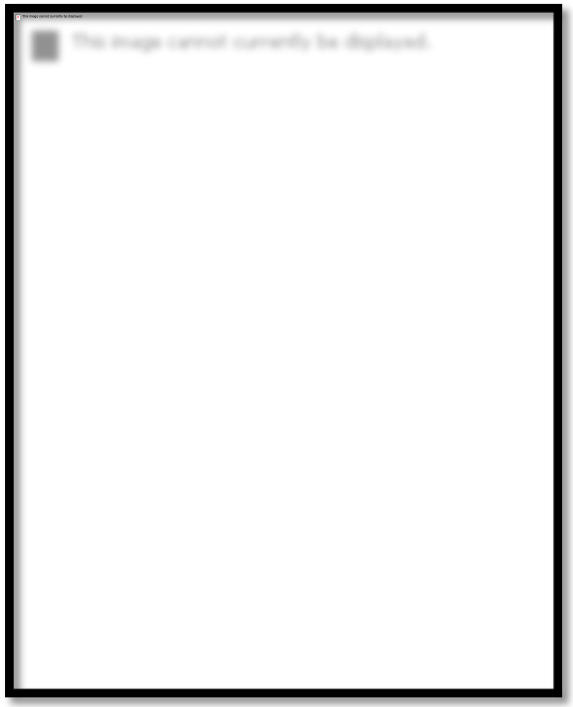
Wiping Out Waste W.O.W

RUMBALARA ENVIRONMENTAL EDUCATION CENTRE

Central Coast Council

CLEANAWAY
Making a sustainable future possible

Inspiration from this guy…Craig Reaucassel



WIPING OUT WASTE 2019

Aim:

- less waste to landfill
- maximise resource recovery
- creating a zero waste culture in the eight school communities participating
- changing habits and changing behaviours

Intended benefits: financial savings for each school and achieving sustainability outcomes.

This is a Pilot Program is delivered by Rumbalara Environmental Education Centre, funded by Central Coast Council and supported by Cleanaway kNOw Waste Educators.

Science and Technology K-6 Syllabus

Science and Technology Curriculum - Wiping Out Waste

Objectives

Skills

Students develop and apply skills in:

- **scientific inquiry** through the process of working scientifically
- design and production processes in the **development of solutions**

Knowledge and Understanding

Students develop knowledge and understanding of:

- the natural world including living things, **materials**, forces, energy, and Earth and space
- the built environment including **engineering principles and systems**, food and fibre production, and **material technologies**
- digital technologies including digital systems and how **digital technologies represent data**

Values and Attitudes

Students:

- value the importance and contribution of science and technology in **developing solutions for current and future personal, social and global issues and in shaping a sustainable future**
- appreciate the importance of **using evidence and reason** to engage with and **respond** to **scientific and technological ideas as informed, reflective citizens**
- **value developing solutions** to problems and **meeting challenges** through the application of Working Scientifically, and Design and Production skills.

The Science and Technology K–6 syllabus content is organised into Stages from Early Stage 1 to Stage 3. The outcomes are presented as:

- Skills
- Knowledge and Understanding.

The knowledge and understanding in Science and Technology K–6 are developed through the skills of Working Scientifically, and Design and Production. By the end of each Stage, students will have had opportunities to investigate scientifically and apply their knowledge and understanding in the creation of designed solutions.

Science and Technology K–6	
Working Scientifically Design and Production	Physical World
Living World	Earth and Space
Material World	Digital Technologies

Outcomes

Table of Objectives and Outcomes – Continuum of Learning

Skills

Objectives

Students develop and apply skills in:

- **scientific inquiry** through the process of working scientifically
- design and production processes in the **development of solutions**
- design and production of digital solutions

Early Stage 1 outcomes A student:	**Stage 1 outcomes** A student:	**Stage 2 outcomes** A student:	**Stage 3 outcomes** A student:
STe-1WS-S observes, questions and collects data to communicate ideas	**ST1-1WS-S** observes, questions and collects data to communicate and compare ideas	**ST2-1WS-S** questions, plans and conducts scientific investigations, collects and summarises data and communicates using scientific representations	**ST3-1WS-S** plans and conducts scientific investigations to answer testable questions, and collects and summarises data to communicate conclusions
STe-2DP-T develops solutions to an identified need	**ST1-2DP-T** uses materials, tools and equipment to develop solutions for a need or opportunity	**ST2-2DP-T** selects and uses materials, tools and equipment to develop solutions for a need or opportunity	**ST3-2DP-T** plans and uses materials, tools and equipment to develop solutions for a need or opportunity
	ST1-3DP-T describes, follows and represents algorithms to solve problems	**ST2-3DP-T** defines problems, describes and follows algorithms to develop solutions	**ST3-3DP-T** defines problems, and designs, modifies and follows algorithms to develop solutions

Science and Technology K-6 Syllabus

Knowledge and Understanding

Objectives

Students develop knowledge and understanding of:

- the natural world including living things, **materials**, forces, energy, and Earth and space
- the built environment including **engineering principles and systems**, food and fibre production, and **material technologies**
- digital technologies including digital systems and how **digital technologies represent data**

Early Stage 1 outcomes A student:	Stage 1 outcomes A student:	Stage 2 outcomes A student:	Stage 3 outcomes A student:
STe-3LW-ST explores the characteristics, needs and uses of living things	**ST1-4LW-S** describes observable features of living things and their environments	**ST2-4LW-S** compares features and characteristics of living and non-living things	**ST3-4LW-S** examines how the environment affects the growth, survival and adaptation of living things
	ST1-5LW-T identifies how plants and animals are used for food and fibre products	**ST2-5LW-T** describes how agricultural processes are used to grow plants and raise animals for food, clothing and shelter	**ST3-5LW-T** explains how food and fibre are produced sustainably in managed environments for health and nutrition
STe-4MW-ST identifies that objects are made of materials that have observable properties	**ST1-6MW-S** identifies that materials can be changed or combined	**ST2-6MW-S** describes how adding or removing heat causes a change of state	**ST3-6MW-S** explains the effect of heat on the properties and behaviour of materials
	ST1-7MW-T describes how the properties of materials determine their use	**ST2-7MW-T** investigates the suitability of natural and processed materials for a range of purposes	**ST3-7MW-T** explains how the properties of materials determines their use for a range of purposes

Objectives

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Early Stage 1 outcomes A student:	Stage 1 outcomes A student:	Stage 2 outcomes A student:	Stage 3 outcomes A student:
STe-5PW-ST observes the way objects move and relates changes in motion to push and pull forces	**ST1-8PW-S** describes common forms of energy and explores some characteristics of sound energy	**ST2-8PW-ST** describes the characteristics and effects of common forms of energy, such as light and heat	**ST3-8PW-ST** explains how energy is transformed from one form to another
	ST1-9PW-ST investigates how forces and energy are used in products	**ST2-9PW-ST** describes how contact and non-contact forces affect an object's motion	**ST3-9PW-ST** investigates the effects of increasing or decreasing the strength of a specific contact or non-contact force
STe-6ES-S identifies how daily and seasonal changes in the environment affect humans and other living things	**ST1-10ES-S** recognises observable changes occurring in the sky and on the land and identifies Earth's resources	**ST2-10ES-S** investigates regular changes caused by interactions between the Earth and the Sun, and changes to the Earth's surface	**ST3-10ES-S** explains regular events in the solar system and geological events on the Earth's surface
STe-7DI-T identifies digital systems and explores how instructions are used to control digital devices	**ST1-11DI-T** identifies the components of digital systems and explores how data is represented	**ST2-11DI-T** describes how digital systems represent and transmit data	**ST3-11DI-T** explains how digital systems represent data, connect together to form networks and transmit data

United Nations

Learning to be less wasteful is part of being a good global citizen.
Sustainability is about considering the needs of future generations.

Participating Schools

1. Terrigal Public School
2. Woodport Public School
3. Chertsey Public School
4. Holgate Public School
5. Tuggerawong Public School
6. Wamberal Public School
7. Terrigal High School
8. Holy Cross Catholic School

Wiping Out Waste - Program

- Committee Meeting (REEC + School)
- Professional Development (REEC + School)
- Waste Collection #1 (School)
- Waste Audit #1 (REEC + School)
- Schools Action Plan & Implementation (School)
- Cleanaway **kNOw waste** Program (Cleanaway + School)
- Waste Collection #2 (School)
- Waste Audit #2 (REEC + School)
- WOW School Report (REEC)

Problems and Solutions
Who? When? Where? How? Why?

1. Getting whole school community commitment
2. How to make our recycling program sustainable
3. How do we encourage families/students to have nude food/zero waste lunches?
4. Contamination of the recycling bins
5. Finding time at school when everyone is busy
6. Clean soft plastic going into landfill, when it can be recycled (via Redcycle bins at most major supermarkets)
7. Eligible drink containers going into landfill, when they can be recycled for 10c each (via Return & Earn/Envirobank)
8. Recyclable items going into landfill, when they can be recycled (yellow lid bin)
9. Large quantities of re-usable (printed on one side only) clean office paper going into landfill or recycling
10. Food waste and compostable paper going to landfill

Waste Audit Day – Sorting it Out

Terrigal Public School
Waste Audit Day 15/2/19

BEFORE

AFTER

Woodport Public School
Waste Audit Day 22/2/19

BEFORE

AFTER

Chertsey Public School
Waste Audit Day 22/3/19

BEFORE

AFTER

Holgate Public School
Waste Audit Day 29/3/19

BEFORE **AFTER**

Tuggerawong Public School
Waste Audit Day 5/4/19

BEFORE

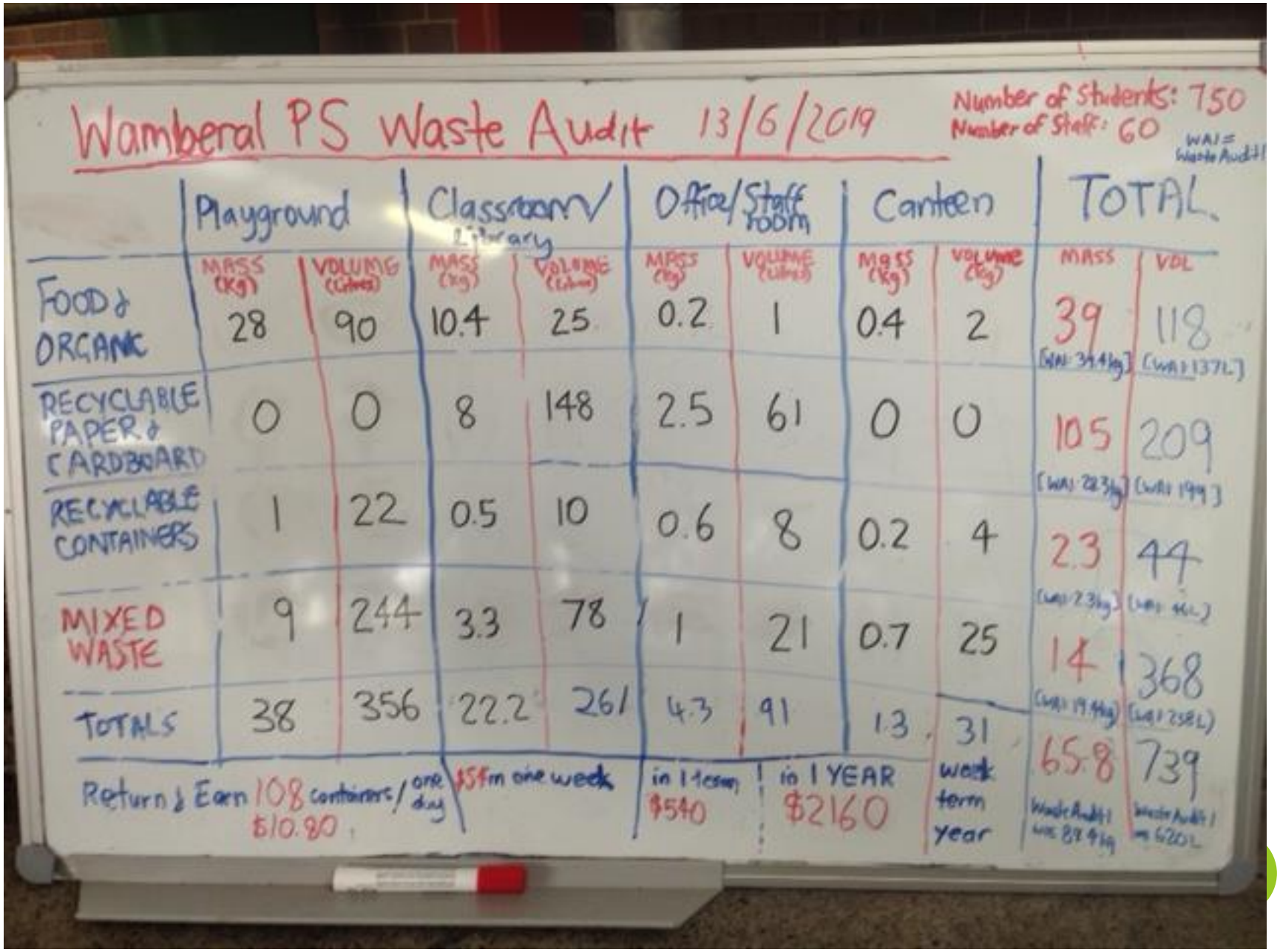
AFTER

Wamberal Public School
Waste Audit Day 2/5/19

BEFORE

AFTER

One Day's Food waste from Wamberal PS – sorted into bread scraps (chook food) 3/11, fruit scraps (worm food) 6/11 and uneaten people food – afternoon tea 2/11!!



Wamberal PS Waste Audit 13/6/2019

Number of Students: 750
Number of Staff: 60
WAI = Waste Audit

	Playground		Classroom/ Library		Office/Staff room		Canteen		TOTAL	
	MASS (kg)	VOLUME (Litres)	MASS (kg)	VOLUME (Litres)	MASS (kg)	VOLUME (Litres)	MASS (kg)	VOLUME (kg)	MASS	VOL
FOOD & ORGANIC	28	90	10.4	25	0.2	1	0.4	2	39 [WAI: 34.4kg]	118 [WAI: 137L]
RECYCLABLE PAPER & CARDBOARD	0	0	8	148	2.5	61	0	0	105 [WAI: 223kg]	209 [WAI: 199]
RECYCLABLE CONTAINERS	1	22	0.5	10	0.6	8	0.2	4	23 [WAI: 23kg]	44 [WAI: 46L]
MIXED WASTE	9	244	3.3	78	1	21	0.7	25	14 [WAI: 19.4kg]	368 [WAI: 258L]
TOTALS	38	356	22.2	261	4.3	91	1.3	31	65.8 Waste Audit WAI: 87.4kg	739 Waste Audit WAI: 620L

Return & Earn 108 containers/ one day $10.80

$54 in one week

in 1 term $540

in 1 YEAR $2160

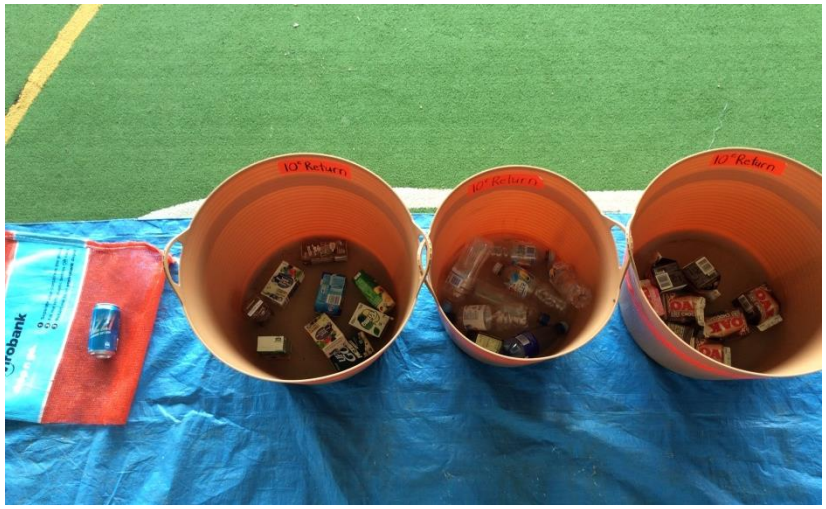
week
term
year

General Waste - Red

Mixed Recyclables - yellow

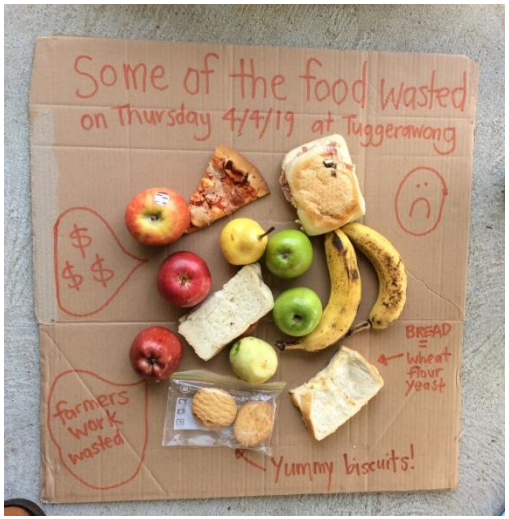
Paper and Cardboard - blue

10c Returns - Orange



Soft Plastics - Purple

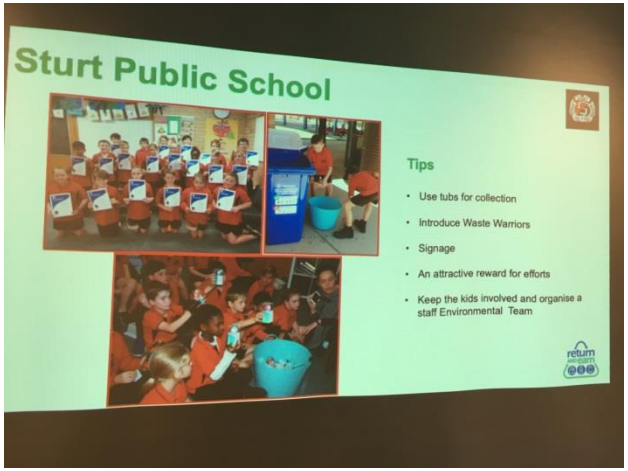
Food/organic Waste - Green

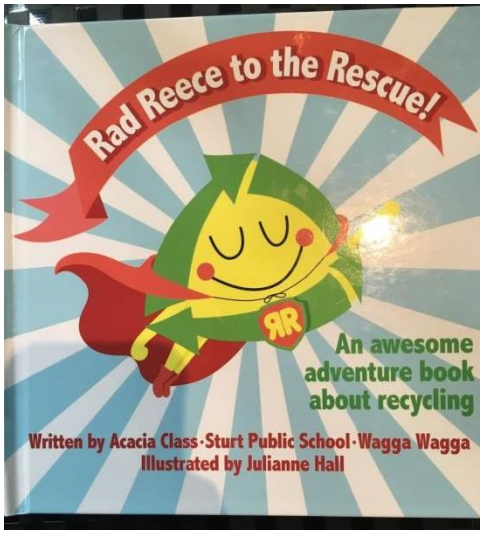


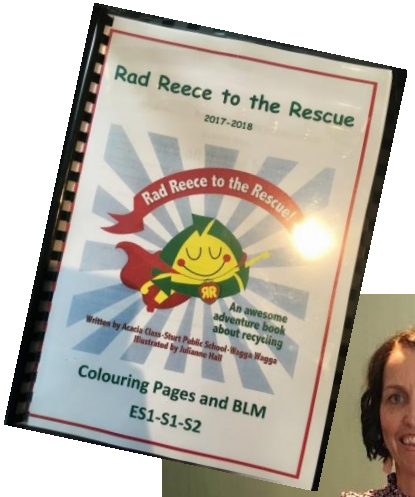
Food/organic Waste - Apples

The Big Issues

School Success Stories







What have we learned?

Best things:

- Professional Learning
- WOW committees
- Talking with cleaners & GA's
- Viewing of waste by whole school
- Maths!!!
- Some Principals allocated staff to work with us
- All photos, videos and data we collected

Things to change:

- Bring coloured buckets on Audit day only – not Collection Day
- Meet with Admin staff to look over bills
- Require WOW committee to submit action plan
- Allow more time to make changes
- Manage small grant funds via a WOW shop credit