

Three Bin Service Sorting Game

LESSON OBJECTIVES

Student knowledge and understanding of:

- the City of Onkaparinga's kerbside three bin service and materials that can be placed in each bin
- what is meant by contamination and why it is a problem.

At the end of the lesson, students will be able to:

- place household items, green organics and recyclable items into the correct bins
- know where to find more information on recycling in the City Onkaparinga.

TIME: 50 – 60 Minutes

MATERIALS REQUIRED

- student workbooks and pencils
- Household recycling and disposal guide – City of Onkaparinga

OR

City of Onkaparinga waste and recycling

www.onkaparingacity.com/onka/living_here/waste_recycling.jsp

- What goes in your bin handout
- Three bin sorting game waste and recyclable items handout
- selection of waste and recycling items from list/handout
- sorting bins
 - may be cardboard boxes or plastic storage containers
 - it is important that they are clearly labelled and colour coded (red, yellow and green).

INTRODUCTION

Introduce students to the City of Onkaparinga's kerbside three bin service.

- waste to landfill bin – red lidded – collected weekly
- recycling bin – yellow lidded – collected every 2 weeks
- green organics bin – green lidded – collected every 4 weeks.

DISCUSSION

- how to identify each bin
- what belongs in each bin – refer to handout.

GUIDING AND INFORMING

The issue of bin contamination

Introduce students to issue of waste as contamination.

- What is contamination?
 - Contamination is a term used to refer to incorrect materials in the bins.

Examples of contamination:

Waste Bin	Recycling Bin	Green Organics Bin
Building material	Plastic bags	Plastic pots
E-waste	Foam	Bricks and rubble
Fluorescent lighting	Nappies	Soil
Hazardous waste	Batteries	Glass

Contamination is a serious problem for kerbside collection services. It must be removed from the recycling and green organics before it can be processed. Contamination can:

- pose health risks for workers at recycling facilities
- cause breakdowns at recycling sorting facilities, for example clothing can wrap around conveyor belts and motors
- cause whole truck-loads of material to be dumped at landfill
- reduce the value of recycled products
- increase the cost of kerbside collection services

EPA South Australia bans to landfill

The Environment Protection Authority (EPA) South Australia in 2010 to 2013 banned specific items from going to landfill, including e-waste, whitegoods, fluorescent lighting, oil, non-alkaline batteries, hazardous and medical waste, and PVC or PS plastic packaging. That means none of the items listed on the EPA bans to landfill list can go in the bin.

For a full listing of banned items, visit the EPA SA website:

www.epa.sa.gov.au/data_and_publications/standards_and_laws/waste_to_resources_policy/landfill_bans

A recent audit (2014) in the City of Onkaparinga found that on average, 13% of the recycling bin contents is contamination.

One of the most common forms of contamination in the recycling bin is soft plastics. Soft plastics are plastics you can easily scrunch in your hand such as plastic bags and wrappers, cling wrap or bubble wrap. These soft plastics are accepted for recycling at Coles supermarkets. Woolworths also accept plastic shopping bags for recycling.

Another common recycling bin contaminant is foam. Polystyrene and styrofoam packaging, disposable cups, meat trays and take away containers are different examples of foam. Never place any form of foam in your kerbside recycling bin. Foam breaks up into tiny pieces during the recycling sorting process and becomes very difficult to separate from other materials.

Green organic materials can be placed in the green organics bin, including tissues, serviettes, shredded paper and hair. Green organics are composted to make compost and mulches. Non-biodegradable materials do not breakdown during the composting process and contaminate the finished product.

LEARNING ACTIVITY

Three bin sorting game

Students set up a 'mock' kerbside three bin system in the classroom and sort a variety of materials into the correct bin.

1. Introduction of waste and recycling game

Set up the waste and recyclable materials at the front of the classroom. Ensure they are mixed up and on display to the students. Place the three 'mock' bins to the side of the waste and recycling material.

2. Small group work

Break the class up into small groups of four or five students. One group at a time comes to the front of the classroom and each student then places one item into the bin they select. The activity continues until all material is placed in bins.

3. Three bin sorting check

Once all materials have been placed in bins the teacher leads the students through the learning activity to check the results. Remove one item at a time from the bins and check whether or not it has been placed in the correct bin.

NOTE: Teacher to record information on the white/smart board, set out as described below.

4. Recording information

Using their workbooks students divide the page into three columns. Label the first column Waste to landfill (red), the second column Recycling (yellow); and the third column Green Organics (green). Students record in which column/bin each of the items belongs.

5. Class discussion

Discuss the issue of waste contamination in the recycling and green organics bin.

- What happens when the materials are placed in the incorrect bin?
- What happens if recyclables are placed in the waste bin?
- What could you do to ensure the correct items and materials go in the right bin at home and/or at school?

Highlight information available on www.onkaparingacity.com/recyclingrevolution in relation to the kerbside three bin service.

SHARING AND REFLECTING

Students working in small groups discuss and note what they have learnt from the sorting game activity.

- How do they feel about what they have learnt?
- What is something they have learnt from the activity?
- Do they better understand waste and recycling, and bin collections?
- Is there anything they could do to help better dispose of waste to landfill material, green organics and recyclable objects correctly?

Groups then share and reflect what they have learned with the whole class.

ASSESSING STUDENT LEARNING

Assessment to occur on the following:

- listening skills
- participation and involvement in class discussion
- participation, involvement and completion of the learning activity.

EXTENSION

Mini three bin sorting card game – class set

Available from: Woodcroft library bookable collection

Organisational library membership and bookings required

Phone: 8384 0666

email: libraries@onkaparinga.sa.gov.au

RESOURCES

City of Onkaparinga: A–Z recycling & disposal guide

www.onkaparingacity.com/onka/living_here/waste_recycling/recycling_disposal_guide.jsp

City of Onkaparinga: waste and recycling

www.onkaparingacity.com/onka/living_here/waste_recycling.jsp

Clean Up Australia

www.cleanup.org.au/au/

Drag and Drop game – City of West Torrens

www.westtorrens.sa.gov.au/Environment_waste/Waste_recycling/Waste_recycling_games

EPA South Australia: bans to landfill

www.epa.sa.gov.au/data_and_publications/standards_and_laws/waste_to_resources_policy/landfill_bans

Household Recycling & Disposal Guide by City of Onkaparinga

KESAB

www.kesab.asn.au

Planet Ark

www.planetark.org

Recycle Right at home – Zero Waste SA channel

www.youtube.com/watch?v=MMTSEHnhl4k

Waste Nott recycling store

City of Onkaparinga – Beach Road, Hackham West

Wipe Out Waste

www.wow.sa.gov.au

Zero Waste / Green Industries SA

www.zerowaste.sa.gov.au

WHAT GOES IN YOUR BIN – QUICK REFERENCE LIST

Waste Bin – Red Lid

WASTE TO LANDFILL

- ✓ aluminium foil
- ✓ ceramics
- ✓ cigarette butts and ash
- ✓ clothing, material and shoes
- ✓ foam – styrofoam, polystyrene i.e. food trays, containers and packaging
- ✓ food waste (fruit and vegetable scraps in green organics bin)
- ✓ household glassware – mirrors, plates, drinking glasses and pyrex
- ✓ nappies
- ✓ pet waste and litter
- ✓ smoke alarms
- ✓ soft plastics – plastic bags, cling wrap and bubble wrap
- ✓ tablet blister packs
- ✓ some landscaping and building material – treated timber, PVC pipes, garden tools and hose
- ✗ No batteries
- ✗ No building waste
- ✗ No e-waste
- ✗ No fluorescent light globes
- ✗ No oil

Recycling Bin – Yellow Lid

RECYCLE MORE, RECYCLE RIGHT

- ✓ paper and cardboard
- ✓ aluminium, steel and aerosol cans
- ✓ aluminium foil trays (no aluminium foil)
- ✓ metal pots, pans and cutlery
- ✓ glass bottles and jars
- ✓ milk and juice cartons
- ✓ plastic kitchenware
- ✓ hard plastics/ packaging – containers, bottles and lids
- ✓ household plastics – toys, buckets, plant pots and storage containers
- ✗ No foam
- ✗ No soft plastics – Plastic bags are accepted for recycling at various supermarkets

Green Organics Bin – Green Lid

IF IT GROWS, IT CAN GO IN THE GREEN BIN

- ✓ garden prunings and lawn clippings
- ✓ small twigs and branches – no larger than 15cm diameter
- ✓ cut flowers and leaves
- ✓ fruit and vegetable peelings
- ✓ hair and pet fur, dog poo – no bag
- ✓ paper – shredded paper, serviettes, tissues and paper towel

THREE BIN SORTING GAME – WASTE AND RECYCLABLE ITEMS

Newspaper	Catalogues
Magazines	Paper towel
Cereal box	Tissues
Muesli bar box	Cardboard box
Tea boxes	Shredded paper
Soft drink bottle	Juice carton
Plastic plant pot	Plastic bucket
Plastic toy	Ice-cream container
Bubble wrap	Cream container
Plastic cling wrap	Yoghurt tubs/containers
Plastic shopping bag	Butter/margarine container
Milk bottle/carton & lid	Shampoo/conditioner container
Glass jar	Disposable water bottle
Coffee tin/jar	Disposable plastic cutlery & plates
Wrapping paper	Foam meat tray
Foam cup	Foam packaging
Old shoes and clothing	Glass plate or drinking glass
Material and textiles	Steel can
Aluminium foil	Aluminium trays
Metal saucepan or pots	Aluminium can
Small branches/sticks	Grass clippings
Flowers and leaves	Weeds

AUSTRALIAN CURRICULUM LINKS

Recycling Research Project

ENGLISH

Literacy, interacting with others

- Listen to and contribute to conversations and discussions to share information and ideas and negotiate in collaborative situations (ACELY1676) Year 3.
- Clarify understanding of content as it unfolds in formal and informal situations, connecting ideas to students' own experiences, and present and justify a point of view (ACELY1699) Year 5.
- Participate in and contribute to discussions, clarifying and interrogating ideas, developing and supporting arguments, sharing and evaluating information, experiences and opinions (ACELY1709) Year 6.

HUMANITIES AND SOCIAL SCIENCES: HASS

Inquiry and skills

Evaluating and reflecting

- Draw simple conclusions based on analysis of information and data (ACHASSI058) Year 3, (ACHASSI079) Year 4.
- Interact with others with respect to share points of view (ACHASSI059) Year 3, (ACHASSI080) Year 4.
- Reflect on learning to propose actions in response to an issue or challenge and consider possible effects of proposed actions (ACHASSI060) Year 3, (ACHASSI081) Year 4.
- Evaluate evidence to draw conclusions (ACHASSI101) Year 5, (ACHASSI129) Year 6
- Work in groups to generate responses to issues and challenges (ACHASSI102) Year 5, (ACHASSI130) Year 6.
- Use criteria to make decisions and judgements and consider advantages and disadvantages of preferring one decision over others (ACHASSI103) Year 5, (ACHASSI131) Year 6.
- Reflect on learning to propose personal and/or collective action in response to an issue or challenge, and predict the probable effects (ACHASSI104) Year 5, (ACHASSI132) Year 6.
- Evaluate and synthesise evidence to draw conclusions (ACHASSI159) Year 7.

KNOWLEDGE AND UNDERSTANDING

Geography: concepts for developing understanding

- The use and management of natural resources and waste, and the different views on how to do this sustainably (ACHASSK090) Year 4.

Economics and business: concepts for developing understanding

- The difference between needs and wants and why choices need to be made about how limited resources are used (ACHASSK119) Year 5.
- Types of resources (natural, human, capital) and the ways societies use them to satisfy the needs and wants of present and future generations (ACHASSK120) Year 5.
- Influences on consumer choices and methods that can be used to help make informed personal consumer and financial choices (ACHASSK121) Year 5.