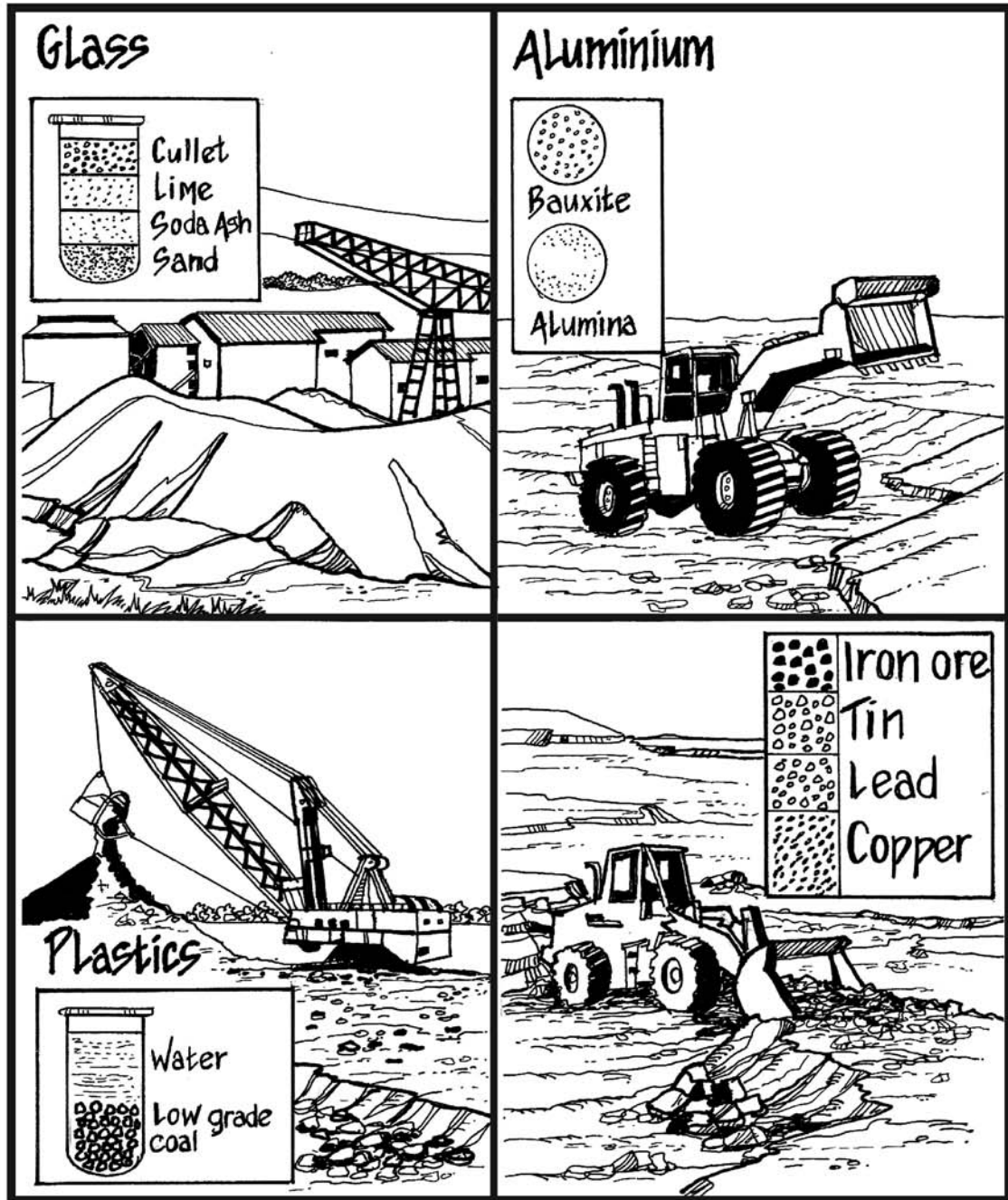


# e-Waste-Take



# e-WASTE - TAKE

## LEARNING AREA: Social Sciences

### LEARNING OUTCOME 1: Geographical enquiry

Use enquiry skills to investigate geographical and environmental concepts and processes

### LEARNING OUTCOME 2: Geographical knowledge & understanding

Demonstrate geographical and environmental knowledge and understanding

### LEARNING OUTCOME 3: Exploring Issues

Make informed decisions about social and environmental issues and problems.

*Integration with other Learning Areas:*

| Learning Area    | Learning Outcome                           | Description  |
|------------------|--|--|
| Technology       | 3: Technology, society and the environment | Demonstrate an understanding of the interrelationships between science, technology, society and the environment. |
| Life Orientation | 1: Health Promotion                        | Make informed decisions regarding personal, community and environmental health.                                  |

## ACTIVITIES

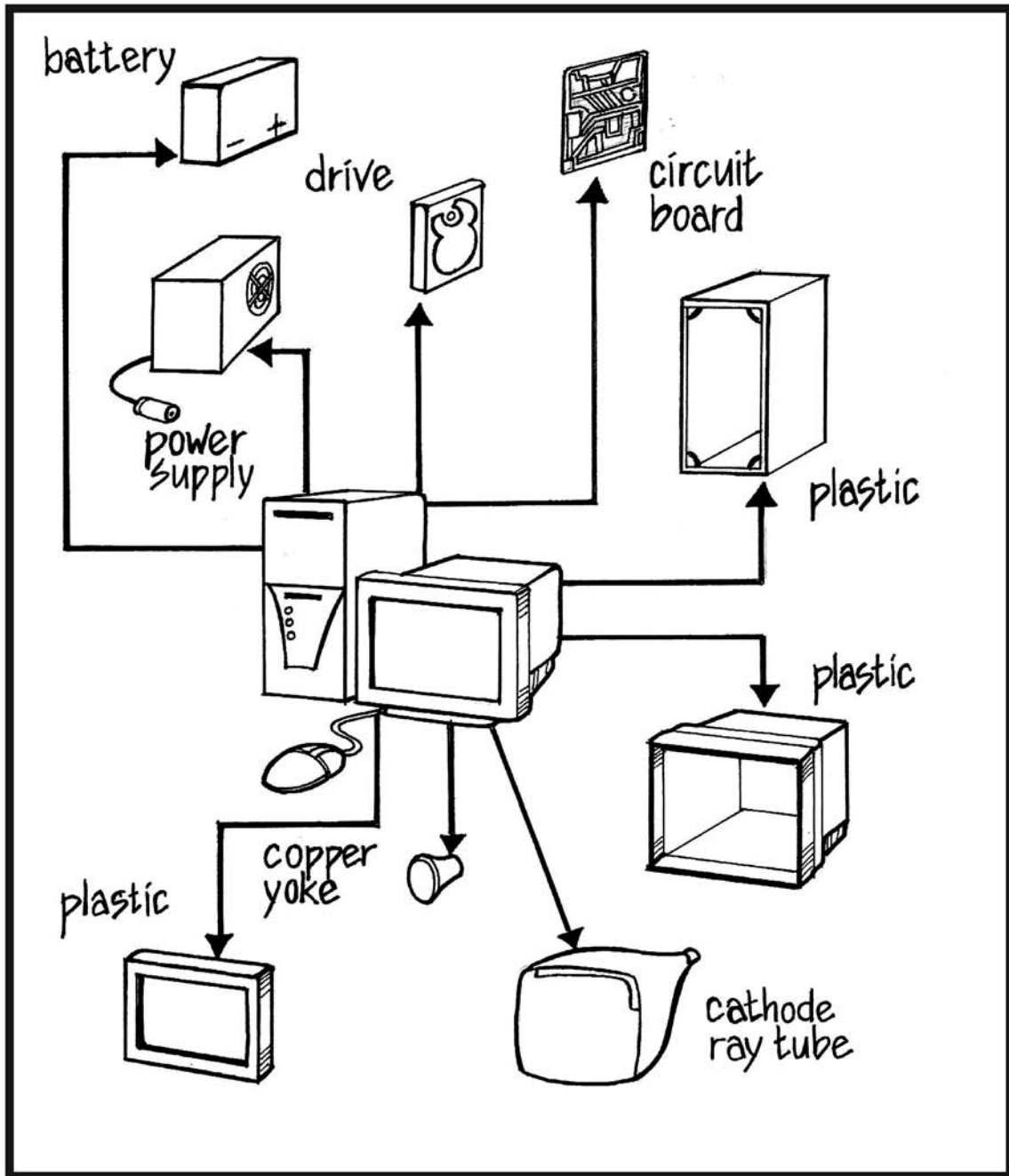
(E = Educator L = Learner)

|   |  |
|---|--|
| E | <p><b>Electronic Waste</b></p> <p>Explain: e-Waste (electronic waste) is:</p> <ul style="list-style-type: none"> <li>• electronic and electrical waste</li> <li>• everything with a plug or a battery (from computers to fridges)</li> <li>• cell phones (mobile phones)</li> <li>• compact fluorescent lamps (CFLs) (energy saving light bulbs)</li> <li>• batteries</li> </ul> |
| E | Explain: electronic products are made from metal, glass and plastic. They contain metals such as lead, tin, copper, aluminium, mercury, cadmium.   |
| E | Refer to <a href="#">Glass - Take</a> and <a href="#">Plastics - Take</a> for lesson plans   |
| E | <p><b>Mining</b></p> <p>Explain: how taking natural resources from the environment can harm it.</p>  |
| L | Look outside for the following: a large stone, piece of wood, a log, a pile of leaves. For each of these items, record what you see when you move it, pick it up or turn it over. Write down what has been disturbed.  |
| E | Discuss: mining can have the same effect on the environment.   |
| L | <p><b>Upgrading project</b></p> <p>Choose the most neglected or bare part of your school grounds. Brainstorm in groups and draw sketches to show how you would improve or beautify it without causing any damage or disturbance to the area surrounding it.</p>  |
| E | Discuss: the need to repair or restore areas damaged by mining or building.  |



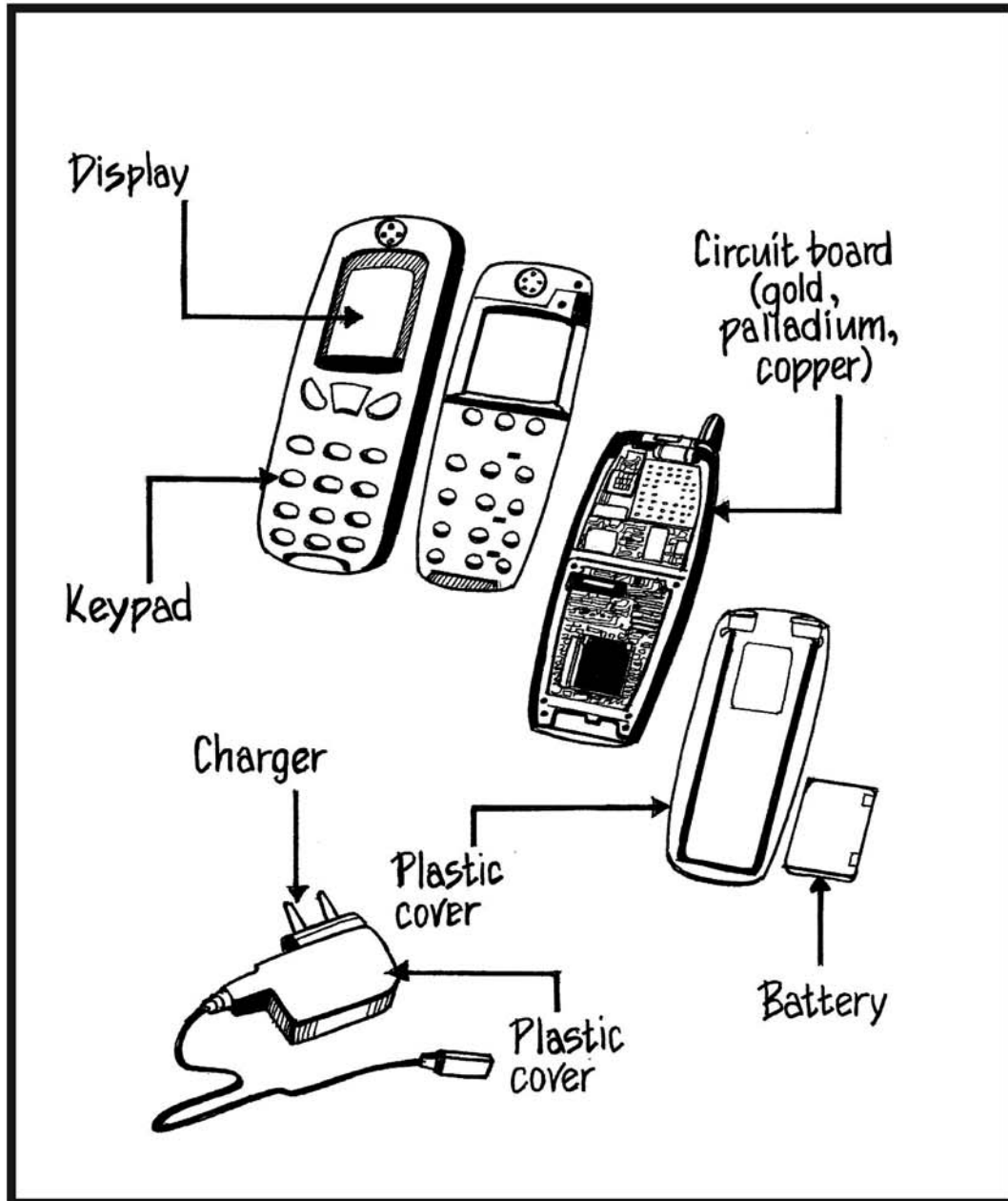
# e-Waste-Make

## Personal computers



# e-Waste-Make

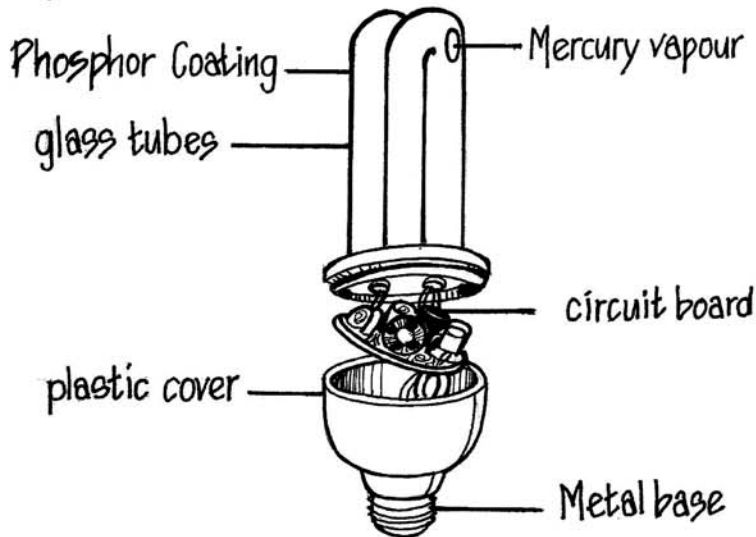
## Cellphones



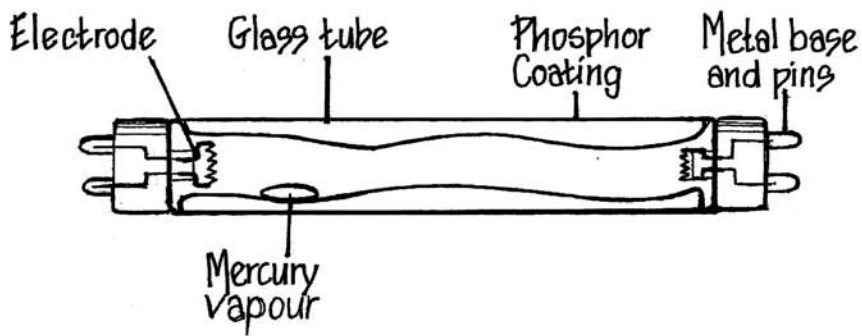
# e-Waste-Make

## Fluorescent lamps

### Compact Fluorescent Lamps (CFLS)

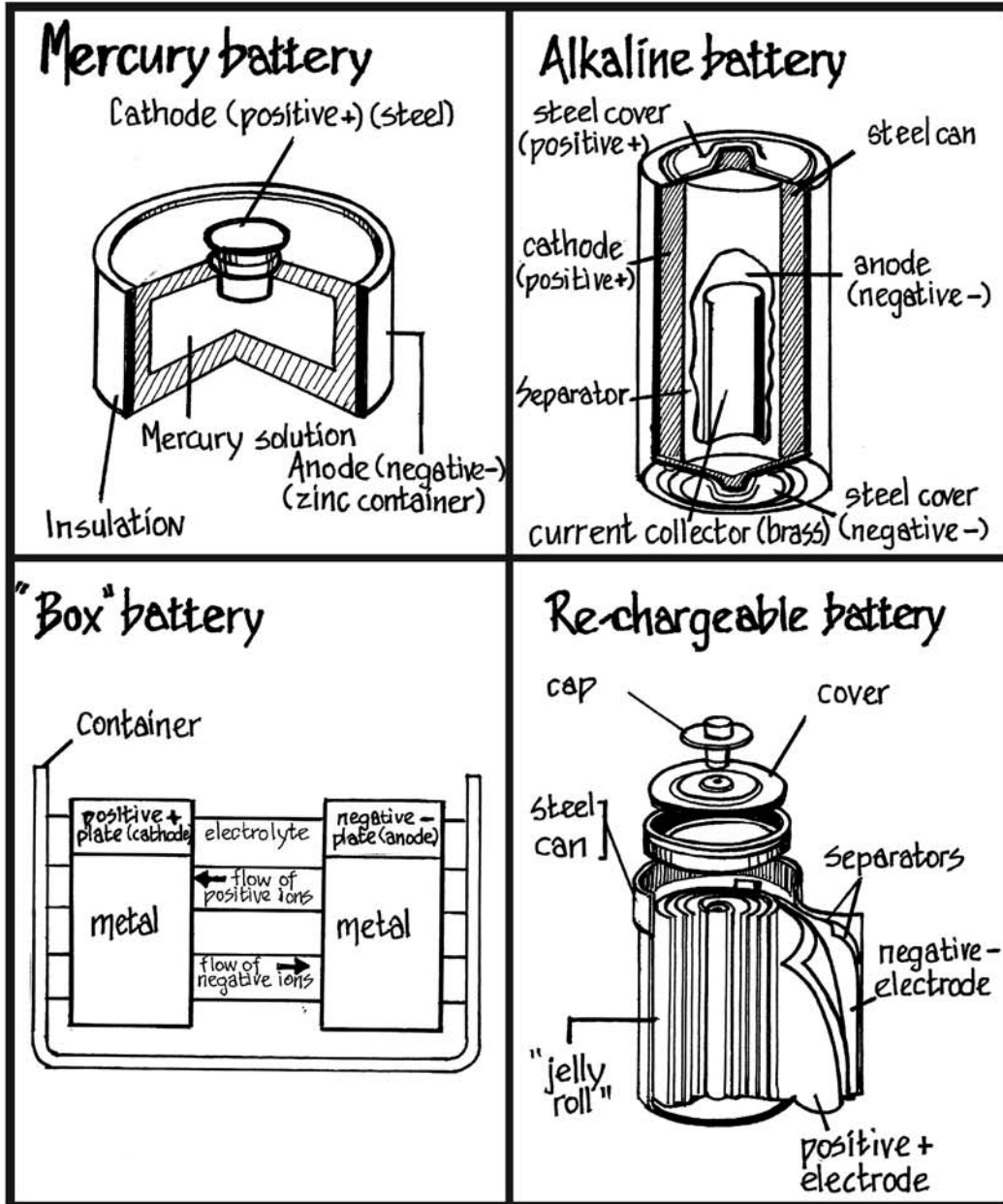


### Fluorescent tubes



# e-Waste-Make

## Batteries



Pick n Pay



# e-WASTE - MAKE

## LEARNING AREA: Technology

### LEARNING OUTCOME 1: Technological processes and skills

Apply technological processes and skills ethically and responsibly using appropriate information and communication technologies.

### LEARNING OUTCOME 3: Technology, society and the environment

Demonstrate an understanding of the interrelationships between science, technology, society and the environment.

*Integration with other Learning Areas:*

| Learning Area    | Learning Outcome                         | Description  |
|------------------|--|--|
| Language         | 4: Writing                               | Write different kinds of factual and imaginative texts for a wide range of purposes  |
| Arts & Culture   | 1: Creating, interpreting and presenting | Create, interpret and present work in each of the art forms (visual arts).   |
| Life Orientation | 2: Social development                    | Demonstrate an understanding of and commitment to constitutional rights and responsibilities, and to show understanding of diverse cultures and religions. |

### ACTIVITIES

(E = Educator L = Learner)

|   |   |
|---|---|
| L | <p><b>How electronic products are made</b></p> <p>Write a letter to the <a href="#">e-Waste Association of South Africa</a> to ask for information on how these electronic products are made and what raw materials are used to make them:</p> <ul style="list-style-type: none"> <li>• personal computers (PCs)</li> <li>• cell phones (mobile phones)</li> <li>• compact fluorescent lamps (CFLs) (energy-saving light bulbs)</li> <li>• batteries</li> </ul> <p>Ask which of these raw materials could harm people and the environment if not handled with care.</p> |
| E | Post the best letter.   |
| E | Refer to <a href="#">Glass - Make</a> and <a href="#">Plastics - Make</a> for lesson plans  |
| E | <p><b>Wall charts</b></p> <p>Divide the learners into four groups i.e. the "techies" (PCs), the "talkies" (cell phones), the "lighties" (CFLs) and the "batties" (batteries).</p>   |
| L | Study the information from the e-Waste Association of South Africa.   |
| L | As a group, make a flow diagram to show how your electronic product is made from raw material to supermarket shelf. Cut out pictures from magazines or draw your own pictures. Label the materials that could harm people and the environment if not handled with care.   |
| L | As a group, choose one learner to present the steps in the process to the rest of the class.  |
| E | Organise a mini election to choose the best poster. Find a box for the voting slips (ballot box).   |
| L | Make your own voting slip. List each group on the slip. Make a cross in a box next to the group you wish to vote for. Fold your slip and place it in the ballot box. This is a secret ballot so don't write your name on your slip.   |
| E | Each group is to choose a learner to monitor while you count the votes. Announce the number of votes for each group, starting with the poster with the lowest number of votes.  |



# e-Waste-Buy



Pick n Pay



ewasa  
e-Waste Association  
of South Africa



# e-WASTE - BUY

## LEARNING AREA: Life Orientation

### LEARNING OUTCOME 1: Health Promotion

Make informed decisions regarding personal, community and environmental health.

### LEARNING OUTCOME 3: Personal development

Use acquired life skills to achieve and extend personal potential to respond effectively to challenges in his or her world.

*Integrate with other Learning Areas:*

| Learning Area   | Learning Outcome                         | Description   |
|-----------------|--|---|
| Social Sciences | 3: Exploring Issues                      | Make informed decisions about social and environmental issues and problems  |
| Mathematics     | 1: Numbers, Operations and Relationships | Recognise, describe and represent numbers and their relationships, and count, estimate, calculate and check with competence and confidence in solving problems. |
| Arts & Culture  | 1: Creating, interpreting and presenting | Create, interpret and present work in each of the art forms (visual arts).  |

### ACTIVITIES

(E = Educator L = Learner)

|   |   |
|---|---|
| E | <b>Habits</b><br>Discuss: habits - what we do over and over without thinking about it.<br>Name some good habits and bad habits. Discuss: how some of our habits could harm the environment.<br>Ask for examples, e.g. littering.  |
| E | Explain: the more things we buy, the more we use up non-renewable resources. Taking natural resources from the environment can harm it. The more things we buy the more waste we have to get rid of. Waste can pollute the environment.   |
| E | Discuss: good "buying" habits, e.g. things that we can repair, things that save energy, things that last longer, things that can be recycled. Discuss: bad "buying" habits, e.g. wasting money, buying things you don't need, wasting money on junk food.   |
| L | <b>Batteries</b><br>Write to <a href="#">UniRoss</a> to find out the difference between disposable (throw-away) batteries and rechargeable batteries.   |
| E | Post the best letter.   |
| L | Look in all the rooms at home and write down all the items that use batteries.  |
| E | Discuss: what happens to these batteries once they need to be replaced?   |
| E | <b>Buy to save energy</b><br>Explain: compact fluorescent lamps (CFLs) are energy saving globes that give five times the light and last up to 10 times as long as ordinary globes.  |
| L | Draw a plan of the school buildings/grounds. Mark with a cross the position of each globe. Add up to find the total number of globes in the school. If one CFL gives the same amount of light as 5 globes, work out how many CFLs you need to buy to give the same amount of light.                       |
| L | <b>Buy to protect the environment</b><br>Write to <a href="#">Hewlett Packard</a> , <a href="#">Dell</a> , <a href="#">Nokia</a> , or <a href="#">Fujitsu Siemens</a> to find out how they make their products environmentally friendly. Ask for tips on how to use equipment to protect the environment. |
| E | Post the best letter  |
| L | Make a poster for the computer room. List tips on how to use the equipment to make it last longer and protect the environment.  |



# e-Waste-Use



# Waste-Re-use



# e-WASTE - USE AND RE-USE

## LEARNING AREA: Technology

### LEARNING OUTCOME 2: Technological knowledge and understanding

The learner will be able to understand and apply relevant technological knowledge ethically and responsibly.

### LEARNING OUTCOME 3: Technology, society and the environment

Demonstrate an understanding of the interrelationships between science, technology, society and the environment.

*Integration with other Learning Areas:*

| Learning Area    | Learning Outcome                         | Description  |
|------------------|--|--|
| Mathematics      | 1: Numbers, Operations and Relationships | Recognise, describe and represent numbers and their relationships, and to count, estimate, calculate and check with competence and confidence in solving problems. |
| Life Orientation | 2: Social development                    | Demonstrate an understanding of and commitment to constitutional rights and responsibilities, and show understanding of diverse cultures and religions.            |
| Arts & Culture   | 1: Creating, interpreting and presenting | Create, interpret and present work in each of the art forms  |

### ACTIVITIES

(E = Educator L = Learner)

|   |   |
|---|---|
| L | <b>Personal computers in the home and school</b><br>Do a survey to find out: number of computers in the school, number of computers at home, number of parents who use computers at work. If each computer costs R7000, work out the total cost of buying all these computers.                                  |
| E | <b>Donate to others</b><br>Find out if there is a charity or school in your area who could use second-hand computers and other office equipment. Set up a scheme at school to give old office equipment to others in need. Arrange for transport or advise the charity or school when to collect the equipment. |
| E | <b>Use with care</b><br>Introduce the term reduce. Explain: care for your things and they will last longer. Longer lasting products make less waste.  |
| L | Bring in a cell phone user's guide from home. Study the guide for tips on how to care for the phone and its battery to make them last longer.   |
| E | Write on the board as each learner reads out one tip and promises to put it into practice.  |
| L | <b>Drama</b><br>Write a story about the life of an old cell phone and old computer lying on a pile of waste at the back of a building. Give them names. Describe how they feel: very happy and wanted when new, and then feeling unhappy and unwanted when thrown away. Act out the story.                      |
| E | <b>Waste-2-art</b><br>Explain: Electronic waste contains harmful chemicals. Learners need to be very careful and should only dismantle electronic waste under an educator's supervision.  |
| L | Write to the <a href="http://www.ewasa.co.za">e-Waste Association of SA</a> for ideas on Waste-2-art projects and guidance on how to dismantle electronic waste safely for these projects.  |
| E | Post the best letter  |
| E | Discuss: ideas for waste-2-art projects   |

