Educator workbook

CAPS-aligned

Grade 10

Life Orientation

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

petco
Leading Producer Responsibility

Pick n Pay School Club

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Contents

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 packaging 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, conducting education and awareness initiatives and building the required local recycling infrastructure and capacity.

Petco is a collective organisation, set up 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 practical Educators' Workbook to help teach learners in Grades 10 to 12 how to care for their environment, understand their role in sustainability and encourage others to do the same. The activities in this workbook are designed to give learners practical ways to solve environmental challenges, think creatively and explore income opportunities in recycling and waste management. By working through these activities learners will see how they can make a real difference to the planet, while discovering how sustainability can also support individual and community upliftment. The workbook contains three worksheets, for each grade, each of which is CAPS-aligned to a topic in Life Orientation.

Grade 10	Grade 11	Grade 12
Learner Activity 1: Thinking critically about waste Life Orientation Term 2 Social and Environmental Responsibility · Skills that are necessary to participate in civic life	**Learner Activity 1: Breaking the chain** Life Orientation Term 2 Social and Environmental Responsibility · Climate change	**Learner Activity 1: Collaborating for a greener future** Life Orientation Term 2 Social and Environmental Responsibility · Responsibility of different levels of government
Learner Activity 2: Recycling for climate and justice Life Orientation Term 2 Social and Environmental Responsibility · Contemporary social issues that impact negatively on local and global communities	**Learner Activity 2: Waste mapping for community change** Life Orientation Term 2 Social and Environmental Responsibility · Being a responsible citizen	**Learner Activity 2: Creating opportunities through waste management** Life Orientation Term 1 Careers and Career Choices · Entrepreneurship as an innovative strategy to counteract unemployment
Learner Activity 3: Careers in recycling: a path to sustainability Life Orientation Term 3 Careers and Career Choices · Diversity in jobs	**Learner Activity 3: The working world of waste management** Life Orientation Term 3 Careers and Career Choices · Explore personal expectations and knowledge about self in relation to the demands of the world of work and socio-economic conditions	**Learner Activity 3: Mission and vision: building a greener career** Life Orientation Term 2 Social and Environmental Responsibility · Responsibility of different levels of government

A vocabulary table is provided which defines words that are frequently used in this guide. You may wish to make a copy of the table for your learners.

The workbook is accompanied by a poster that illustrates how different systems in waste management turn rubbish into resources. It highlights collection and drop-off points, transfer stations, material recovery facilities, buy-back centres, and recycling plants that process recyclables into usable materials. The poster also shows how composting transforms organic waste into nutrient-rich soil and how education and awareness initiatives promote reducing, reusing, and recycling. It inspires learners to see how these systems protect the environment and create opportunities for communities.

Background and context

Pick n Pay School Club is celebrating its 22nd year of providing much-needed educational material, which now reaches 111,125 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.

Acronyms:

CAPS: Curriculum and Assessment Policy Statement
FET: Further Education and Training

Section B
FET Phase
Grade 10

Educator Guide

Name of lesson: Solving waste challenges	**Time:** 6 x 30 minutes
Grade 10	**Subject:** Life Orientation

Curriculum Standards (CAPS):
Learner Activity 1: Thinking critically about waste
Life Orientation Term 2: Social and Environmental Responsibility
- Skills that are necessary to participate in civic life: A group or individual project to address a contemporary social issue that impacts negatively on local and/or global communities; Distinguish between: Social thinking skills; Constructive thinking skills; Critical thinking skills

Learner Activity 2: Recycling for climate and justice
Life Orientation Term 2: Social and Environmental Responsibility
- Contemporary social issues that impact negatively on local and global communities: Demonstrate an understanding of the concepts: Social and environmental justice

Learner Activity 3: Careers in recycling: a path to sustainability
Life Orientation Term 3: Careers and Career Choices
- Careers in the economic sectors: Primary (raw materials); Secondary (finished products or goods); Tertiary (infrastructure and providing services)
- Work settings: Careers in indoor and outdoor workplaces - environment and conditions

Outcomes

The learners will be able to:
- Identify community waste problems and propose realistic solutions
- Explain how recycling reduces pollution and supports communities
- Discuss the role of waste in climate change and ways to reduce its impact
- Plan a school recycling programme with clear steps
- Compare roles in recycling and their impact on sustainability
- Create career path diagrams for growth in recycling jobs

Content	Skills	Values
· Waste problems and solutions · Climate change and recycling · Community impact and environmental justice · Recycling initiatives and action · Careers in recycling	· Critical thinking · Social thinking · Collaboration and communication · Research and planning	· Environmental responsibility · Equity and justice · Leadership and initiative · Sustainability

Resources needed

Petco poster; photocopies of the Learner Activities.
Learner Activity 1: Pencil crayons or kokis; Learner Activity 2: Access to recycling bins; collection bags; gloves; materials for creating posters; Learner Activity 3: Access to a library or the internet for research.

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 the content for the three lessons before the lessons start. Print sufficient Learner Activity worksheets for all learners.

Teaching the Learner Activities

Learner Activity 1: Thinking critically about waste

Hand out the Learner Activity 1 worksheets.

Ask:

· What happens to waste after it is thrown away?

· What waste problems can you identify in your community or school? (Littering, lack of bins, illegal dumping)

Explain:

· Waste does not just disappear. If it is not managed properly, it ends up polluting the environment.

· Social, constructive and critical thinking skills can help us understand and find solutions to waste problems.

Let learners read the introduction about waste, its impacts and solutions before completing **questions 1 – 3**.

Guide learners through the group project (question 4):

· Divide learners into groups and ensure they understand the activity steps.

· Encourage groups to discuss community waste problems before writing.

· Monitor brainstorming to ensure solutions are practical and community-focused.

· Guide groups to evaluate solutions and select the most effective one.

· Groups prepare and present on the waste problem they identified and their chosen solution.

· Use **question 5** to have a class discussion on the activity's outcomes and skills used during the activity.

Reflect:

· What did you learn from other groups' ideas?

· How could these solutions be applied in your own community?

Learner Activity 2: Recycling for climate and justice

Hand out the Learner Activity 2 worksheets.

Ask:

· What happens to waste when it is sent to landfills?

· How does waste contribute to climate change?

Explain:

· Waste in landfills releases greenhouse gases, which trap heat and contribute to climate change.

· Recycling reduces landfill waste, lowers greenhouse gas emissions and helps protect the environment.

Let learners read the introduction about waste, climate change and recycling before completing **questions 1–2**.

· Let learners share their role-plays with the class.

Ask:

· What did Planet Earth say about the importance of recycling?

· How does waste impact the lives of individuals and communities?

Refer learners to the poster.

Ask:

· How do facilities like buy-back centres and composting sites reduce waste and protect the environment?

· Why is it important to educate people about recycling at every step of the waste management process?

Guide learners through the group activity (question 3):

· Divide learners into groups and ensure they understand the activity steps outlined in the worksheet.

· Encourage groups to discuss the importance of recycling and how it can benefit their school and community.

· Monitor each step of the activity, ensuring learners develop practical, realistic plans.

Groups present their vision and goals for the programme, along with details of their recycling stations and education strategies.

Reflect:

· What makes a successful recycling programme?

· How could this programme be implemented in your school?

· What did you learn about teamwork and planning?

Learner Activity 3: Careers in recycling: a path to sustainability

Hand out the Learner Activity 3 worksheets.

Ask:

· Why are jobs in waste management important for both people and the environment?

· How do recycling jobs create opportunities for communities?

Explain:

- Jobs in recycling span various sectors, including collection, processing, education and innovation.
- These roles not only reduce waste but also contribute to environmental protection and economic development.

Begin by letting learners read about the different industries and answer the questions **(question 1)**.

Then, let learners read the case studies of Sizwe, Lerato and Thandi and complete the group activity **(question 2)** in their workbooks.

Guide learners through the group activity:

- Divide learners into groups and ensure they understand the activity steps outlined in the worksheet.
- Encourage groups to discuss the career case studies, focusing on how the individuals could progress in their roles.
- Monitor group discussions to ensure learners identify practical career pathways and relevant skills or training needed for progression.
- Guide groups to evaluate potential challenges for each role and propose realistic solutions.

Groups prepare and present their solutions.

Reflect:

- What did you learn about the variety of jobs in the recycling sector?
- How do these roles make a difference in communities and on the environment?
- What skills and values do you think are most important for success in these careers?

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?

Thinking critically about waste

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

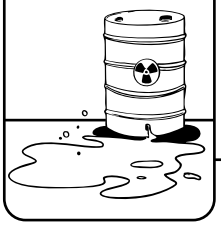
Waste is everyone's responsibility

Waste is anything we throw away because we don't need or want it anymore. Even when we throw things away, they don't just disappear. They end up in other places, e.g. landfills or recycling centres. When waste is not managed properly, it also ends up in rivers, parks and streets in our communities. Waste is a big problem that affects our planet in many ways. Poor waste management leads to pollution, health risks and the loss of valuable resources, harming people, animals and the environment.

Air pollution:

Burning waste creates harmful smoke that dirties the air that we then breathe.

Soil contamination:



Chemicals from waste mix with soil, making it unhealthy.

Water pollution:

Waste in rivers makes the water dirty and unsafe to drink.

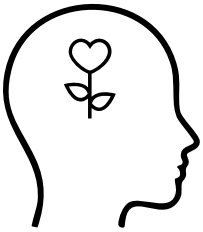
Waste management as a solution

By managing our waste, we can work together to solve these problems in our communities. This includes refusing unnecessary packaging, reducing waste, reusing items and recycling. Recycling is especially important because it allows materials, like plastic or cartons, to be turned into new products and packaging instead of ending up as litter or waste.

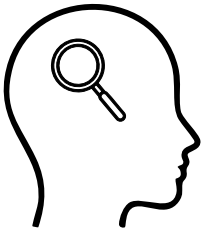
Petco is a national organisation that helps collect and recycle packaging, advises on better packaging design, creates demand for recycled materials, and teaches people about recycling through education and awareness programmes.

Polyethylene terephthalate, commonly known as PET, is a type of plastic that is used for packaging, e.g. bottles for water and cold drinks and jars for peanut butter. When we recycle PET plastic packaging, we help to keep it out of the environment where it does not belong. Liquid board packaging, otherwise known as cartons, is used to package custard, juice and long-life milk. Social, constructive and critical thinking skills can help us understand and solve waste problems.

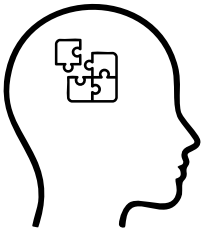
Three important thinking skills



Social thinking



Constructive thinking



Critical thinking

1. Read about these skills and then answer the following questions in your workbook:

- **Social thinking skills** help us understand how issues affect other people, not just ourselves.
- **Constructive thinking skills** help us come up with solutions to problems by creating ideas and finding ways to improve things around us.
- **Critical thinking skills** help us weigh the pros and cons of each solution to choose the best one, considering practicality, potential challenges, and which option will have the greatest impact.

Learner Activity 1

2. How can developing these thinking skills help us make better choices about reducing, reusing, and recycling waste in our daily lives? Give examples.
3. How could you use these skills to convince others to take waste management seriously?

Group project on waste solutions

4. Work as a group, using social, constructive and critical thinking skills, to identify a waste problem in your community and find a realistic solution.

Step 1: Observe and share (Social thinking skills)

- Think about a waste problem you have noticed, in your community or in a community of your choice, such as people throwing used packaging on the ground, littering in parks, or not using bins because there are not enough available. Consider how these behaviours, along with a lack of collection services, contribute to rubbish piling up in public spaces and creating pollution.
- Write a short paragraph about this issue, explaining who is affected by it and how it impacts them. Be specific about who might be affected (families, shop owners, children, animals).
- Share your observations with one another. Talk about how different communities are affected by waste.

Step 2: Come up with ideas (Constructive thinking skills)

- Come up with two or three ideas to help solve the waste problem you discussed. Think about solutions that are realistic and involve the community.
- Write down your ideas and make sure each one is explained clearly so others can understand it.

Step 3: Choose the best idea (Critical thinking skills)

- Look at each of your ideas and discuss the pros and cons. What makes each idea a good solution? Are there any challenges to making it work? For example, if you want to set up community recycling bins, think about how they will be managed or who will empty them.
- As a group, pick the idea that you think is the best solution. Make sure to consider which one is most likely to succeed and make a difference.

Step 4: Present your solution

- Prepare a short presentation about your chosen solution.
- Explain the waste problem you identified, the solution you chose and explain your reasoning.
- Present your solution to the class.
- Listen to other groups' ideas and think about how you could apply these solutions in your community.

5. Have a class discussion on the skills.
   a. How did **social thinking** help you understand the impact of the waste problem on different groups?
   b. How did **constructive thinking** help you come up with ideas?
   c. How did **critical thinking** help you decide on the best solution?
   d. How could you use these skills in other areas of life and how can they help make a positive difference in your community?

Learner Activity 1

Recycling for climate and justice

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

Waste and climate change

When we throw waste away, it does not just disappear. Waste sent to landfills slowly breaks down and releases gases like carbon dioxide and methane. These gases, called greenhouse gases, trap heat like a blanket around the Earth. They contribute to global warming and climate change, causing extreme weather, rising sea levels, and changes in rainfall patterns.

Recycling helps the environment by reducing the amount of waste in landfills, lowering greenhouse gas emissions, and decreasing the need for new resources to be acquired. Composting is another great solution. Food waste can become compost, enriching soil and helping plants grow. With three bins—one for waste, one for recycling, and one for compost—we can reduce landfill waste and protect the environment.

Plastic waste in the ocean harms the planet by reducing its ability to absorb carbon dioxide, worsening climate change. Reducing plastic pollution helps to protect the oceans and slow global warming.

How waste leads to climate change

1. Complete the following activities in pairs:
   a. List the items you and your partner throw away each day that could be recycled.
   b. Brainstorm how recycling these items could help slow down climate change.
   c. Role-play a conversation where Planet Earth talks to a human about how waste impacts the environment and contributes to climate change. Planet Earth must advise the human on ways to mitigate (prevent) further global warming and climate change.

The impact of waste on communities

The effects of waste are often worse in low-income areas, such as informal settlements, where there might not be regular waste collection or enough bins. These vulnerable communities face greater health risks from pollution and waste, which can harm the air, water and soil. This pollution can cause health problems like asthma and other illnesses. This is an example of environmental injustice, where some communities suffer more from waste because they lack the resources or support to manage it safely. By recycling, reducing waste, and disposing of it responsibly, we can help make the environment healthier and safer for everyone, especially for those most affected by these challenges.

Section B
FET Phase
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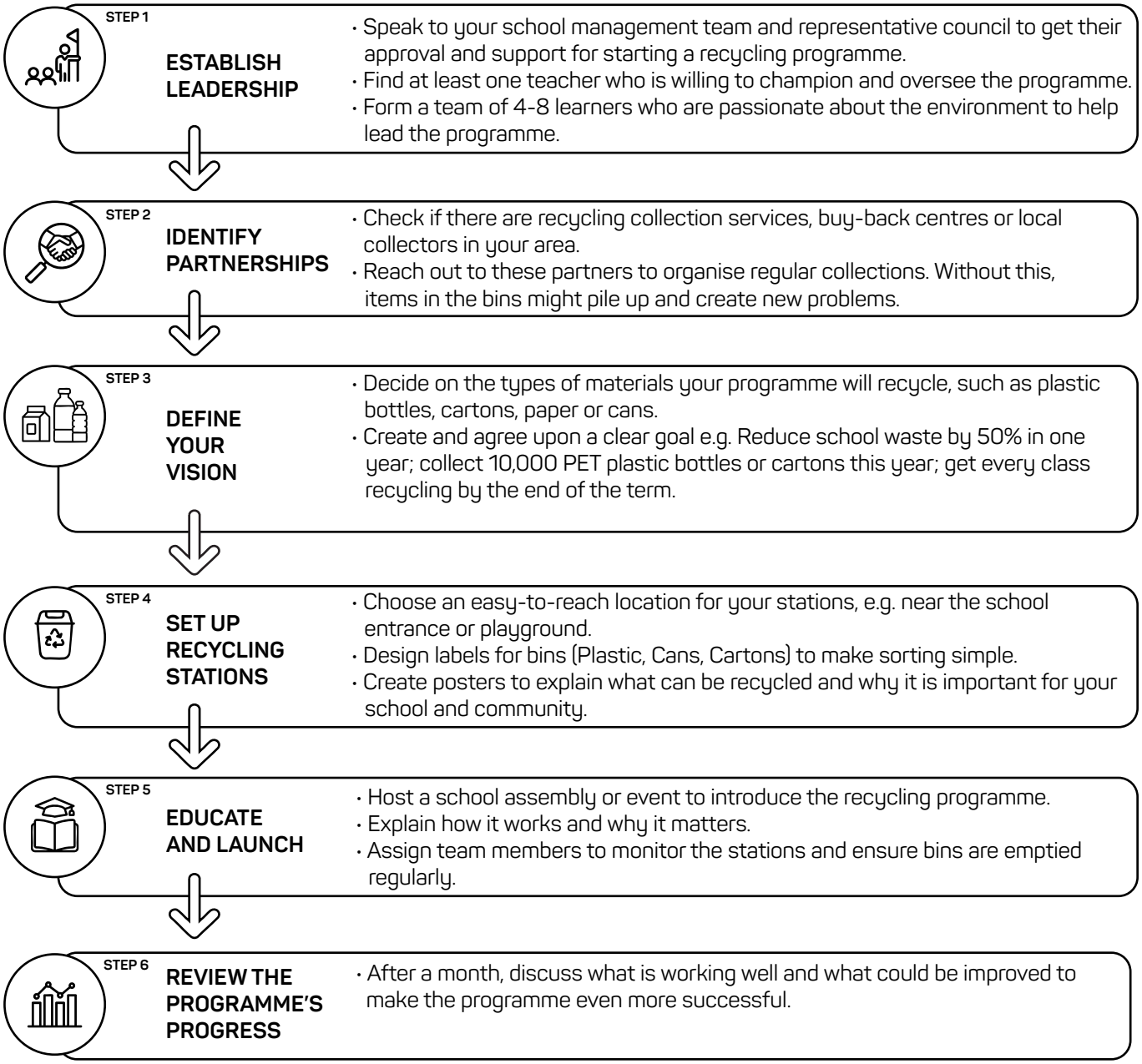
Learner Activity 2

Starting a School Recycling Programme

Petco collaborates with communities, where possible, to make the collection of recyclable packaging easier so that everyone can take part in caring for the environment. Yet, in many communities, people don't know where to recycle or why recycling is important. You can set an example, in your school, by starting a recycling programme. By collecting items like plastic bottles, liquid board packaging (cartons), paper and cans, you can help to reduce waste and support the health of your community and the environment. However, setting up a recycling station is about more than just placing bins around your school. It requires leadership, teamwork and proper planning to make sure the programme succeeds and benefits your school community.

2. Working in groups, follow the steps below to create an effective recycling system:



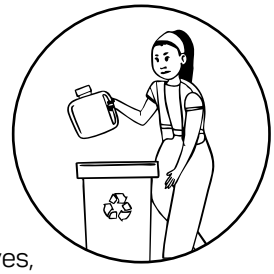
Careers in recycling: a path to sustainability

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

Working in the recycling sector
The waste management industry has many different types of jobs. These jobs are spread across four sectors: primary, secondary, tertiary and quaternary. Each sector plays an important role in keeping our planet healthy and creating jobs that support people and communities.

1. Read about each of these sectors before answering the questions below.

Primary Sector



Jobs in the primary sector involve collecting materials from the environment. In recycling, this includes roles like waste collectors such as waste pickers, buy-back centres, co-operatives, small businesses and waste management companies who gather recyclable packaging (recyclables) made from plastic, glass and metal from homes, businesses and public areas. By collecting these items, they help to keep waste out of landfills, reducing pollution and promoting recycling in their communities.

? Why is collecting recyclable packaging important, and what challenges might waste pickers face?

Secondary Sector

The secondary sector focuses on processing recyclables into new products. In recycling plants, workers and machinery transform packaging back into materials that are used to create new items and packaging. For example, used PET plastic bottles can be recycled into new bottles, or cartons can be recycled into paper or crates. This reduces the need for using more resources from nature.

? How does turning old materials into new products help the environment?

Tertiary Sector

The tertiary sector includes service jobs that help people understand and take part in recycling. People in these roles, such as environmental project coordinators, work with schools, communities and businesses to raise awareness about recycling. They organise projects and teach others about why recycling is important, and help to build a culture of caring for the environment.

? How can educating people about recycling make a difference in communities?

Quaternary Sector

The quaternary sector focuses on research, technology and policies to improve recycling and waste management. People in this sector often work for organisations, including brand owners and retailers, to create better collection systems and sustainable practices. They help businesses design recyclable or reusable packaging, reduce waste across their operations, or develop innovative ways to manage resources more sustainably.

? Why is it important to research better recycling methods and systems?

Learner Activity 3

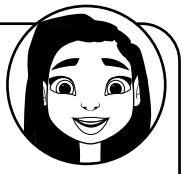
Section B
FET Phase
Grade 10

Learner Activity 3

Career pathways in recycling
Some people in the recycling industry can move from one role to another as they gain skills and experience. For example, a waste picker (primary sector) might start by collecting recyclables in their community and, over time, form a collective of waste pickers. This collective could then progress to running a buy-back centre, where materials are purchased and sorted for recycling. Later, with further training and experience, they might move into roles that involve managing operations or supporting community recycling programmes (tertiary sector) or even contributing to policy and programme development (quaternary sector).

2. Read the career journeys of Sizwe, Lerato, and Thandi who work in the recycling industry. Each one has a role in a different sector where they contribute to sustainable development. Then, complete the activity that follows.

Case Study 1: Sizwe - Waste Collector (Primary Sector, Outdoors)
Sizwe lives outside Johannesburg in an informal settlement. He started collecting recyclables like plastic, glass, cartons and metal from homes and public areas to earn a living. Over time, he realised there was a need for a buy-back centre (BBC) in his area. Using his experience and connections within the community, Sizwe started his own BBC, where he purchases, sorts, packages and sells recyclables to larger BBC's or recycling plants. Through his efforts, Sizwe not only reduces landfill waste but also provides opportunities for other waste pickers in his community, making a meaningful contribution to local recycling efforts.



Case Study 2: Lerato - Recycling Plant Sorter (Secondary Sector, Indoors)
Lerato grew up in a town outside Durban. After studying at a technical college, she joined a recycling plant as a Recycling Plant Worker. Her role involves assisting with manual tasks like removing PET plastic shrink sleeves from PET plastic bottles and preparing materials received from waste pickers and buy-back centres. These materials are then washed thoroughly by machines to ensure they are clean for further processing. Lerato's work supports the efficient functioning of the plant and contributes to sustainable development. She hopes to advance her career by becoming a machine operator and eventually moving into a supervisory or quality control role with further training.

Case Study 3: Thandi - Collections and Training Officer at Petco (Tertiary Sector, Indoors)
Thandi grew up in Cape Town and became involved in community recycling projects. Her volunteer work organising clean-ups and teaching others about waste led her to Petco, where she now works as a Collections and Training Officer. She promotes recycling by organising collection programmes, training communities and supporting schools in recycling education. Thandi's role raises awareness and helps keep communities cleaner. She hopes to advance within Petco or move into policy development to focus on environmental sustainability.

Activity: Career Pathways Comparison
Step 1: Analyse the case studies
· In your workbook, write down the main tasks each person performs and the skills they use in their jobs.
· Write about how each person's role helps to protect the environment and support sustainable communities.

Step 2: Form small groups and discuss the following questions:
· What skills would Sizwe, Lerato and Thandi need to move into different roles in the recycling sector?
· How might their different backgrounds affect their opportunities for career growth?

Step 3: Create career path diagrams:
· In your group, create a simple diagram that shows possible career paths for each person.
· Include steps they might take to move into new roles in the recycling industry.
· Discuss the skills and training you think they would each need in order to progress in their careers.

Step 4: Present your career pathways.

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:

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 can also be called depots or drop-off sites.
Circular economy:	A system focused on keeping materials in use for as long as possible at their highest value through reuse, repair, recycling, and sustainable design.
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.
Conservation:	Taking care of our Earth and making sure we use natural resources wisely so that we don't run out of them.
Disposal:	The act of getting rid of something, unwanted or no longer needed items, in an appropriate and often environmentally friendly manner.
Eco-design:	Designing products to reduce their environmental impact by making them reusable, repairable, or recyclable.
Entrepreneurs:	People who identify opportunities to create new businesses or improve existing ones.
Environmental justice:	The fair treatment and involvement of all people in environmental policies and actions, regardless of socio-economic status.
Landfill:	A landfill is a place where waste is taken to be buried in a big hole in the ground.
Litter:	Waste such as paper, cans, and plastic left lying in an open place.
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.
Recycle:	To use waste to remake new goods that can be sold and used again.
Recycling plant:	A facility that receives, sorts, and processes recyclable materials into new products or raw materials.
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.
Rubbish dump:	A rubbish dump is a place where waste is left in one place on top of the ground.
Sustainability:	The ability to meet current needs without compromising the ability of future generations to meet theirs, often by conserving resources and protecting the environment.
Waste:	Unwanted things that are thrown away after we have used them.
Waste pickers:	People who collect recyclables directly from rubbish bins and landfills.

Notes

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Pick n Pay School Club

For more information email schoolclub@pnp.co.za