

Educator workbook

CAPS-aligned

Grade 4 - 6

Educating future
leaders by teaching
them to care for the
environment.

Life Skills

English

Natural Sciences
and Technology





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Section A Introduction

Foreword

Petco Producer Responsibility Organisation NPC is a Producer Responsibility Organisation (PRO), incorporated in 2004, that administers Extended Producer Responsibility (EPR) schemes on behalf of its members for various identified products in the packaging sector. Petco serves as a national organisation responsible for driving recycling activities, unlocking the collection and recycling value chain, guiding product design, stimulating end-use markets for recycled material, carrying out education and awareness initiatives and building the required local recycling infrastructure and capacity.

Petco is a collective organisation, set up by our producer members to fulfil their extended producer responsibility obligations, by taking accountability for their products throughout its entire life cycle, as mandated by Section 18 of the National Environmental Management: Waste Act. Petco is committed to driving change towards a circular economy in South Africa's packaging industry.

Petco has created this user-friendly, fun, and factual Educators' Workbook to help teach learners how their actions can have a less harmful impact on the environment. They will learn that littering is a bad habit, as well as the different things that can be done with waste. By completing the activities together with your learners, you will teach them lessons that they will remember for life. The activities, which are aligned to the CAPS curriculum, cover the curriculum standards of various learning areas, and have been designed to ensure that learners have fun while learning.

You can assist your learners by encouraging them not to litter, and to:

- reduce waste;
- reuse materials;
- collect materials that can be recycled;
- take responsibility for their environment and to mobilise others to do the same.

The primary learning areas covered in this guide are:

Grade 4: Life Skills Term 4 (Health and environmental responsibility); English Term 1 (Reading and Viewing).

Grade 5: Natural Sciences and Technology Term 2 (Matter and Materials; Processing); English First Additional Language Term 3 (Reading and Viewing); Life Skills Term 3 (Health and environmental responsibility).

Grade 6: Mathematics (Data Handling); English (Writing and Presenting).

Many of the activities in this guide are based on the poster ('People in the life of a recycled plastic bottle'):

1. Consumers
2. Collectors
3. Recyclers
4. Convertors
5. Bottlers/Fillers
6. Brand Owners
7. Retailers

While some activities relate to the poster as a whole, others focus on one or two of the people and/or related processes (e.g. 'recycling'). Ensure that your learners have a full overview of the cycle before doing the individual activities. It may also be helpful for you to read the whole Teacher Guide, in preparation, as different processes are explained in detail in various sections of the guide. A vocabulary table is provided in the Resource Section which defines words that are frequently used in this guide. You may wish to make a copy of the table for your learners.

The poster and activities are aimed at teaching learners the 4R's that will help them to make wiser choices about managing the amount of waste that they create and to become aware of the need to protect their local environments, as well as planet Earth as a whole.

Introduction



Section A Introduction

The 4R's are:

Refuse: Say "no" to items you don't need, including single-use items where possible and ask yourself twice if you really need them. Try to avoid using items like plastic knives and forks or drink stirrers.

Reduce: Think about what is needed and what is not. Whenever possible, we can make choices to reduce the things we use. For example, you can pack your school lunch in a reusable lunch box.

Reuse: Reusing comes before recycling. This means that, if we can, we should try to reuse things before we throw them away or recycle them. For example, you can reuse a plastic peanut butter jar to store rice or dried fruit.

Recycle: Recycling means to use packaging and other products to remake new goods that can be sold and used again. Choose packaging that can be recycled. Start a waste collection system in your home or school and recycle as much as possible.

Summary: What can and cannot be recycled yet

	What can be recycled	What can't be recycled
Glass	• Cold drink, juice, and water bottles • Beer, wine and liquor bottles • Food and sauce containers • Clear drinking glasses	• Windscreens, window glass • Non-clear drinking glasses • Mirrors • Light bulbs
Plastic	• Cold drink, juice, and water bottles • Shampoo bottles • Soap/dishwashing liquid bottles • Plastic jars • Milk bottles • Sauce bottles • Plastic furniture • Buckets • Plastic shopping bags and bread bags • Bottle caps	• Any plastic that does not have a polymer identification code on it. A polymer identification code looks like this, with a number from 1-7 inside it:  • PET bottles that have the ink label printed directly onto the plastic • PET bottles with a metal cap and closure • Brightly coloured, neon, opaque or metallic PET bottles
Metal	• Aerosol cans • Cold drink and juice cans • Bottle caps • Tinfoil trays • Food cans • Metal containers, tinfoil	• Paint cans, motor oil cans • Batteries • CDs • Anything that contains mercury or lead
Paper	• Magazines, newspapers, books • Office and shredded paper • Envelopes • Cardboard boxes of any kind • Paper cartons for food and drink	• Used paper plates • Disposable nappies, tissues, and toilet paper • Used cement bags • Used dog food bags • Laminated paper

NB - PLEASE NOTE:

- *1. The number (in the symbol) does not mean that it can be recycled X number of times or that it has been recycled X number of times.
2. Remember to always check in your area (with the municipality, local collection service or local collector) to see what can and can't be recycled.
3. Due to the implementation of mandatory EPR, many Producers are in the process of making plans to ensure that their packaging will get recycled. This means that many of the items mentioned in this workbook at the time of writing in 2021, as "what can't be recycled", will be able to be recycled in the near future. We ask you to please keep up to date with these changes and check the below resources so that you can amend the contents of this book as necessary for your learners.

Sources:

<https://theglassrecyclingcompany.co.za/how-to-recycle/>

<https://recyclepaper.co.za/about-paper-recycling/what-to-recycle/>

<https://www.plasticsinfo.co.za/wp-content/uploads/2019/10/All-About-Plastics-May2018.pdf>

<http://www.metpacsa.org.za/>



Section A Introduction

Background and Context

Pick n Pay School Club is celebrating its 19th year of providing much-needed educational material, which now reaches 111,300 teachers and 2.38 million learners across South Africa. The Petco learning programme is aligned to the CAPS curriculum, which adheres to the standards set by the Department of Education.

The material is designed to facilitate the learning process and culminates in the assessment of competency levels according to the standards set for each specific grade. The educator is supported by way of research and learning content that is presented clearly and is easy to implement in the classroom.

Introduction

Acronyms:

CAPS: Curriculum and Assessment Policy Statement
GET: General Education and Training



Section B

Intermediate Phase

Grade 4

Educator Guide

Name of Lessons: Be a planet protector!		Time: 3 x 30 minutes
Grade 4		Subject: Life Skills Term 4 (Health and environmental responsibility); English Term 1 (Reading and Viewing)
Curriculum Standards (CAPS): Life Skills Term 4: Topic 3 Health and environmental responsibility • Healthy environment and personal health: home, school and community - o Examples of environments that are unhealthy: pollution (air, water and land) including illegal dumping sites - o Dangers of unhealthy environments to personal health - o Strategies to keep environments healthy: conservation of environment English First Additional Language Term 1: Reading and Viewing • Does comprehension activity on the text (oral or written) - o Discusses new vocabulary from the read text - o Spells ten words from read text - o Revise alphabetical order Additional opportunities for extension and CAPS-alignment: Term 4: Social Sciences (Geography): Pollution and wastewater Term 2: Natural Sciences: Topic – Solid Materials (Raw and manufactured materials)		
Objectives		
The learners will be able to: • Identify the people who are involved in the recycling of a plastic bottle and define their roles. • Determine the reasons for recycling plastic. • Understand which types of plastic can and cannot be recycled.		
Content	Skills	Values
Learner Activity 1: I am a Planet Protector! • Waste • Litter • Recycling • Life cycle of a plastic bottle Learner Activity 2: My planet; My home • Environmental responsibility • Life cycle of a plastic bottle Learner Activity 3: Jabu the Collector • Reusing • Recycling	Learner Activity 1: I am a Planet Protector! • Comprehension Learner Activity 2: My planet; My home • Retention and sequencing • Alphabetical order Learner Activity 3: Jabu the Collector • Categorisation	Learners appreciate the importance of caring for the environment and that they are responsible for keeping it clean.
Resources needed		
Pencils/crayons; scissors (learners must be supervised when using scissors); glue; the Petco poster; photocopies of the Learner Activities; photograph of rubbish dump from Annexure; photograph of landfill from Annexure; a clear beverage bottle with the PET '1' symbol on it; if possible, let learners bring a variety of plastic bottles to school prior to the lessons.		
Teacher preparation before starting		
Study the lesson plans prior to the lessons and ensure you have all the resources required for the lessons. Familiarise yourself with content for the three lessons before the lessons start. Print sufficient Learner Activity worksheets.		

Section B

Intermediate Phase

Grade 4

Learner Activity 1: I am a Planet Protector!

Show learners an empty plastic bottle and/or the bottles that they have brought to class.

Ask:

- What do we do with plastic bottles when we have finished using them?

Explain:

- Waste refers to all the things that we throw away after we have used them. If we leave our waste in an open place, then it becomes litter.
- It is bad to leave litter lying around on the ground. The correct thing to do with waste is to put it in a waste bin.
- Waste and litter are bad for the environment.

Ask:

- What do you think happens to a plastic bottle once you have thrown it away?

Explain:

- All the things that we throw away land up in a rubbish dump or have to be taken away and buried in a landfill.
- Explain the term 'rubbish dump', using the definition provided as a guide. Show learners the picture of the rubbish dump (in the Annexure to this guide).
- Explain the word 'landfill', using the definition provided as a guide. Show learners a picture of the landfill (in the Annexure to this guide).
- The more things that we throw away, the more space is needed to bury all the waste and we are quickly running out of space. This is bad because we will soon have nowhere to put all the things that we throw away. But there is another option (choice)! Just because we have finished using something, does not mean that it must now get thrown away.
- Many of the things that we use every day can be reused or recycled.

Show:

- Show learners the PET '1' symbol at the bottom of the plastic bottle.
- Let learners look for the symbol on the plastic bottles that they have brought to class.
- Bottles or containers with other numbers besides a '1', are not made from PET. The different numbers on the bottles and containers tell us what type of plastic has been used to make them.
- See the Introduction to this guide for a rough guide on what can and cannot be recycled. Remember to always check in your area (with the municipality, local collection service or local collector) to see what can and can't be recycled.

NB: The number (in the symbol) does not mean that it can be recycled X number of times or that it has been recycled X number of times.

Explain:

- When a plastic bottle has the PET '1' symbol on it, it means that it can probably be recycled. This also depends on the colour of the bottle, and things like the design of the lid and label. (Learners will read more about this in Learner Activity 3).
- PET is a type of plastic used for containers, bottles and for other items.
- When we recycle our waste, we find new ways to use it so that it can be made into something else and it does not have to end up in a rubbish dump or landfill.
- PET bottles can be recycled into many new and useful things. Most importantly, they can be recycled and used to make brand new PET containers and bottles.
- When we make an effort to recycle, we are looking after our environment.
- People who look after their environment are planet protectors!

Refer:

- Refer the learners to the Petco poster.

Explain:

- When you have finished using a plastic bottle, that can be recycled, it goes through a few stages on its way to becoming a brand new bottle.
- The poster shows the seven different groups of people involved in the life of a recycled plastic bottle.

Read and discuss:

- Let seven different learners each read one of the roles.
- Discuss each of the roles.
- Answer questions that learners may have.

Complete the Learner Activity:

- Hand out the Learner Activity 1 worksheets.
- Learners write the name of each of the people in the life of a recycled plastic bottle in the drawing provided.
- Learners draw a picture of themselves as a Planet Protector in the middle of the drawing.
- Learners use the clues to write the names of the people.



Section B

Intermediate Phase

Grade 4

Educator Guide

Answers to Learner Activity:

Question 4:

- a) Recycler b) Retailer c) Bottler/Filler d) Consumer
e) Brand Owner f) Converter g) Collector

Learner Activity 2: My planet; My home

Explain:

- We are going to play a memory game! Let's see who has the best memory.

Refer:

- Refer the learners to the Petco poster.
- Let learners look at the poster for 30 seconds.
- Put the poster away (where the learners cannot see it).

Complete part 1 of the Learner Activity:

- Hand out the Learner Activity 2 worksheets.
- Learners cut out the pictures and stick them in the correct sequence on their 'My Planet; My Home' picture.

Ask:

- Why is it important to recycle or to reuse things?

Refer:

- Refer the learners to part 2 of the Learner Activity (Question 5).

Read:

- Read through the four reasons that it is important to recycle or reuse PET plastic bottles.
- Point out the four highlighted words (recycled, reusable, rewarding, responsible).

Complete part 2 of the Learner Activity:

- Learners unjumble the four words.
- Learners write the four words in alphabetical order (they all start with the letters 're', so learners have to use the third letter in each word to complete this question).

Answers to Learner Activity:

Question 7:

RECYCLED; RESPONSIBLE; REUSABLE; REWARDING

Learner Activity 3: Jabu the Collector

Explain:

- Very often, when we buy something, it is wrapped in plastic. This wrapping is called packaging.
- Packaging is the name given to the material used to enclose, protect, transport, and even promote things that are for sale.
- Most packaging that is made of paper, plastic, metal, or glass can be recycled e.g., a mug would be packaged in a box to be delivered.

Ask:

- Do you remember what the word 'recycle' means?

Explain:

- Explain the word recycle, using the definition provided as a guide.
- When waste that can be recycled is collected, it must be put into a separate bag from the other waste e.g. food.
- Explain the word material, using the definition provided as a guide.

Ask:

- What material are the following items (things) made from? Are they made from plastic, metal, glass, or paper? (Some may be made from more than one e.g. 'jars' may be plastic or glass.)
 - o Wine bottles; cold drink cans; magazines; water bottles; pizza boxes; jars; food tins; shopping bags.

Explain:

- The different materials that can be recycled need to be separated before they get to the recycler because we do different things with them when they get recycled.
- Some things that we use cannot be reused or recycled, at the moment, and must be thrown away or composted. (Compost is food waste and rotting plants that are used as food for growing new plants and food.)

These include:

 - o food;
 - o tissues, toilet paper and nappies cannot be reused or recycled;
 - o cigarette butts cannot be recycled;
 - o clothes cannot be recycled;
 - o chip packets, sweet wrappers or chocolate wrappers cannot be recycled.
- PET plastic bottles that are brightly coloured, or that you can't see through, do not get collected for recycling because it is hard to make new things with them.

Section B

Intermediate Phase

Grade 4

Complete the Learner Activity:

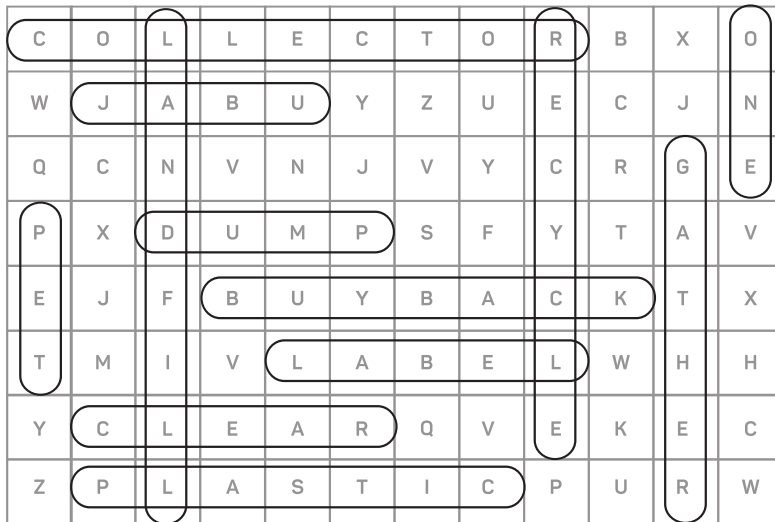
- Hand out the Learner Activity 3 worksheets.
- Learners will read about Jabu who is a collector.
- He is a planet protector because he works to make sure that all the things that can be recycled make their way to a buy-back centre and then to a recycler.
- Explain the word buy-back centre using the definition provided as a guide.
- Ensure that learners understand the important role that Jabu plays. Jabu either:
 - o sorts through household waste for the people who don't separate their waste from their recyclables; or
 - o if people have separated their recyclables, he will sort them to sell the valuable materials to the buy-back centre.
- Learners must spot the incorrect word/s in each sentence, cross it out and write the correct word/s in the space provided.
- Learners must find the words in the wordsearch puzzle.

Answers to Learner Activity:

Question 2:

- hundreds - thousands
- landfill - buy-back centre
- cannot - can
- '2' - '1'
- take-off - leave on

Question 3:



Extension:

- Let learners use each of the words in a story called 'I am a Planet Protector' to assess whether they understand the importance of recycling plastic (and other materials that can be recycled).
- In groups of 7, let learners create a play in which each learner is a different person in the life of a plastic bottle. (Some learners can play more than one role if groups of 7 are not possible.)

Assessment

Refer to the Resource Section for the Assessment Rubric.

Teacher reflection

Is there anything you would do differently if you taught this unit again?

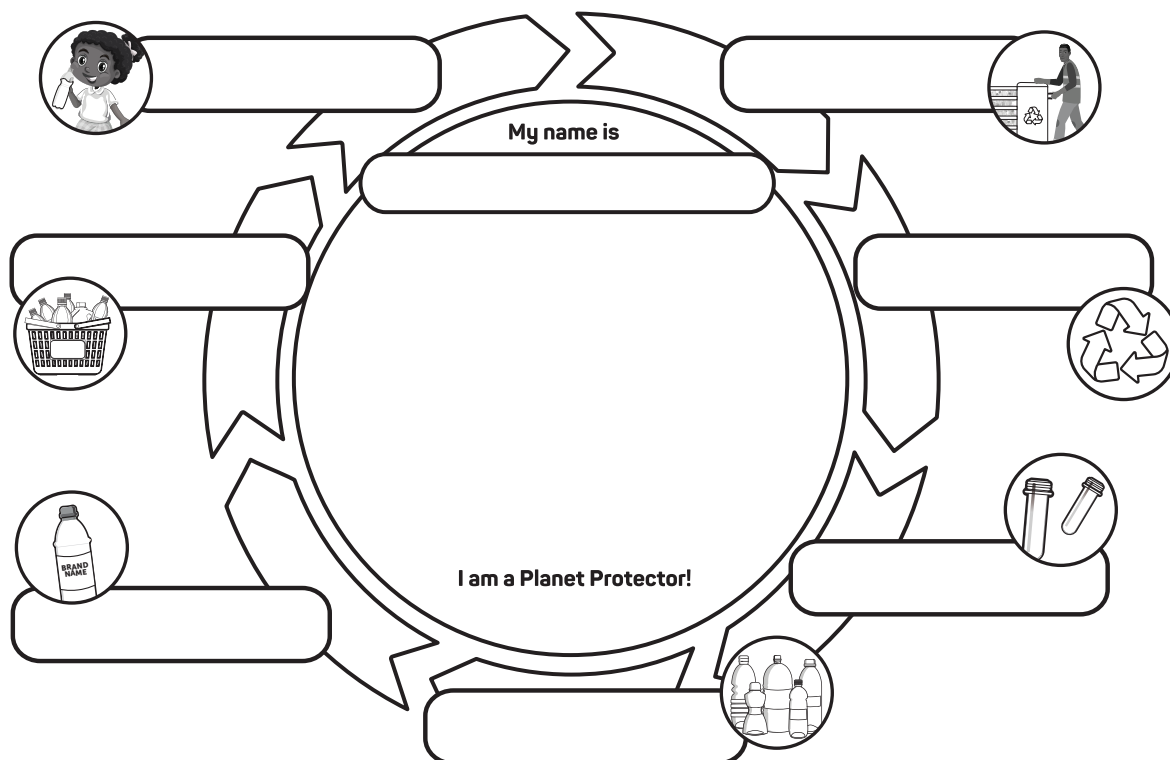


Section B Intermediate Phase Grade 4

I am a Planet Protector!

Name:..... Date:.....

1. Look at the Petco poster.
2. Use the poster to complete the drawing below. Write the name of each of the people in the life of a recycled plastic bottle.
3. Draw a picture of yourself as a Planet Protector in the middle of the drawing.



4. People who recycle are also Planet Protectors! Use the poster to complete each sentence.
 - a) I buy bottles from the buy-back centre and sort them, wash them and turn them into fibre or pellets. I am a _____.
 - b) I place PET plastic bottles on the shelves of my shop for consumers to buy. I am a _____.
 - c) I fill PET plastic bottles with water, shampoo or dishwashing liquid. I am a _____.
 - d) I buy PET plastic bottles filled with water, shampoo or dishwashing liquid and I place the empty bottle in a recycle bin. I am a _____.
 - e) I make and sell PET bottles which are filled with liquids like water, cold drinks or shampoo under my brand label. I am a _____.
 - f) I use recycled and new PET pellets to make new plastic bottles. I am a _____.
 - g) I gather empty PET plastic bottles and sell them at a buy-back centre. I am a _____.



Section B
Intermediate Phase
Grade 4

My planet; My home

Name:..... Date:.....

1. Look at this 'My planet; My home' picture.
2. Colour in the picture of the Earth in the centre of the picture.

My planet; My home



Learner Activity 2



Section B

Intermediate Phase

Grade 4

3. Look at the Petco poster for 30 seconds and try to memorise the order of the people in the life of a recycled plastic bottle.
4. Cut out the pictures below and stick them in the correct sequence on your 'My Planet; My Home' picture.



Learner Activity 2

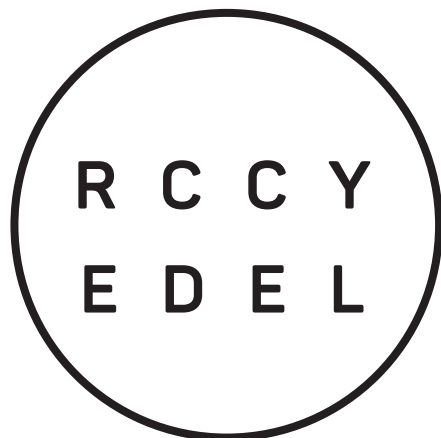
5. Read the following:
There are four important reasons to recycle or reuse PET plastic bottles:
 - a) PET plastic bottles can be **recycled** again and again and can be made into many new and useful products – even brand new PET products. Products are all the items (things) that are sold at shops, including clothes, food and books.
 - b) PET plastic bottles are **reusable**.
 - c) Collecting PET plastic bottles creates **rewarding** income opportunities for collectors.
 - d) Collecting and recycling PET bottles is good for the environment, and is a **responsible** way to live.
6. Each of the four reasons, for recycling PET plastic bottles, contains a word that begins with 're'.

Section B

Intermediate Phase

Grade 4

Unscramble the letters in these 4 bubbles and write the word in the space below each bubble.









7. Now, write the four words in alphabetical order.



Section B Intermediate Phase Grade 4

Jabu the Collector

Name:..... Date:.....

1. Read about Jabu the Collector and then answer the questions that follow:

Jabu is a collector. He knows the value of collecting used plastic PET bottles. Jabu is one of thousands of collectors in South Africa who help to make sure that plastic bottles don't end up in a landfill or a rubbish dump. He gathers recyclable materials like empty plastic bottles from homes, schools, offices, and other places, and sells them at a buy-back centre. You can make Jabu's work easier for him if you separate things that can be recycled into a different bin. Many people have bins for plastic, glass, metal and paper at their homes, offices, or schools. Try to sort out your waste, rather than dumping it all into one dustbin.



Learner Activity 3

Jabu collects all the PET plastic bottles that he can find, because he knows that most of them can be recycled. Jabu will also collect plastic containers if he finds them as some of these can be recycled too.

Jabu also knows which plastic bottles are the easiest to sell. He tries to collect as many PET bottles as he can that are clear, light blue, brown or green because these bottles can be sold at the buy-back centre. Jabu gets the most money for clear or light blue bottles as these can be made into many new things. He gets less money for green and brown bottles as they can only be made into certain things. Plastic bottles that are dark, brightly coloured, metallic or neon cannot be recycled.



If the bottle has a little triangle with a 1 in it close to the bottom of the bottle, then he knows that the bottle is a PET plastic bottle, and he can sell this bottle at a buy-back centre. Bottles or containers without the symbol, or bottles with other numbers besides a '1', are not made from PET. The different numbers on the bottles and containers tell us what type of plastic has been used to make them.

Most of the PET bottles that Jabu finds have labels on them. These can be left on the bottles when they are placed into the recycling bin. If he finds PET bottles that have shrink-sleeve labels on, Jabu still collects these bottles, takes the shrink-sleeves off, and places the sleeves in the waste bin.

Section B

Intermediate Phase

Grade 4

You can do this too before placing your bottles into the recycling bin to make Jabu’s life easier. You can also make Jabu’s life easier by making sure that you keep the inside of the bottles empty by not putting things like chip packets inside them.

He keeps the lids on the bottles as he can also sell these. You can help Jabu by squashing the bottle and leaving the lid on!

- Each of these sentences has one wrong word in it. Use the information you have read about Jabu to spot the wrong word. Cross out the wrong word and write the correct word or words in the space provided.
 - There are hundreds of collectors in South Africa. _____
 - Jabu sells the plastic he collects at a landfill. _____
 - Clear bottles cannot be recycled. _____
 - A bottle that shows a triangle with a ‘2’ in it is a PET bottle. _____
 - You must take off the lids of bottles to help Jabu. _____

- Look at the wordsearch puzzle below and then find the following words in the puzzle. The first word has been done for you.

Jabu Clear	Landfill Label				Plastic One	Recycle Gather		Collector PET		Dump Buyback	
C	O	L	L	E	C	T	O	R	B	X	O
W	J	A	B	U	Y	Z	U	E	C	J	N
Q	C	N	V	N	J	V	Y	C	R	G	E
P	X	D	U	M	P	S	F	Y	T	A	V
E	J	F	B	U	Y	B	A	C	K	T	X
T	M	I	V	L	A	B	E	L	W	H	H
Y	C	L	E	A	R	Q	V	E	K	E	C
Z	P	L	A	S	T	I	C	P	U	R	W

Section B

Intermediate Phase

Grade 5

Educator Guide

Name of Lessons: Don't throw away our future!		Time: 3 x 30 minutes
Grade 5		Subject: Natural Sciences and Technology Term 2 (Matter and Materials; Processing); English First Additional Language Term 3 (Reading and Viewing); Life Skills Term 3 (Health and environmental responsibility)
Curriculum Standards (CAPS): Natural Sciences and Technology Term 2: Strands - Matter and Materials; Processing Topic: Processing materials - Combining materials Topic: Processed materials - Properties and uses English First Additional Language Term 3: Reading and Viewing • Reads information texts with visuals • Does comprehension activity on the text Life Skills Term 3: Topic 3 Health and environmental responsibility • Safety measures at home and the environment: o Harmful household products		
Objectives		
The learners will be able to: • Make choices about the best thing to do with plastic items (4R's). • Appreciate the importance of recycling plastic, metal, glass, and paper containers, instead of throwing them away as rubbish. • Make wise choices to protect the Earth and pledge to do so.		
Content	Skills	Values
Learner Activity 1: Getting wise about waste • Refusing, Reducing, Reusing, Recycling • Life cycle of a plastic bottle Learner Activity 2: My Container Check-up • Waste and waste reduction • Differentiate between paper, glass, metal, plastic Learner Activity 3: Make every day Earth Day • Earth Day • Waste reduction	Learner Activity 1: Getting wise about waste • Complex problem solving • Critical thinking • Informed choices Learner Activity 2: My Container Check-up • Surveying • Feedback and reporting Learner Activity 3: Make every day Earth Day • Pledging • Word puzzle	Learners appreciate the importance of caring for the environment and that they are responsible for keeping it clean.
Resources needed		
Pencils/crayons; the Petco poster; photocopies of the Learner Activities; photograph of rubbish dump from Annexure; photograph of landfill from Annexure; a clear beverage bottle with the PET '1' symbol on it and a variety of plastic packaging (a peanut butter jar, a packet of fruit and some cling wrap); if you have access to the internet, see https://www.earthday.org for more information.		
Teacher preparation before starting		
Study the lesson plans prior to the lessons and ensure you have all the resources required for the lessons. Familiarise yourself with content for the three lessons before the lessons start. Print sufficient Learner Activity worksheets.		
Teaching the Learner Activities		
Learner Activity 1: Getting wise about waste Show learners a variety of packaging (see Resources needed above). Explain: • Very often, when we buy something, it is wrapped in plastic. • This wrapping is called packaging. Packaging is the material used to enclose, protect, transport, and even promote things that are for sale. Packaging is usually made from paper or plastic e.g., a mug would be packaged in a box to be delivered. Ask: • Why is packaging useful? • What harm do you think plastic packaging can cause?		



Section B Intermediate Phase Grade 5

Explain:

- Single-use packaging can only be used once, or for a short time, before being thrown away. It is bad for single-use packaging to stay in the environment because it usually ends up in the ocean or in a landfill.
- Define landfill using the definition provided.
- There are four things we can do with waste. It is easy to remember them because they all start with the letter 'R'.
- In this activity, we are going to read more about the 4R's.

Mention to the learners that plastic is very dangerous for small children as they make choke or suffocate on it. Let learners know that, if they have young brothers or sisters at home, they should always keep plastic packaging away from them.

Complete Part 1 (question 1) of the Learner Activity:

- Hand out the Learner Activity 1 worksheets.
 - Read the worksheet with the learners.
 - Ensure that they understand each of the 4R's.
 - Learners decide which is the best choice (of the two options provided) of what to do with different plastic items.
- Explain to the learners that a plastic peanut butter jar can be recycled.

Refer:

- Refer learners to the Petco poster.

Complete Part 2 (question 4) of the Learner Activity:

- Learners use the poster to decide whether the statements are true or false.

Explain:

- Each of the 4R's begin with the letters 'RE'.
- In some words, 'RE' has been added to an existing word. In this case, 'RE' is called a prefix.

Ask:

- Which of the 4R's begins with a prefix? (Recycle, Reuse)

Complete Part 3 (question 5) of the Learner Activity:

- Learners identify the two words that begin with a prefix.
- Learners write sentences using the four words, that begin with a prefix, to show that they know how to make wise choices that protect the environment.

Answers to Learner Activity:

Question 2:

- a) 1, because using a lunch box is better for the environment than using single-use cling wrap to protect your food.
- b) 1, because PET bottles should be recycled, not thrown away.
- c) 2, because reusing the peanut butter jar is better than throwing it away.
- d) 1, because it is better to not use a shopping bag if you don't need one.

Question 4:

- a) False
- b) True
- c) False
- d) True
- e) False
- f) False
- g) True

Question 5:

- a) Recycle; Reuse

Learner Activity 2: My Container Check-up

Ask:

- How does your family get rid of waste?
- How does our school get rid of waste?

Explain:

- Most people throw away up to 2kgs of waste every day.
 - That means that every single day in South Africa, we throw away enough waste to fill a whole soccer field!
- Source: <http://award.org.za/index.php/2019/02/01/south-africa-is-drowning-in-its-own-waste-are-our-regulators-taking-this-crisis-seriously/>

Ask:

- What do you think happens to the rubbish that you throw away?
- Where do you think all the waste goes?

Explain:

- All of our waste has to be taken somewhere.
- Most of our waste is taken to rubbish dumps or landfills. Even worse, some of it is burnt – releasing harmful toxins/chemicals into the air and the environment.
- Explain the term 'rubbish dump', using the definition provided as a guide. Show learners the picture of the rubbish dump (in the Annexure to this guide).
- Explain the word 'landfill', using the definition provided as a guide. Show learners a picture of the landfill (in the Annexure to this guide).



Section B

Intermediate Phase

Grade 5

Educator Guide

Ask:

- How can we reduce the amount of waste that lands up in rubbish dumps and landfills?

Explain:

- Recycling waste means that, instead of landing up in rubbish dumps and landfills, the waste can be made into new things.
- The more we recycle, the less things have to get thrown away.
- If we don't recycle, then all the waste that could have been recycled lands up being dumped in landfills and rubbish dumps.
- If we throw away something that could be recycled, like a plastic bottle, then the plastic bottle will land up in a rubbish dump or landfill and won't get made into something new.
- Most of the plastic, metal, paper, and glass containers that we use at home can be recycled instead of being thrown away.
- See the introduction to this guide for more on what can and cannot be recycled at the moment.

Complete the Learner Activity:

- Hand out the Learner Activity 2 worksheets.
- Read the text with the learners.
- Refer learners to the poster and make specific reference to the 'Recyclers'. Explain that these are the people who do the activities described in the text.
- Go through the Container Check-Up activity and let learners complete the table over the course of a week.
- Ensure that learners understand what is meant by disposable items and, if possible, show them examples of things that are disposable.
- Learners report back to the class.

Extension Activity

- Use the learners' Container Check-up Tables to create bar and pie graphs.

Learner Activity 3: Make every day Earth Day

Explain:

- Our planet is an amazing place but it needs our help to survive.

Ask:

- What can we do to help our planet to survive?

Explain:

- Waste and litter are bad for planet Earth. That is why it is so important to try to refuse, reduce, reuse or recycle as much waste as possible.
- One of the things that we can do to protect planet Earth is to reduce the amount of waste that we use and throw away, because it all lands up in a rubbish dump or landfill.
- All the things that we throw away have to be taken away to a rubbish dump or buried in a landfill.
- Remind the learners what they learned about regarding rubbish dumps and landfills in Learner Activity 1.
- The more things that we throw away, the more space is needed for all the waste, and we are quickly running out of space. This is bad because we will soon have nowhere to put all the things that we throw away.
- To keep as many things out of the rubbish dump or landfill as possible, it's important for each of us to do our part.
- Every year, on April 22, we celebrate our planet (Earth) and do things to protect it.

Refer:

- Refer learners to the Petco poster and discuss what each of the people are doing, in their own way, to protect planet Earth.

Ask:

- What other things can you do to protect and celebrate planet Earth? (Plant trees; switch off lights that you are not using; never waste water; reduce, reuse and recycle waste.)

Complete the Learner Activity:

- Hand out the Learner Activity 3 worksheets.
- Read about Earth Day and the importance of recycling.
- Learners complete the crossword puzzle based on what they have read.
- Learners complete a pledge to take care of planet Earth and decorate the pledge with words and pictures to show how they are going to help to protect our planet.

Answers to Learner Activity:

Question 2:

ACROSS:

1. reduces 4. plastic 5. clean 6. rubbish 7. harmful 9. environment

DOWN:

1. recycle 2. remain 3. landfills 4. pollution 8. Earth

Assessment

Refer to the Resource Section for the Assessment Rubric.

Teacher reflection

Is there anything you would do differently if you taught this unit again?



Section B

Intermediate Phase

Grade 5

Getting wise about waste

Name:..... Date:.....

1. Read about ways to reduce waste by making wiser choices.

Packaging serves an important purpose for many different products. Products are all the items (things) that are sold at shops, including clothes, food and books. For example, food packaging is important because it keeps the food safe from germs and helps it to stay fresh for longer. The packaging also helps to keep the food from getting damaged and also makes it easier and safer to transport products. Even though it is necessary for some products to be wrapped in packaging, we can still always try to make wise choices to reduce the amount of packaging that we use.

Single-use packaging is packaging that can only be used once, or for a short time, before being thrown away. We usually come into contact with this type of packaging when we buy groceries or get take-away foods. Although this type of packaging is important to transport the products that we want, it will stay in the environment for a very long time if it doesn't get reused or recycled. It is bad for single-use packaging to stay in the environment because it usually ends up in the ocean or in a landfill. A landfill is a place where waste is kept.

These 4R's will help you to make wise choices about managing the amount of waste that you create:

- Refuse: Say "no" to items you don't need, including single-use items where possible and ask yourself twice if you really need them. Try to avoid using items like plastic knives and forks or drink stirrers.
- Reduce: Think about what is needed and what is not. Whenever possible, we can make choices to reduce the things we use. For example, you can pack your school lunch in a reusable lunch box.
- Reuse: Reusing comes before recycling. This means that, if we can, we should try to reuse things before we throw them away or recycle them. For example, you can reuse a plastic peanut butter jar to store rice or dried fruit.
- Recycle: Recycling means to use packaging and other products to remake new goods that can be sold and used again. Choose packaging that can be recycled. Start a waste collection system in your home or school and recycle as much as possible.

2. Look at the pictures on the following page. In each row, there are 2 choices of what to do with a plastic item. Choose the number (1 or 2) that you think is the wiser choice and explain why you made your choice.





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Learner Activity 1

1	2	Which option (1 or 2) is the wiser choice? Why?
		I choose number _____ because _____ _____ _____ _____
		I choose number _____ because _____ _____ _____ _____
		I choose number _____ because _____ _____ _____ _____
		I choose number _____ because _____ _____ _____ _____



Learner Activity 1

Section B Intermediate Phase Grade 5

3. Look at the Petco poster.
4. Decide whether the following statements are true or false: Write a tick (✓) in the correct box:

- a) Consumers buy PET plastic bottles filled with liquids like water, cold drinks or shampoo, use them, and throw the empty bottles in a rubbish bin.
- b) Recyclers buy the bottles from the buy-back centre, sort the empty PET plastic bottles, wash them, and turn them into fibre or pellets to be made into new bottles.
- c) Retailers fill the PET plastic bottles with liquids, like water, cold drinks, or shampoo, which are then sold to the public.
- d) Brand owners make and/or sell PET bottles, filled with liquids like water, cold drinks or shampoo, under a brand label.
- e) Collectors gather empty PET plastic bottles, from households and other places, and sell them to retailers.
- f) Bottlers use the recycled pellets, as well as new PET pellets, to make new plastic bottles.
- g) Retailers place the PET plastic bottles, filled with liquids like water, cold drinks, or shampoo, on the shelves of their shops for consumers to buy.

True	False
------	-------

True	False
------	-------

True	False
------	-------

True	False
------	-------

True	False
------	-------

True	False
------	-------

True	False
------	-------

5. A prefix is a word that is placed in front of another word to change its meaning. 'Re' is a prefix that means 'again'. So, 'redo' means to do again. But be careful! Some words that start with 're' are not prefixes. In this lesson, you learnt about the 4R's.
- a) Which of the 4R words begin with the prefix 're'? Write them here:

- b) Each of these words has 're' as a prefix. In your workbook, write four sentences using each word about making wiser choices to keep the environment clean.
- Replant
 - Remove
 - Replace
 - Resell



Section B Intermediate Phase Grade 5

My Container Check-up

Name:..... Date:.....

1. Read about the types of plastic containers that we use on a daily basis:

Some of the plastic, metal, paper, and glass containers that we use can be recycled instead of being thrown away. When they are recycled, it means that these containers don't end up in landfills where they pollute our environment. When we recycle, the material from the used containers is used to make new containers. This means that we don't have to keep using only new materials to make new containers.

PET is a type of plastic used for containers, bottles and for other items. PET plastic is easy to identify. It is labelled with a little number '1' surrounded by 3 arrows that is pressed onto the bottom of, or underneath, the bottles and containers. This PET 1 symbol can be found on (or near) the bottom of plastic containers such as bottled water, cold drinks, sports drinks, juice, household cleaners, shampoo bottles, jars and food trays.

It looks like this:



PET bottles can be recycled into many new and useful things. Most importantly, they can be recycled and used to make brand new PET containers and bottles. They can also be used to make fibre for items like filling for our pillows, sleeping bags and winter coats, carpets in cars, and fleece shirts.

In South Africa, this is how fibre is made: PET bottles are collected, then flattened and bundled up into big blocks (bales). Then the bales are delivered to the recycling plant. Here they are sorted by colour, washed, chopped into smaller pieces, re-washed, and melted down before being made into long thin strings of plastic that look like noodles. The strings are cut into small pieces (pellets) and are then sold to manufacturers who turn them into items that we enjoy every day.

2. Complete the following Container Check-up table for meals that are prepared in your home for a week.
 - a) Count the number of disposable plastic, glass, paper, and metal containers that are used to prepare each meal. (When something is 'disposable' it means that we can throw it away after using it, but many of these items are recyclable).
 - b) Write the number down in the correct column of the table.

Learner Activity 2





Learner Activity 2

Section B Intermediate Phase Grade 5

Day	Meal	Disposable Paper	Disposable Glass	Disposable Metal	Disposable Plastic
Monday	Breakfast				
	Lunch				
	Supper				
	TOTAL				
Tuesday	Breakfast				
	Lunch				
	Supper				
	TOTAL				
Wednesday	Breakfast				
	Lunch				
	Supper				
	TOTAL				
Thursday	Breakfast				
	Lunch				
	Supper				
	TOTAL				
Friday	Breakfast				
	Lunch				
	Supper				
	TOTAL				
Saturday	Breakfast				
	Lunch				
	Supper				
	TOTAL				
Sunday	Breakfast				
	Lunch				
	Supper				
	TOTAL				
TOTAL FOR THE WEEK					



Section B

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Grade 5

Learner Activity 2

3. Once you have completed your Container Check-up, use the table to answer the following questions:
- a) How many disposable paper containers were used in your home during the week?
- _____
- b) How many disposable glass containers were used in your home during the week?
- _____
- c) How many disposable metal containers were used in your home during the week?
- _____
- d) How many disposable plastic containers were used in your home during the week?
- _____
- e) Does your household recycle the waste that you create?
- _____
4. Show the people in your home the results of your Container Check-up. Discuss with them how important it is for the environment to recycle plastic, metal, glass, and paper containers, instead of throwing them away as rubbish.
5. Check how many of the disposable containers are actually recyclable.
6. Try separating all recyclable glass, metal, paper, and plastic containers from your household rubbish for a week and putting them in a separate bag or bin. Instead of throwing these items away, you can:
- Find out how your community deals with recycling and take the separated items to a recycling drop-off site or buy-back centre;
 - Give the items to a local collector in your area;
 - See if your local municipality offers collection services; or
 - See if you can organise with your neighbours to have your recyclables collected weekly by a local collection business.

Try these things and see how much less waste is sent to the landfill! Report back to your class on your efforts to get wise about waste.



Section B

Intermediate Phase

Grade 5

Make every day Earth Day

Name:..... Date:.....

1. Read about Earth Day and the importance of recycling:

Earth Day is a special day to celebrate the Earth by recycling and thinking about what changes we need to make for the Earth to be a healthy and safe place to live. Earth Day is held on 22 April every year. Millions of people around the world celebrate Earth Day by planting trees, picking up litter, recycling packaging, and collecting items that can be re-used.

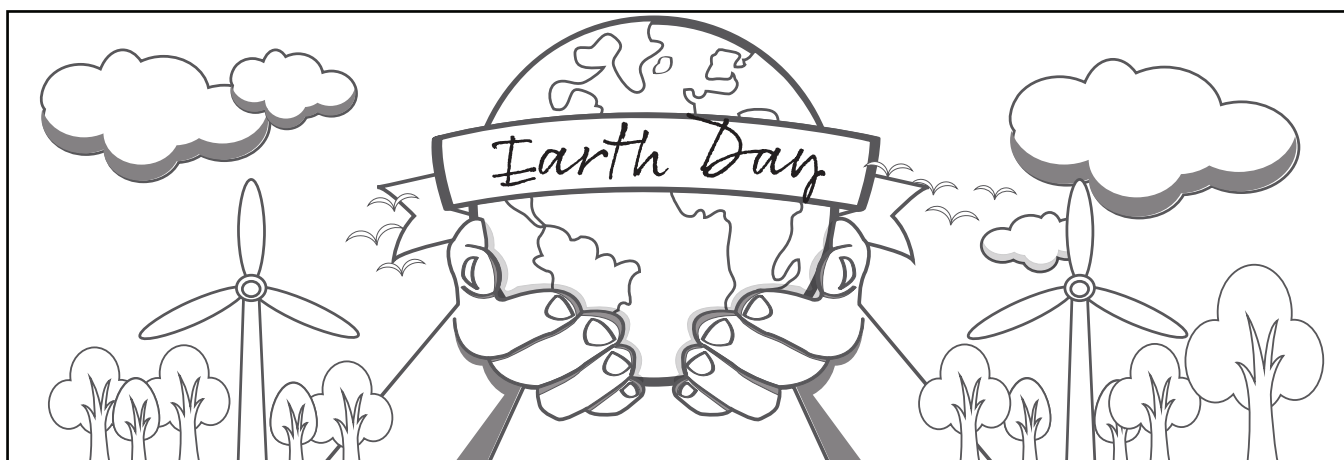
Earth Day is important because it helps to make us aware of how important it is to protect our environment and our futures.

We use a lot of plastic and throw away piles of rubbish every day that ends up in huge landfills. It is very important to keep plastic out of the environment, where it doesn't belong. That is why it is necessary to recycle packaging so that it doesn't end up in landfills and rubbish dumps.

Recycling is good for the environment because it reduces the amount of packaging (including containers) that we throw away, and also reduces the amount of new raw materials we need to make new things. Recycled PET bottles can be used to make new plastic bottles, containers, and fibre for clothes.

When plastic isn't recycled, plastic pollution increases, which harms the environment. Most plastics take a very long time to break down and can remain in the environment for years.

Any packaging that lands up in the environment can be harmful to wildlife. It is very important that we recycle as much packaging as we can, to keep our environment clean and protected.



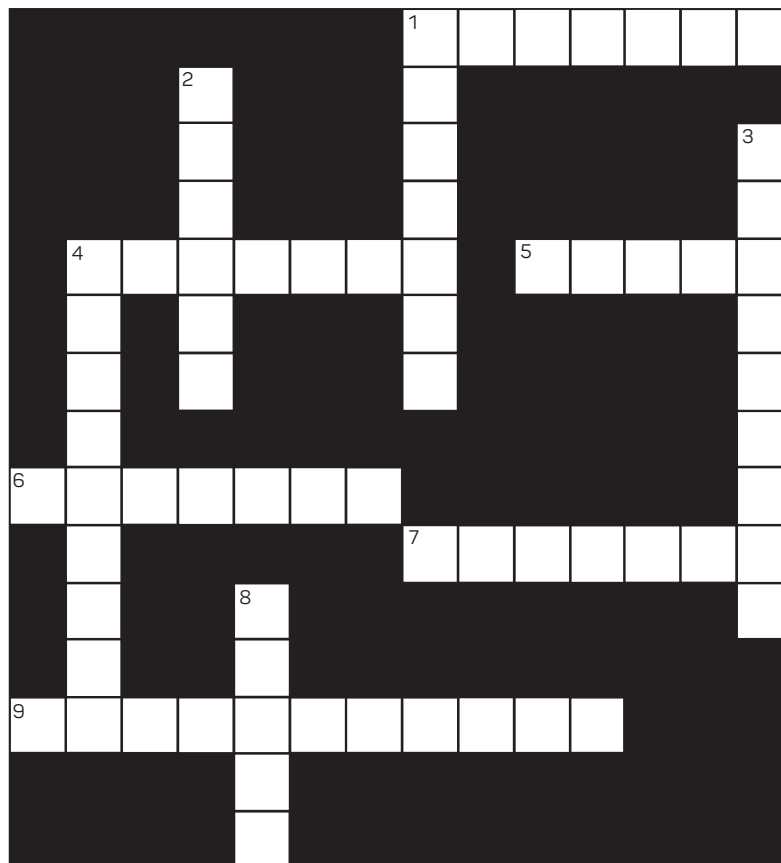


Section B

Intermediate Phase

Grade 5

2. Use the information on the previous page to find the clues that will help you to complete the Earth Day crossword puzzle:



Clues:
ACROSS:

1. Recycling is good for the environment because it _____ the amount of packaging and containers that we throw away.
4. It is very important to keep _____ out of the environment, where it doesn't belong.
5. It is very important that we recycle as much packaging as we can, to keep our environment _____ and protected.
6. We throw away piles of _____ every day that ends up in huge landfills.
7. Any packaging that lands up in the environment can be _____ to wildlife.
9. Earth Day is important because it helps to make us aware of how important it is to protect our _____ and our futures.

DOWN:

1. It is necessary to _____ packaging so that it does not end up in landfills and rubbish dumps.
2. Most plastics take a very long time to break down and can _____ in the environment for years.
3. We throw away piles of rubbish every day that ends up in huge _____.
4. When plastic isn't recycled, plastic _____ increases, which harms the environment.
8. _____ Day is held on 22 April every year.





Learner Activity 3

Section B Intermediate Phase Grade 5

3. Caring about our environment is not something that we should only do on Earth Day. We need to take action to protect our planet every day, so that future generations have a safe and healthy world to live in. Make a promise to protect planet Earth by writing your name on this pledge. Complete the pledge by colouring in the Earth and using words and/or pictures to show how you are going to help to protect our planet.

My name is _____
I promise to do my part to take care of the Earth.



Section B

Intermediate Phase

Grade 6

Educator Guide

Name of Lessons: Be a waste warrior!		Time: 3 x 30 minutes
Grade 6		Subject: Mathematics (Data Handling); English (Writing and Presenting)
Curriculum Standards (CAPS): Mathematics Term 1: Data Handling - Collecting and organising data - Representing data - Analysing, interpreting and reporting data English First Additional Language Term 4: Writing and Presenting - Designs a poster - Includes relevant information - Includes a picture - Uses the correct format - Uses design features such as colour and different sizes or kinds of print (font) - Presents neat, legible, final draft		
Additional opportunities for extension and CAPS-alignment: Natural Sciences and Technology Term 2: Mixtures and water resources: Water pollution		
Objectives		
The learners will be able to: - Differentiate between, and understand the meaning of reducing, reusing, and recycling. - Compare different types of plastic and make informed choices about what can and cannot be recycled. - Organise a campaign to mobilise their communities to keep their environment clean.		
Content	Skills	Values
Learner Activity 1: Teach your community - Waste handling – refuse, reduce, reuse, recycle - Public Service Announcement Learner Activity 2: Collecting and calculating - Data handling - Recycling Learner Activity 3: Vukuzenzele: World Cleanup Day - World Cleanup Day - Social Responsibility	Learner Activity 1: Teach your community - Complex problem solving - Critical thinking - Raising awareness - Community mobilisation/involvement Learner Activity 2: Collecting and calculating - Problem solving - Critical thinking - Decision making Learner Activity 3: Vukuzenzele: World Cleanup Day - Creativity - Campaigning - Community mobilisation/involvement	Learners appreciate the importance of caring for the environment and that they are responsible for keeping it clean.
Resources needed		
Pencils/crayons; photograph of rubbish dump from Annexure; photograph of landfill from Annexure; the Petco poster; photocopies of the Learner Activities; if you have access to the internet, see https://www.worldcleanupday.org for more information.		
Teacher preparation before starting		
Study the lesson plans prior to the lessons and ensure you have all the resources required for the lessons. Familiarise yourself with content for the three lessons before the lessons start. Print sufficient Learner Activity worksheets.		



Section B Intermediate Phase Grade 6

Teaching the Learner Activities

Learner Activity 1: Teach your community

Explain:

- Waste and litter are bad for the environment.
- Explain the word 'environment', using the definition provided as a guide.
- All the things that we throw away have to be taken away to a rubbish dump or buried in a landfill.
- Explain the term 'rubbish dump', using the definition provided as a guide. Show learners the picture of the rubbish dump (in the Annexure to this guide).
- Explain the word 'landfill', using the definition provided as a guide. Show learners a picture of the landfill (in the Annexure to this guide).
- The more things that we throw away, the more space is needed for all the waste, and we are quickly running out of space. This is bad because we will soon have nowhere to put all the things that we throw away.
- To keep as many things out of the rubbish dump or landfill as possible, it's important for each of us to do our part.
- One of the ways to help is through the 4R's of managing waste — Refuse, Reduce, Reuse, Recycle.
- When you refuse, you say "no" to items you don't need, including single-use items where possible and ask yourself twice if you really need them.
- Encourage learners to try to avoid using items like plastic knives and forks or drink stirrers.
- Reduce means to cut down on the amount of waste we create.
- Reuse means to find new ways to use things that otherwise would have been thrown away.
- Recycle means to turn something used (like plastic milk bottles or cold drink bottles) into something new and useful.
- Only things that cannot be reused or recycled should be thrown away into a rubbish bin.
- At the moment, tissues, toilet paper and nappies cannot be reused or recycled, and must be thrown away.
- At the moment, cigarette butts cannot be recycled and must be thrown away.
- At the moment, clothes cannot be recycled, but they can be reused or repaired (which means to fix something) or repurposed (to make one item into another item).
- There are some things that we can't recycle, even though they are made from glass, metal, paper or plastic.
- PET plastic bottles that are clear or light blue can be recycled into brand new PET plastic bottles.
- Most PET plastic bottles can be recycled, but bottles that have lots of information or logos printed directly on to the plastic bottle won't get collected for recycling at the moment.
- Just because we can't recycle these bottles, doesn't mean they should be thrown away! They can still be washed and reused.
- Plastic knives and forks are usually made of a combination of different materials and aren't labelled properly which makes them hard to identify and therefore hard to recycle because a recycler won't know what type of plastic they are made from. But they can be washed and reused.
- Glass jars can be reused (e.g. honey jar). Things that cannot be recycled yet, in South Africa, include chip packets, sweet wrappers, or chocolate wrappers.
- Things like lightbulbs or mirrors can't be recycled with your regular glass recycling currently as this glass has different properties to packaging glass.
- Even though fast-food containers are made of paper, currently we can't recycle them if they have lots of food left in them or if the box is greasy. We cannot reuse the box either, so we have to throw it away.
- If the fast-food box is clean and there is no food on it, then it can be recycled.

Refer:

- Refer learners to the Petco poster and go through the steps of recycling a plastic bottle.

Complete the Learner Activity:

- Hand out the Learner Activity 1 worksheets.
- Learners read about the importance of not littering, finding ways to reduce the amount of waste that ends up in landfills, and the value of recycling.
- Go through the table of items that can and cannot be recycled yet.
- In groups, learners create a public service announcement (PSA) to teach members of their community not to litter, the benefits of recycling, and which products are recyclable.
- Ensure that learners understand what a PSA is and, if possible, show them examples of PSAs. (Many PSAs were created for the Covid-19 pandemic and learners may be familiar with these.)
- Let learners present their PSAs to other classes (or at a school assembly) as part of their contribution to being waste warriors.



Section B

Intermediate Phase

Grade 6

Educator Guide

Learner Activity 2: Collecting and calculating

Refer:

- Refer learners to the Petco poster and explain that in this activity, they will focus on the 'collectors'.

Explain:

- Collectors are a very important part of the recycling chain.
- Who knows what a collector is?
- Explain the word 'collector', using the definition provided as a guide.
- After the collector has separated the recyclable things into piles of metal, glass, plastic and paper, the collector takes them to the buy-back centre to sell them.
- Explain the term 'buy-back centre', using the definition provided as a guide.
- The buy-back centre then sells all the recyclable materials that have been collected to a recycling plant.
- Explain the term 'recycling plant', using the definition provided as a guide.
- The recycling plant can make many new and useful things from the recyclable materials.

Complete the Learner Activity:

- Learners read about the different bottles that Jabu and Lisa collect.
- Learners use the information provided to calculate percentages, median, mean and mode.

Revise:

- Revise the calculations with learners:
 - Percentage can be calculated by dividing the value by the total value, and then multiplying the result by 100. The formula used to calculate percentage is: $(\text{value}/\text{total value}) \times 100\%$.*
 - The mean (also called the "average") is found by adding all of the numbers together and dividing by the number of items in the set: $(10 + 10 + 20 + 40 + 70) / 5 = 30$.
 - The median is found by ordering the set from lowest to highest and finding the exact middle. The median is just the middle number: 20.
 - The mode is the most common number in a data set: 10

* Example: Question 2 (c) on the worksheet: Jabu can sell 114 bottles (the value) out of 120 bottles (the total value) = 95%

Let learners complete the activities (question 2).

Ensure that all learners' answers are correct before they complete the graphs.

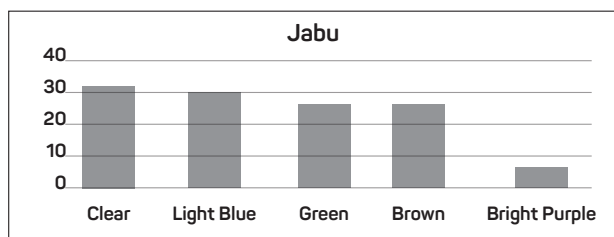
Answers to Learner Activity:

Question 2:

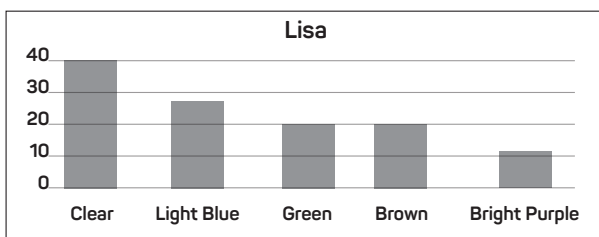
- a) 120
- b) 114
- c) 95%
- d) 26
- e) 28
- f) 120
- g) 108
- h) 90%
- i) 20
- j) 24

Question 3:

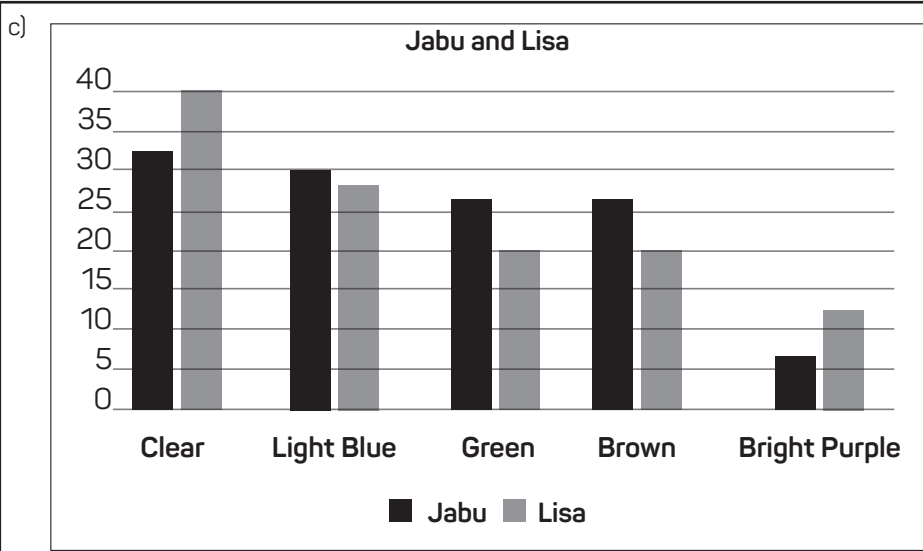
a)



b)



Section B Intermediate Phase Grade 6



Learner Activity 3: Vukuzenzele: World Cleanup Day

Revise:

- Revise the reasons that waste and litter pose such a great threat to our world (Activity 1).

Explain:

- World Cleanup Day is held every single year.

Ask:

- Based on everything you have learned about so far, why do you think it is important to have a World Cleanup Day?

Explain:

- The word ‘Vukuzenzele’ means ‘get up and do it yourself’ in Xhosa.

Ask:

- Why do you think this is a good slogan for World Cleanup Day?
- Can the learners think of a slogan in their home language that could be used for a World Cleanup Day campaign?

Complete the Learner Activity:

- Hand out the Learner Activity 3 worksheets.
- Learners read about World Cleanup Day.
- In groups, learners plan a ‘Vukuzenzele’ (‘get up and do it yourself’ in Xhosa) campaign to participate in this year’s World Cleanup Day at their school or in their community.
- Learners design a poster to inform their school or community about their campaign.
- Find out when World Cleanup Day is this year and encourage learners to organise a real World Cleanup Day using the plans and posters they have created in this lesson.

Assessment

Refer to the Resource Section for the Assessment Rubric.

Teacher reflection

Is there anything you would do differently if you taught this unit again?



Section B Intermediate Phase Grade 6

Teach your community

Name:..... Date:.....

1. Read about the importance of not littering, finding ways to reduce the amount of waste that ends up in landfills, and the value of recycling:

Littering is a big problem in many communities. Litter is unhealthy for people and the environment. Most litter makes its way into rivers and streams and from there to the ocean. You are responsible for your litter – it is your responsibility to throw away your rubbish or to put your packaging into the recycling bin or to organise for it to get taken to a recycler.

Here are some tips on what to do about litter:

- Place your litter in bins – not in the gutter, not in the river, not on the pavement or out of the car window. Just because you can't see it, doesn't mean that it has disappeared.
- If the bin is full, find another one or take your litter home to throw it away.
- Join a local community clean-up drive.

It is important that we collect our waste and dispose of it properly, either by throwing it away in a rubbish bin or, by following the 4R's of waste management:

Refuse: Saying "no" to items you don't need (especially single-use plastic).

Reduce: Lowering the amount of waste we use and produce.

Reuse: Using materials repeatedly (again and again).

Recycle: Turning used materials into new products.

When we recycle, we are reusing materials that would otherwise be thrown away as rubbish and end up in a landfill. Recycling helps to reduce the waste in landfills that can take hundreds of years to break down. Cold drink cans, plastic water bottles, plastic milk cartons, papers, and cereal boxes are just some of the items (things) that are recycled every day. If all of us started recycling a few items that we usually throw away every day, we would help to improve the environment for ourselves and future generations.

Recycling is one of the easiest ways to have a positive impact on the world in which we live. By recycling instead of throwing recyclable items away (as rubbish), you are helping our natural environment to be kept clean and beautiful. Recycling can also help people to make money. People are able to earn money by collecting and selling recyclable materials at buy-back centres.

Learner Activity 1



Learner Activity 1

Section B Intermediate Phase Grade 6

Why do some people not recycle? Many people don't know which things can be recycled. They also don't know what to do with the items or where to take them. One of the biggest reasons that people don't recycle is because they don't understand why it is so important and they don't think it makes a difference. But recycling makes a huge difference! For example, recycled plastic is used to make cell phone cases, playground equipment and even clothes! Clear or light blue PET plastic bottles can even be recycled right back into brand new PET bottles!

The four kinds of materials that are the easiest to recycle are glass, plastic, metal, and paper.

Food can also be disposed of (gotten rid of) responsibly. Instead of throwing eggshells, fruit peels and tea bags away, these and other food waste products can be recycled by shredding and mixing them with garden waste to make compost. Compost places nutrients into the soil and helps the soil retain water – this then helps our plants to grow.

The table below shows us exactly what kinds of products are and aren't recyclable yet.

	What can be recycled	What can't be recycled
Glass	• Cold drink, juice, and water bottles • Beer bottles • Wine and liquor bottles • Food and sauce containers • Clear drinking glasses 	• Windscreens • Window glass • Non-clear drinking glasses • Mirrors • Light bulbs
Plastic	• Cold drink, juice, and water bottles • Shampoo bottles • Soap/dishwashing liquid bottles • Plastic jars • Milk bottles • Sauce bottles • Plastic furniture • Buckets • Plastic shopping bags and bread bags • Bottle caps 	• Any plastic that does not have a polymer identification code on it. A polymer identification code looks like this, with a number from 1-7 inside it:  <i>NB: The number in the symbol does not mean that it can be recycled X number of times or that it has been recycled X number of times.</i> • PET bottles that have the ink label printed directly onto the plastic • PET bottles with a metal cap and closure • Brightly coloured, neon, opaque or metallic PET bottles



Section B

Intermediate Phase

Grade 6

Learner Activity 1

	What can be recycled	What can't be recycled
Metal	• Aerosol cans • Cold drink and juice cans • Bottle caps • Tinfoil trays • Food cans • Metal containers • Tinfoil 	• Paint cans • Batteries • Motor oil cans • CDs • Anything that contains mercury or lead
Paper	• Magazines • Newspapers • Books • Office and shredded paper • Envelopes • Cardboard boxes of any kind • Paper cartons for food and drink 	• Used paper plates • Disposable nappies, tissues, and toilet paper • Used cement bags • Used dog food bags • Laminated paper

Sources:

<https://theglassrecyclingcompany.co.za/how-to-recycle/>

<https://recyclepaper.co.za/about-paper-recycling/what-to-recycle/>

<https://www.plasticsinfo.co.za/wp-content/uploads/2019/10/All-About-Plastics-May2018.pdf>

<http://www.metpacsa.org.za/>

This table gives you an idea of the kinds of items that are recyclable, in South Africa, at the moment. Ask your teacher to check with your local municipality, local collection business or you can ask a collector to confirm which items are recyclable in your area.





Section B

Intermediate Phase

Grade 6

2. Divide into groups.
3. Use the information on the previous page to create a public service announcement to teach members of your community not to litter, the benefits of recycling, and which products are recyclable.

A public service announcement (PSA) is a short 60 – 120-second video or radio message that educates people about important topics. PSAs try to help people to change the way they act or behave. For example, you may have seen PSAs about road safety (always wear a safety belt!) and about staying safe when you are online (never give a stranger your address!). During Covid-19, many PSAs were made about the importance of washing our hands and wearing masks.

When you create a public service announcement, there are 4 important things to consider and questions that you must answer:

Your target audience:	Who do you want to reach with this message?
Your message:	What do you want the people who see your message to understand?
Its significance:	Why is this important to your audience?
Your call to action:	What do you want your audience to do?

Learner Activity 1



Section B Intermediate Phase Grade 6

Collecting and calculating

Name:..... Date:.....

1. Jabu and Lisa are Collectors. They have been hard at work all day, collecting recyclable items to take to the buy-back centre to sell.

Jabu and Lisa know that they can only sell PET bottles that are clear, light blue, brown, and green in colour at the buy-back centre. PET bottles that are brightly coloured, opaque or metallic cannot be recycled and so they will not be bought by a buy-back centre.



Before Jabu and Lisa can take their bottles to the buy-back centre, they must sort the bottles that they have collected into piles of the same-coloured PET bottles. They also need to remove the bottles that are brightly coloured and place them in the rubbish bin or find another use for them.

Look at this table of the number of PET bottles that Jabu and Lisa have collected:

	Clear PET bottles	Light blue PET bottles	Green PET bottles	Brown PET bottles	Bright Purple PET bottles
Jabu	32	30	26	26	6
Lisa	40	28	20	20	12

2. Answer the following questions, based on the data in the table:
- What is the total number of bottles that Jabu collected? _____
 - How many of these bottles will Jabu be able to sell at the buy-back centre?

 - What percentage of the total number of bottles that Jabu collected will he be able to sell at the buy-back centre? _____
 - What is the mode of the bottles that Jabu will be able to sell at the buy-back centre? _____
 - What is the median of the bottles that Jabu will be able to sell at the buy-back centre? _____
 - What is the total number of bottles that Lisa collected? _____
 - How many of these bottles will Lisa be able to sell at the buy-back centre?

 - What percentage of the total number of bottles that Lisa collected will she be able to sell at the buy-back centre? _____
 - What is the mode of the bottles that Lisa will be able to sell at the buy-back centre? _____
 - What is the median of the bottles that Lisa will be able to sell at the buy-back centre? _____



Section B

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3. Draw the following bar graphs:
- a) Use the data in the table to complete the bar graph for the total number of bottles that Jabu collected:



- b) Use the data in the table to complete the bar graph of the total number of bottles that Lisa collected:



- c) Complete the double bar graph to compare the number of bottles that Jabu and Lisa collected:





Section B Intermediate Phase Grade 6

Vukuzenzele: World Cleanup Day

Name:..... Date:.....

World Cleanup Day is an annual worldwide social action campaign to bring attention to fighting the problem of solid waste in our environment.

The idea for World Cleanup Day came from an event in Estonia in 2008, when 4% of the population came out to clean up all the illegally dumped waste across the entire country.



Source: <https://www.worldcleanupday.org/>

The first World Cleanup Day was held in 2018. Since then, the campaign has spread to 190 countries around the world. So far, over 200 000 tons of waste has been collected! South Africa has participated in World Cleanup Day since 2018, and every year, there are many events around the country for people to participate in this important campaign. Find out when World Cleanup Day is being held this year.

2. Plan a 'Vukuzenzele' ('get up and do it yourself' in Xhosa) campaign to participate in this year's World Cleanup Day at your school or in your community.
3. Use these questions to help you to plan your campaign:
 - What do you want to achieve with your campaign?
 - Who do you want to reach out to?
 - What activities will you plan for your campaign?
 - How will you inform the teachers and learners at your school or the members of your community?
 - How will you motivate people to participate in your campaign and take action?
4. Here are some tips for planning a successful campaign:
 - You will need to get as many people involved as possible. The more people involved, who have a voice and are respected in your school or community, the better the chance of your campaign succeeding.
 - Speak (or write letters) to your principal, schoolteachers, parents/guardians, friends, and community as well as religious leaders to get their support.
 - Think about using your public service announcement, from the previous lesson, to bring attention to the need for a recycling and anti-littering campaign.
 - Find a local collector or collection service/drop-off site where you will be able to take your recyclables when you have collected them.
5. Design a poster to inform your school or community about your campaign. The more people see what you are planning, the more they will want to get involved.

Learner Activity 3



Section C

Resource Section

Assessment Rubric:

Assessment	
Rating code	Description of competence
7	Outstanding achievement
6	Meritorious achievement
5	Substantial achievement
4	Adequate achievement
3	Moderate achievement
2	Elementary achievement
1	Not achieved

Vocabulary:

Waste:	Unwanted things that are thrown away after we have used them.
Litter:	Waste such as paper, cans, and plastic left lying in an open place.
Environment:	The environment is the world that we live in. The environment includes everything living and everything non-living. Living things (people, animals, plants) need the non-living parts of the environment (water, air, sun) to survive.
Reduce:	To make smaller or use less of. To cut back on what we buy and the waste we make.
Reuse:	To find many new ways to use waste, so that we don't throw it away.
Recycle:	To use waste to remake new goods that can be sold and used again.
Rubbish dump:	A rubbish dump is a place where waste is left in one place on top of the ground.
Landfill:	A landfill is a place where waste is taken to be buried in a big hole in the ground.
Compost:	Food waste and rotting plants that are used as food for growing new plants and food.
Material:	What something is made from.
Community:	A community is a place where people live, work and play.
Collector:	A collector collects recyclable materials from homes and public areas. The collector sorts and separates the material into piles of metal, glass, plastic, and paper.
Buy-back centres:	Collectors take recyclable materials to a buy-back centre and get paid for what they have collected. The buy-back centre sells the materials to a recycling plant. Buy-back centres are also called depots or drop-off sites.
Recycling plant:	A company that buys the recyclable materials from the buy-back centre. Then they make new and useful things from the materials.
Packaging:	The material used to enclose, protect, transport, and even promote things that are for sale. Packaging is usually made from paper or plastic e.g. a mug would be packaged in a box to be delivered.
Container:	A bowl or tub that holds the product, such as a food container, or a bin used to store waste. Containers are a type of packaging.



Section C Resource Section

Photograph of rubbish dump



Source: Petco

Photograph of landfill



Source: Petco

Annexure



Notes

[illegible]

Notes





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For more information email schoolclub@pnp.co.za

