FOREWORD

Access to safe drinking water and hygienic sanitation facilities are enshrined in our Constitution as basic human rights. A failure to secure these basic human rights can mean the difference between life and death for the poorest of our communities. Ensuring safe drinking water is not simply a question of providing water infrastructure. Water and sanitation without the right health and hygiene practices may result in water that is not safe to drink, and sanitation that is a threat to our health. 'Water services' are therefore about providing water and sanitation services, which address the health of our communities as well as tackling the cycle of poverty and disease.

Central to safe drinking water, improved health, and poverty reduction is better-managed water, where our water resources are developed, protected, used, conserved and managed sustainably. A holistic approach is needed to avert the vicious cycle of water- related diseases, ill-health and poverty. Fundamental to this approach is developing a vision and understanding in society of sustainable water services and sustainable water resources. This vision of sustainability requires ensuring that our society is empowered with information, knowledge and skills to use water efficiently and wisely, to practice good hygiene habits for healthy living, and to protect our water resources so that they do not become contaminated.

A major initiative towards achieving this vision is the 2020 Vision for Water and Sanitation Education Programme (2020 VFWSEP), which targets learners at schools. This is a collaborative programme between the Department of Water Affairs and Forestry (DWAF) and the Department of Education (DoE). It encourages learners to participate in water resource management, to promote good health and hygiene practices and to identify problems related to water and sanitation in their schools and communities.

It is particularly significant that through the 2020 VFWSEP, water and sanitation issues have now become integrated into the school curriculum, thus ensuring continuity and sustainability of this initiative and ensuring that our children will now learn about these issues from an early stage. We also hope that this programme will stimulate the interest of learners to future career opportunities in the water sector thus addressing the skills shortage in this sector.

The integration of water and sanitation in the school curriculum necessitated the development of curriculum aligned educational resource materials for educators. Consequently, the Department of Water Affairs and Forestry in collaboration with other sector partners developed these resource materials for grades R – 9, and have been tested by 90 educators from the 9 provinces. I am confident that these materials provide excellent inputs for learners and communities about water resource management, water supply and sanitation related issues.

I would like to encourage all learners and educators to become involved in the 2020 Vision for water and Sanitation Education Programme and thereby become involved in critically important issues related to water supply, sanitation and water resource management. These are issues that have serious impacts in terms of health and well being for many communities and your involvement can make a significant difference to the quality of people's lives.

I urge all schools to identify water-and-sanitation related problems such as water leaks, blocked toilets, polluted water, and so on, and to bring these problems to the attention of their local municipalities or the Department of Water Affairs and Forestry in their respective areas.

In order to ensure continuity from Grade R to Grade 12, the Department of Water Affairs and Forestry will also develop educational resource materials for the Further Education and Training (FET) Band.

I would like to express my sincere appreciation to the team who developed the materials and to the educators who tested the resource materials. I have no doubt that your efforts will bear fruit, and instill principles of good water resource management and good hygiene, and ensure that our learners become ambassadors for sustainable water and sanitation services. This will mean better health, longer lives and greater dignity for the poorest of our people. Jointly we will work towards a better education and a better life for all.

Mrs L. Hendricks
MINISTER – DEPARTMENT of WATER AFFAIRS and FORESTRY

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INTRODUCTION

The purpose of this guide is to help educators to educate children to develop a healthy, mature and responsible attitude towards water and sanitation resource management and basic hygiene practices. The guide also aims to encourage the development of awareness to infections, so that communicable diseases do not infect people. The knowledge and skills gained from this resource pack, combined with values taught in the home, will enable and empower young children to lead healthy lives and become the ambassadors of good hygiene and water conservation. The content and teaching / learning activities are intended to be developmentally appropriate and sequential. It is appropriate that water conservation and sanitation information be infused into the established school curricula areas to ensure a comprehensive approach to health education.
This resource material, therefore, assists with the infusion mentioned above into the existing school curricula.

BACKGROUND INFORMATION

In 1996 the Department of Water Affairs and Forestry Sub – Directorate for Community Development and Environmental Education commissioned the development of the first Resource Pack as part of its commitment to support Environmental Education and Water Conservation linking directly to Outcomes Based Education (OBE).
Its ultimate goal was to integrate the 2020 Vision for Water Education and Sanitation Programme into the school curriculum and community development training and capacity building programmes.
However, with the advent of the Department of Education's National Curriculum Statement, it became imperative that the second edition be developed in order to make it easy for the educators to integrate water and sanitation into the school curriculum.

Yet again, the Department of Water Affairs and Forestry, in its pursuit to support all programmes that serve to improve the immediate environment of young children invite all its partners including learners to assist in taking up the challenge of ensuring a better environment through active participation in Environmental Education for sustainable development, so that by the year 2020 the state of the said environment, water conservation and sanitation in South Africa is positively sustained.

ACRONYMS

AC -	**Arts and Culture**
AL -	**English – Home Language**
AS -	**Assessment Standards**
CO -	**Critical Outcomes**
DO -	**Developmental Outcomes**
EMS -	**Economic and Management Science**
HL -	**Home Language**
IAP -	**Invasive Alien Plants**
LA -	**Learning Area**
LO -	**Learning Outcomes**
LO -	**Life Orientation**
MATHS -	**Mathematics**
NS -	**Natural Sciences**
SS -	**Social Sciences**
Tech -	**Technology**

SUMMARY OF MODULES

Topics	LO's (*Main and #integration)	Environmental learning focus
1. Forms of water	*NS: LO1: AS1 LO2 AS1, 2 #LO LO3: AS6	In this chapter learners learn about different forms of water that will expose them to learn new concepts.
2. Every drop of water counts	*NS: LO1: AS1 # AL LO4: AS1	In this activity learners describe the processes involved in the water cycle.
3. How to access ground water?	*SS (G) LO3: AS 2 #NS LO1: AS1, 2	This lesson helps learners to understand what groundwater is and how to look after it. They also learn that it takes a long time for water to collect under the ground so we need to be careful not to waste groundwater and to keep it clean.
4. Water resources	*SS (G) LO3 AS1 # AL LO5: AS2	Learners will learn that South Africa is mainly a very dry country, and that they have to conserve water.
5. Use resources wisely	* EMS LO1: AS2 NS LO3: AS2 #SS (G) LO3: AS1	Learners will be able to distinguish between responsible and irresponsible uses of resources. Learners will know the importance of preserving and conserving water as a scarce resource in our country.
6. Do not pollute water	*LO LO1: AS2 #HL LO2: AS1	In this activity learners will discuss how different events in the environment cause water pollution.
7. Water filtration	*NS LO1: AS1, 2 #TECH LO1 AS1	In this chapter learners are engaged in conducting an experiment to purify water, which will improve the health condition of people in the community.
8. Healthy Living - Stay away from germs	*LO LO1: AS2 SS (G) LO2: AS3 # HL LO2:AS1, 2 #NS: LO3: AS1	Learners will gain an understanding and knowledge about how basic human needs were met in the past through interviewing their parents about their personal health and hygiene.
9. Healthy environment	* LO LO1: AS2 #SS (G) LO2: AS2 HL LO2: AS	Through this chapter learners will know how the lack of access to water and proper sanitation facilities will lead to the spread of diseases. in this lesson learners are encouraged to adopt safer hygiene practices.
10.Children's health rights	*LO LO1:AS3 # AL LO2: AS1	In this chapter learners are exposed to their health rights and will get to know when they are deprived of their rights.
11. Resources and Services	*SS (G) LO3: AS2 #AL LO3 AS1 LO5 AS2	In this chapter learners will have an understanding that access to basic resources and services like health care and running water are a human right.
12. Community efforts in fighting poverty	*EMS LO3: AS 3 # SS (G) LO3: AS3	In this chapter learners use water to improve the quality of life. The activity encourages learners to be involved in community projects that exemplify ways of sharing resources and reducing poverty.
13. Water safety rules	*LO LO4:AS5 #AL LO5: AS2 HL LO4: AS1	In this activity learners will identify dangers and responsible safety measures in and around water.

Topics	LO's (*Main and #integration)	Environmental learning focus
14. Why are trees important?	*NS LO1: AS1 # HL LO3: AS1 LO4:AS1	In this activity learners will list the importance of trees after being chopped down and discuss the value of trees.
15. Identification of IAPs	*NS LO2: AS1 #HL LO5: AS2	In this activity learners will identify the invasive alien plants in their school gardens.

MESSAGE AND GUIDANCE TO THE TEACHER ON INVASIVE ALIEN PLANTS

Introduction to the World of Invasive Alien Plants

Invasive alien plants have a damaging impact on our environment. It is causing billions of Rands of damage to South Africa's economy every year, and are the single biggest threat to our water and biological biodiversity. They intensify the impact of fires and floods and increase soil erosion. Of the estimated 9000 plants introduced to this country, 198 are currently classified as being invasive. It is estimated that these plants cover 10.1 million hectares or about 7 % of the country and the problem is growing at an exponential rate.

The inclusion of invasive alien plant content into the resource is to provide you as the educator with relevant information about the topic and to assist you in educating learners and others about this very serious environmental threat to especially our water sources. The lessons included will also assist you in taking action to adequately respond to the problem.

The lessons on invasive alien plants were developed and implemented by a diverse group of educators during a research project which focused on the development of curriculum aligned invasive alien plant resource materials. The educators were constituted from the three phases (GET band) and supported by curriculum advisors from the Western Cape (EMDC) South Metropole. Sixteen schools with 32 educators were involved in the project. The Working for Water Programme acknowledge the following schools for their contributions:

Primary schools: Hyacinth, Siyazingisa, Huguenot, Levana, St Mary's, Westville, Qingqa Mntwana, Edendale.
Senior Schools: Glendale, Grassdale, Oscar Mpetha, Cedar, Sopumelela, I.D. Mkize, Goodhope Campus, Grassy Park.

For additional information on invasive alien plants your can contact the Working for Water Programme offices. Toll free no. 0800 005376

HOW TO USE THIS GUIDE:

SCOPE AND SEQUENCE:

The scope of this resource pack includes:

- Water is life
- Water use efficiency
- Water quality management
- Sanitation, health and hygiene
- Water safety
- Forestry and invasive alien plants

The sequence of the activities contained in this Resource Pack is graded for **Grade 4** and is aligned to the National Curriculum Statements (NCS).

LAYOUT OF EACH TOPIC:

At the beginning of each topic, learning area/s, learning outcomes and assessment standards attained in that chapter are outlined and are further interpreted in the activities that the learners will achieve in that lesson.

Mostly, each chapter begins with a tuning in activity, which serves to identify existing knowledge or gaps pertaining to the topic and to introduce the learners to the activities of the whole chapter. Please use results of these activities to inform the development of the structure of the main topic.

Finally, a suggestion of what can be assessed during the learning and teaching process has been made and linked to the learning outcomes and assessment standards in that chapter. Other aspects pertaining to assessment have been left entirely to the educators because developers of this module indicate that the choice of what assessment strategies to use is a subjective one. It is unique to each school, grade and depends on the educator's professional judgment as well as availability of space and resources.

Same applies to time allocation and other aspects such as linking the lessons to the previous or forthcoming lessons. Although there are some indications here and there, those aspects can best be catered for in the development of lesson plans, which will again be unique to different circumstances.

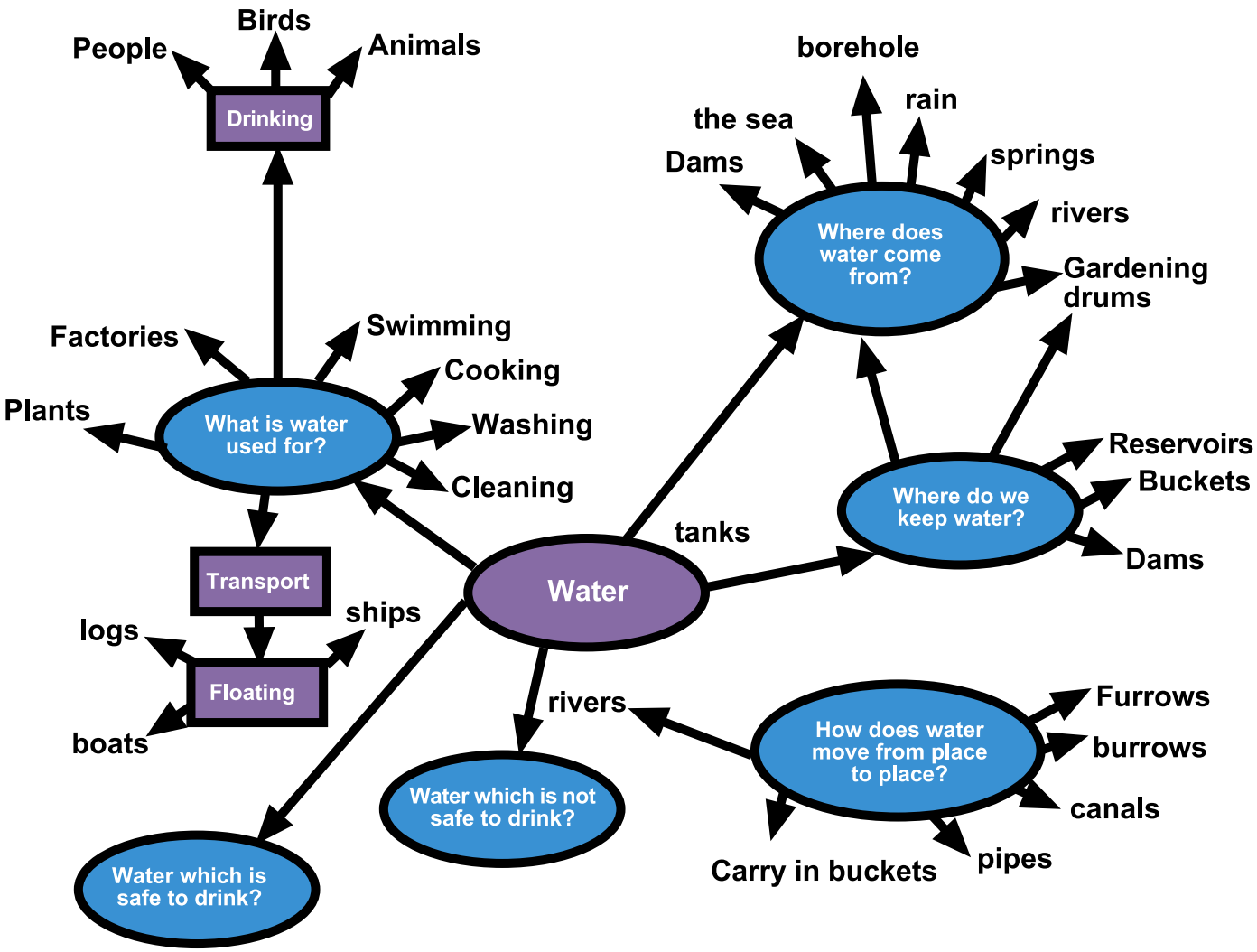
TEACHING / LEARNING STRATEGIES:

The teaching / learning suggestions in this guide are meant to serve as guidelines, not requirements. In many cases there are many suggestions for activities that will accomplish the same aspects of the outcome.
It is, therefore, not intended that you use all the given strategies. Rather, one or more of the teaching/ learning strategies will be appropriate for a particular grade or situation.

The teaching/learning strategies used in this guide use the current Outcomes Based Education (OBE) methodologies such as:

BRAINSTORMING:

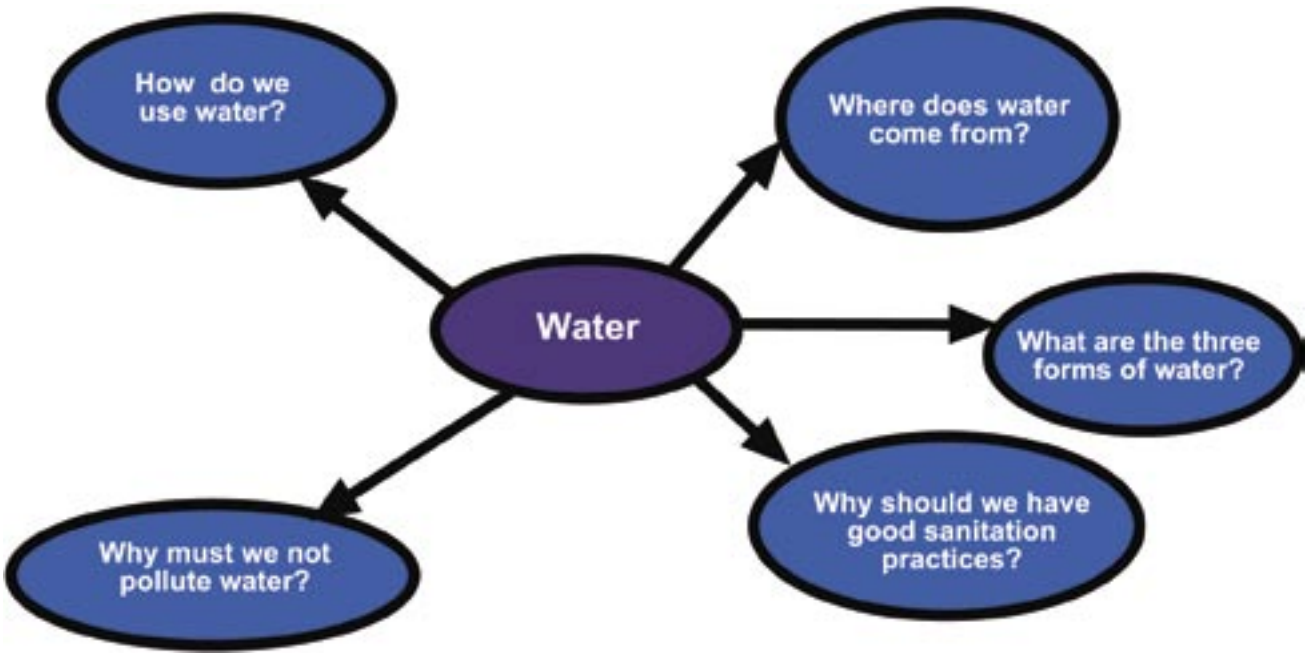
Brainstorming is used to begin discussions or generate a variety of ideas. One of the exemplars of brainstorming methodology is the use of mind / concept map shown below.



CLASS DISCUSSION:

It is used to begin a lesson, to review or to clarify information. For instance, you can use an incomplete mind map to begin a lesson an example of which is shown below.

It is important to realize that there is not only one-way to do mind maps. Different learners will know different things and you should accept these, if they are correct, even if they are not in your mind map.



GROUP DISCUSSION:

This strategy can be used to produce information or to analyse ideas while encouraging interaction among learners in line with group dynamics principles.

ROLE PLAY:

Role-play actively involves learners in learning concepts or practising behaviours in non-threatening situations by acting out an imaginary situation.

HANDS-ON ACTIVITIES:

Use of worksheets, puzzles, and games or other types or written materials to test or review learner's knowledge of a particular topic are especially effective for foundation phase grades.

ASSESSMENT:

In this guide assessment is integrated into the learning and teaching process.

An integrated approach, which assesses both the process of learning and the product of learning, is used here in order to assess holistic learning. This involves:

- Assessing learners against outcomes and assesment standards, whilst they are working on tasks and activities.
- Assess learner's investigative, problem solving and co-operative skills.
- Assessing at the end of learning cycles. This could be a product such as a project or a summative assessment.

WATER IS LIFE

1. FORMS OF WATER

MAIN LEARNING AREA
NS LO1: SCIENTIFIC INVESTIGATIONS
The learner will be able to act confidently on curiosity about natural phenomena, and to investigate relationships and solve problems in scientific, technological and environmental contexts.
AS1: Plans investigations: Contributes ideas of familiar situations, needs or materials, and identifies interesting aspects which could lead to investigations.
NS LO2: CONSTRUCTING SCIENCE KNOWLEDGE
The leaner will know and be able to interpret and apply scientific, technological and environmental knowledge.
AS1: Recalls meaningful information: at the minimum, uses own most fluent language to name and describe objects, materials and organisms.
AS2: Categorises information: sorts objects and organisms by a visible property.

INTEGRATION WITH OTHER LEARNING AREAS:
LO LO3: PERSONAL DEVELOPMENT
The learner will be able to use acquired life skills to achieve and extend personal potential to respond effectively to challenges in his or her world.
AS6 Applies appropriate study skills.

ACTIVITY
Learners will be able to:
1. Explore the properties of water.
2. List the phases of water.
3. Make models of water molecules.
4. Investigates the importance of water.

BACKGROUND INFORMATION
Water is an important substance or resource on earth. It is found everywhere and occupies ¾ of the earth. Therefore without water there is no life; thus water is life.

PREPARATION FOR THIS CHAPTER

Make sure that the following are assembled beforehand:
- Ice cubes
- Liquid water
- Kettle
- Saucer
- Stove / hotplate

ACTIVITY1A – PROPERTIES OF WATER

In this activity learners are investigating the properties of water.

This is the activity that aims at determining learner's prior Knowledge.
1. Ask the learners to brainstorm with their partners the three phases of water.
2. Learners must list them in their workbooks.
3. Together with the learners, pour water into the container and ask learners to investigate the following:
    - How does it taste?
    - Does it have shape?
    - How does it smell?
    - What is the colour of water?

ACTIVITY 1B- FORMS OF WATER

- In this activity learners will demonstrate how water changes from one state to the other.
- Bring ice cubes to class.
- Let learners hold an ice cube and ask them what happens. (ice melts)

Check if the learners understand words like: boiling freezing and evaporation.

What to do:

A. Conduct an experiment with water in its different phases. You need to guide the learners when they demonstrate these steps and ask them to observe carefully and answer the questions in their workbook.

- Pour some water into a glass. What shape is the water in the glass? *Water takes the shape of the glass.*
- Now pour the same water into a plastic lunch box. What is the shape of the water now? *Water takes the shape of the container.*
- Put a block of ice into the glass. What shape is the ice? *Depending on the container it was before freezing, either square, round etc.*
- Put a block of ice in a plastic lunch box. What shape is the ice? *Depending on the container it was before freezing, either square, round etc.*
- Leave the ice to stand for a while in the box. What happens? *Ice melts and the liquid state takes the form of a box.*
- Boil some water in a kettle or on a hotplate. What happens when you boil water for a long time? Where does the water go? *Water changes into steam and the vapour escapes into the atmosphere.*
- Hold a cold spoon or saucer near the spout of the kettle or over the saucepan. What happens and why? *Vapour settles on the spoon and after some time changes into small drops of water.*

TAKE CARE! Steam from boiling water can burn you. Be very careful. Use a cloth over your hand and wrist when you put them near steam.

ASSESSMENT
The educator will use memorandum and mark learners' exercises.

Ask learners to fill in the table in their workbooks.

State or phase	Can you see it?	Does it stay the same shape?	What does it feel like?	Can it flow by itself?
Liquid water	YES	NO	WATERY SOFT	YES
Ice	YES	YES	HARD	NO
Water vapour	NO (STEAM ONLY)	NO	HOT	YES

In consolidating their understanding of the phases of water, learners need to engage in this exercise and choose the words from the box to fill in the blank spaces. These are some of the responses that you can expect from the learners.

There are **three** forms of water. Each form has different **properties**
Ice is the **solid** form of water. When water evaporates and becomes water **vapour** in the air, it is in its **gas** forms.
Water can change from one form to another. Ice **melts** to become water. Water freezes when it changes to ice, or **evaporates** when it changes water vapour. Water vapour condenses when it changes to a **liquid** as it cools.

liquid
gas
properties
melts
evaporates
three
solid
vapour
freezes

2. EVERY DROP OF WATER COUNTS.

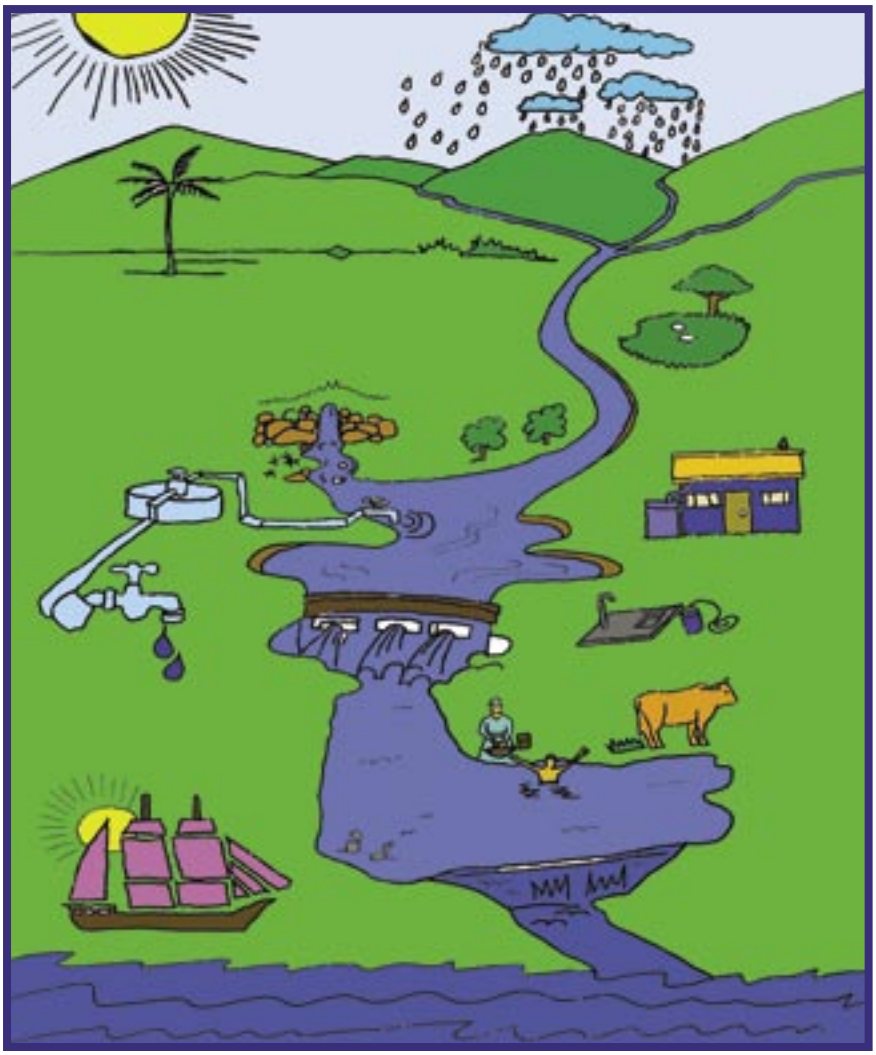
MAIN LEARNING AREA
NS LO1: SCIENTIFIC INVESTIGATIONS
The learner will be able to act confidently on curiosity about natural phenomena, and to investigate relationships and solve problems in scientific, technological and environmental contexts.
AS1: Plans investigations: Contributes ideas of familiar situations, needs or materials, and identifies interesting aspects which could lead to investigations.

INTEGRATION WITH OTHER LEARNING AREAS
AL: LO4 WRITING
The learner will be able to write different kinds of factual and imaginative text for a wide range of purposes.
AS1: Writes to communicate information:
ß Writes simple instructions.

ACTIVITY
Learners will be able to:
- Understand the behavior of water.

BACKGROUND INFORMATION
Water is an important natural resource that never depletes or gets used up. Water always changes its forms from liquid to solid or gas. These forms of water move from earth to the sky and back to earth. This process is called the **water cycle.** Water falls from the sky to the earth as rain or snow. Some of the water soaks into the ground and is stored as **groundwater.**

ACTIVITY 2A: Water cycle diagram



In this activity learners are learning about the behaviour of water. They need to describe the processes involved in the water cycle. They are being conscientised on the fact that water is being formed everyday; the same water that we use now has been there since time immemorial. Hence, the importance of taking care of it.

What to do?

Did you know?
The total amount of water on earth stays the same. The water that exists now has always existed

1. Ask the learners to look at the diagram that illustrates the water cycle.

2. Learners are supplied with the sentences that describe the water cycle. They need to try to describe what happens in the water cycle by rearranging the sentences in sequential order.

3. Learners must use the following sentences to explain the sequence in the water cycle:
   (a) The sun heats the Earth's surface and water changes to vapour.
   (b) The rest of the water falls into streams, dams, rivers and / or oceans.
   (c) Water falls on earth as raindrops or snow.
   (d) This is called the water cycle.
   (e) Some of the water soaks into the ground and is stored as groundwater.
   (f) Plants give off water vapour too.
   (g) Water vapour in the sky condenses. It falls back to Earth as rain or snow.
   (h) The heated vapour rises into the sky and forms clouds.

ASSESSMENT

In assessing the learners' responses, it is important to consider the sequence. Give a full mark for the correct sequence and no mark if there is no sequence at all.

Learners may follow the following sequence in describing the water cycle:

(a) (h) (f) (g) (c) (b) (e) (d)

ACTIVITY 2B

In this activity learners are learning new words. They need to fill in the following puzzle using explanations below to strengthen learners understanding of the processes involved in the water cycle.

1.	E	V	A	P	O	R	A	T	I	O	N	
2.	C	O	N	D	E	N	S	A	T	I	O	N
3.	W	A	T	E	R							
4.	W	A	T	E	R	C	Y	C	L	E		
5.	W	A	T	E	R	V	A	P	O	U	R	
6.	P	R	E	C	I	P	I	T	A	T	I	O	N

Across

1. ---------- the process of changing water into a vapour.
2. ----------the change of water from gas into a vapour.
3. ----------is a very important resource.
4. ----------the cycle of water on earth.
5. ----------the gaseous state of water.
6. ----------water droplets or ice particles drop down.

Clue

- Evaporate – dry
- Condense – becomes harder
- Precipitate – rain
- Vapour – gas
- Cycle – round & round.

Remind the learners about the importance of labeling all the processes/steps involved in the water cycle.

ASSESSMENT

Assess whether the learners were able to:

- Answer the questions.

3. HOW TO ACCESS GROUND WATER?

MAIN LEARNING AREA
SS (G): LO3 EXPLORING ISSUES
The learner will be able to make informed decisions about social and environmental issues and problems.
AS 2: Suggest ways to improve access to resources in a particular context (makes choices).

INTEGRATION WITH OTHER LEARNING AREAS
NS: LO1 SCIENTIFIC INVESTIGATION
The learner will be able to act confidently on curiosity about natural phenomena, and to investigate relationships and solve problems in scientific, technological and environmental contexts.
AS1: Plans investigation: Contributes ideas of familiar situations, needs or materials, and identifies interesting aspects which could lead to investigations.
AS2: Conducts investigations and collects data: Explores the possibilities in available materials, finding out how they can be used.

ACTIVITY
Learners will be able to:
- Define what groundwater is.
- Explain where groundwater is found.
- Make a groundwater model.
- Identify sources of groundwater pollution and possible solutions.

Did you know?
Only 3% of the earth's water supply is fresh water; and almost 2% of that is groundwater?

BACKGROUND INFORMATION

Read the following background information to the learners.
Groundwater is water that collects below the earth's surface in bedrock, spaces between soil and rock particles.

Groundwater quality is better than that of surface water because it is not exposed to pollution. However, substances that seep into the ground can pollute groundwater.

What is groundwater?
Groundwater is water located beneath the ground surface in soil , or spaces and in the fractures of rock formations.
Do you know where the water you drink comes from?
In some areas of South Africa people get their water from under the ground. In these areas small amounts of rainwater soak into the ground and collect in the cracks and spaces in the rock deep under the ground. We call this **groundwater.**
People often think that groundwater occurs in large underground dams or lakes or in streams under the ground. Groundwater is however, only water that fills the natural openings that are in rocks or sand under the ground. These openings can take many forms, for instance, the cracks or joints between rocks, the openings between small sand or mineral particles in the soil, or the openings between sand particles in dunes or river sand-filled riverbeds. Groundwater comes from rain. A small percentage of rain that falls as part of the water cycle soaks into the ground and fills the openings in the rocks and into the sand below the surface of the ground.

How do we access groundwater?
We can drill down to the water underground and pump it up so we can use it. Water can be pumped to the surface with a pump. There are many different kinds of pumps. We can reach groundwater by drilling a borehole and pumping the water to the surface. It takes a long time for water to collect under the ground so we need to be careful to keep it safe and not waste it.

ACTIVITY 3A: Making a ground water model

In this activity learners are demonstrating how to make a groundwater model.

PREPARATION FOR THIS ACTIVITY

Make sure that the following materials are assembled beforehand:

- glass or plastic containers
- dry gravel
- small stones
- drinking straw

You may divide learners into groups (four in each group) and ask each of the learners in each group to bring along one of the items that will be needed in each group.

What to do?

Assist the learners in making the ground water.

Ask learners to make a groundwater model. Instruct them to follow steps as outlined in the worksheet below. Make sure that they record all the observations in each step.

GROUND WATER WORKSHEET

1. Take a glass or clear plastic container and fill it with dry gravel and small stones at the bottom and sand.
2. Slowly pour some water into the sand and observe what happens. This shows how water collects under the ground.

3. Pour some more water into the sand. Make sure that you do not fill the container to capacity. What happens to the level of water? We call this top level of the water the water table.

   ……
   ……
   ……

4. Wait for few minutes and record what you see.

   ……
   ……
   ……

5. Take a drinking straw and put it into the base of the container. The straw is like a borehole. Suck up some water. What happens to the water table now?

   ……
   ……
   ……

6. Record your findings and share them with others.

   ……
   ……
   ……

Explanation

This is the method which is used by most communities that do not have taps or access to surface water.

ACTIVITY 3B: Groundwater pollution

In this activity we will:

- Identify potential sources of water pollution.
- Suggest different solutions to the potential problem.

What to do?

1. Ask the learners to study the following ground water poster and identify the potential pollution source.
2. They must list them in the following table and brainstorm the possible solution to the problem identified.

Potential Pollution Source	Solution
1. Over application of fertiliser.	Apply fertilisers sparingly.
2.	
3.	
4.	
5.	
6.	

ASSESSMENT

Assess the learners' groundwater models using the following rating scale:

1	Unable to do work / make groundwater model
2	Needs assistance. Did not master work
3	Satisfactory, mastered work
4	Model developed above expectations.

WATER USE EFFICIENCY

4. WATER RESOURCES

MAIN LEARNING AREA
SS (G) LO3: EXPLORING ISSUES
The learner will be able to make informed decisions about social and environmental issues and problems.
AS1: Identifies issues associated with resources and services in a particular context [identify the issue].

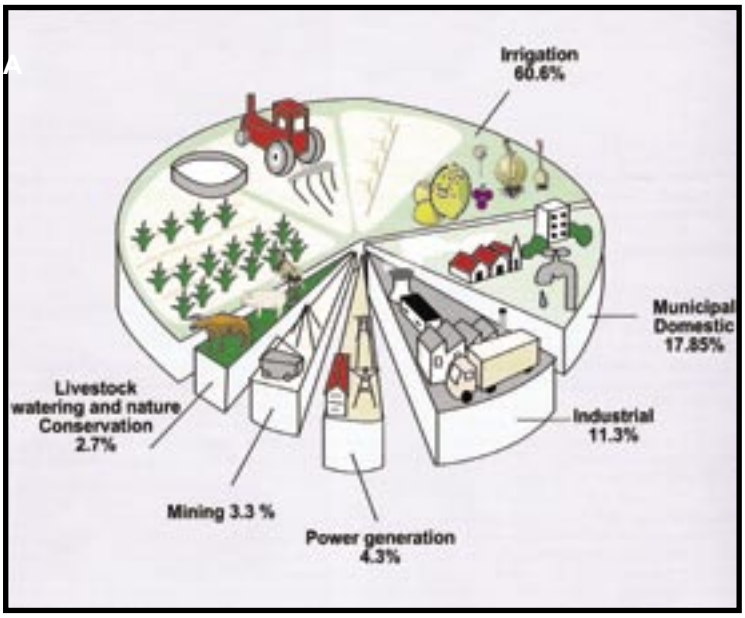
INTEGRATION WITH OTHER LEARNING AREAS
AL: LO5 THINKING AND REASONING
The learner will be able to use the language to think and reason, as well as to access, process and use information for learning.
AS2: Uses language for thinking:
• Answers and begins to ask some complex questions (e.g. "Why…?"How do you think…?)

ACTIVITY
At the end of this activity learners will be able to:
- List all the water users from the pie chart.

BACKGROUND INFORMATION
South Africa is a water stressed country. Water is our most precious natural resource. We have to conserve it in every way we can. Remember that conserving a resource means looking after it and using it wisely so that there will be enough of it in the future.

How do we use water in South Africa?

Look at the pie chart that shows the different ways in which we use water in South Africa.



ACTIVITY 4A- HOW DO WE USE WATER IN SOUTH AFRICA?

LET'S GET STARTED ON CONSERVING WATER.

1. Ask learners to work in pairs and answer the questions below using the information on the pie chart.

(a) Which is the biggest user of water in South Africa?

_____

(b) List all the users of water from the biggest user of water to the smallest user of water.

_____

_____

_____

2. Write down some ways in which you think we use water in the ‘municipal and domestic’ slice of the pie.

_____

_____

MEMORANDUM – WATER RESOURCES

(a) Irrigation
(b) Irrigation, municipal and domestic, industrial, making electricity at power stations, mining, water for stock, nature conservation.

2. Drinking, washing ourselves, washing clothes, cleaning, preparing food.

5. USE RESOURCES WISELY

MAIN LEARNING AREA
EMS LO1: THE ECONOMIC CYCLE
The learner will be able to demonstrate knowledge and understanding of the economic cycle within the context of the economic problem
AS2: Explains the effects on the community of both responsible and irresponsible use of resources and services.
NS: LO3 SCIENCE, SOCIETY AND THE ENVIRONMENT
The learner will be able to demonstrate an understanding of the interrelationships between science and technology, society and the environment.
AS2: Understand the impact of science and technology: identifies features of technological devices around him or her, and outlines their purpose and usefulness.

- Dismantles a tap or uses cross-section diagrams of a tap to explain why a closed tap may drip and waste water.

INTEGRATION WITH OTHER LEARNING AREAS
SS (GEO): LO 3: EXPLORING ISSUES
The learner will be able to make informed decisions about social and environmental issues and problems.
AS1: Identifies issues associated resources and services in a particular context.

ACTIVITY
Learners will be able to:

- Identify the resource or service shown in the picture.
- List ways in which people are wasting resources.
- Identify the responsible and irresponsible use of resources and services from a picture.

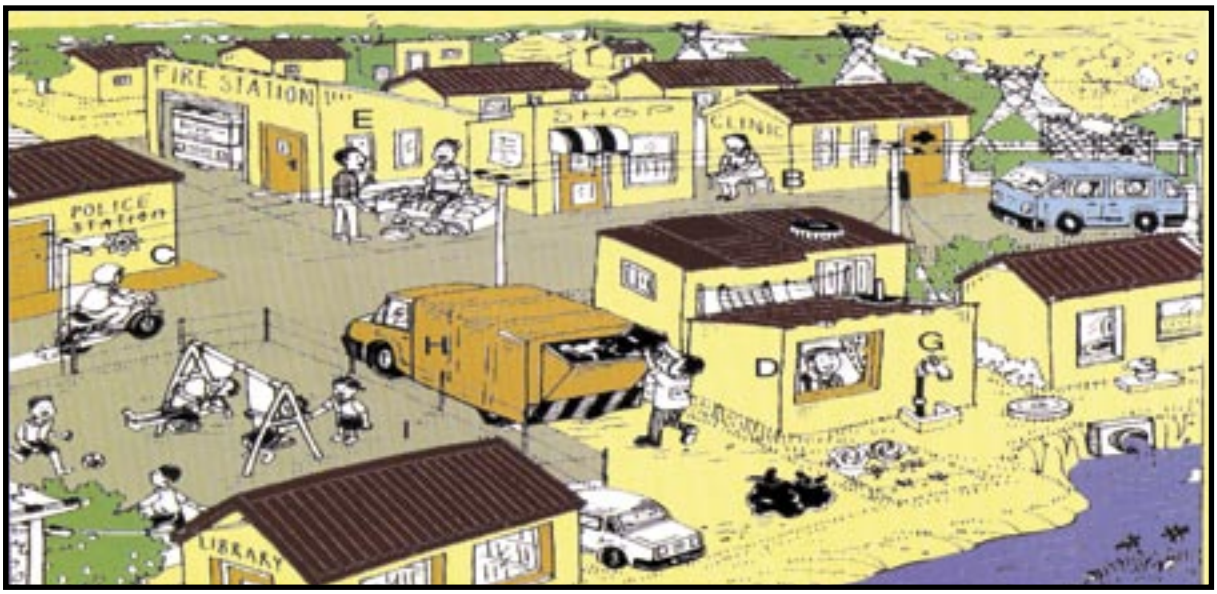
GUIDELINES FOR THE LESSON
In this lesson learners will acquire knowledge on ways in which resources and services are used in both responsible and irresponsible manners. Learners will know the importance of preserving and conserving water for the purposes of sustainability as it is a scare resource in our country. They will also have an opportunity of exploiting pictures, thus increasing their vocabulary. They will learn appreciation of the sustainable use of resources.

ACTIVITY 5A: RESOURCE AND SERVICE

Divide the class into pairs.

- Ask the learners to study the following pictures and answer the questions that follow:

PICTURE A



- For each letter A identify the resource or service shown and write it in column A of the worksheet.
- In column B state whether it is a resource or a service.
- In the third column indicate with a tick (√) or a cross (X) which of these resources they do or do not have in their community?

Picture of	Resource / Service	(√) / X
A.		
B.		
C.		
D.		
E.		
F.		
G.		
H.		
I.		

Answers to picture A

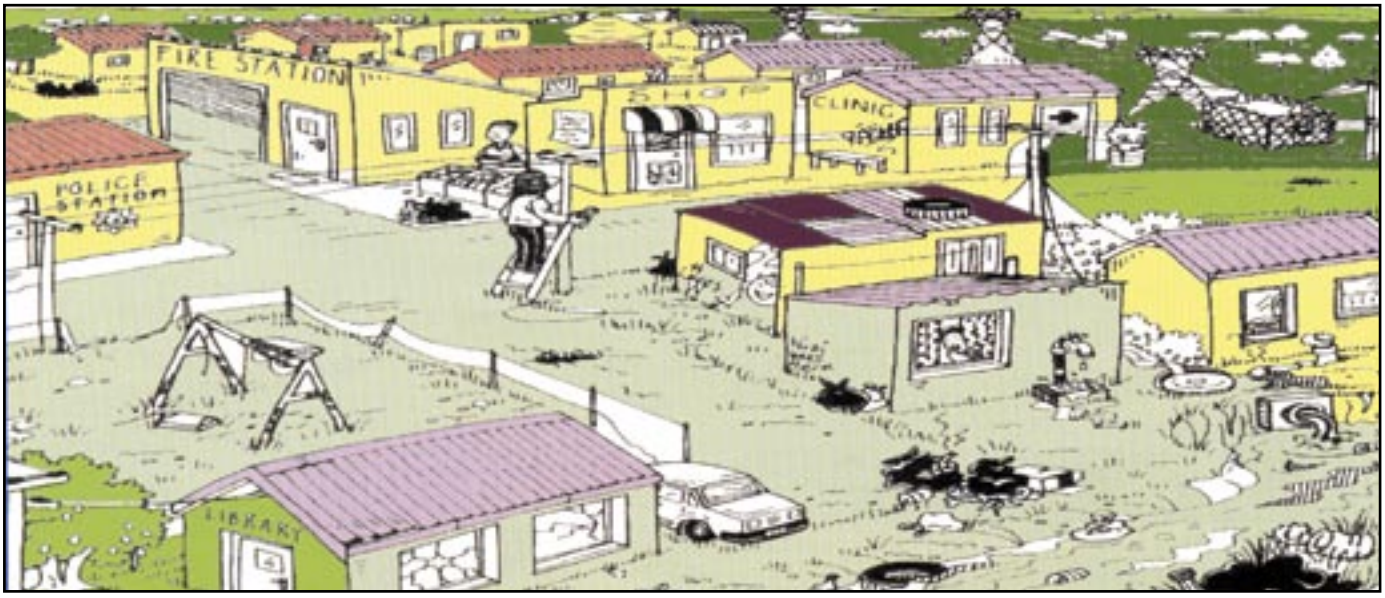
1.

(a) Electricity pylons with links to houses: Resource
(b) Clinic: Service / resource
(c) Police station: Service
(d) Someone using telephone: Resource
(e) Fire brigade: Service
(f) Library: Service / resource
(g) Piped water or toilet showing pipes taking sewage away: Service
(h) Municipal rubbish truck: Service
(i) Children's playground: Service / resource

1. Answers will vary/depend on the type of resources learners communities have

ACTIVITY 5B

Show learners picture B



Ask learners to do the following exercise in pairs, but each learner should write the answers in his / her own book.

- List ways in which people in this community are wasting resources.
- List ways in which people in this community are acting irresponsibly by not using services properly.
- What will have to be done to restore the damage done to resources and services in this community?

Adapted from: Oxford Successful Economic and Management Sciences: Clitheroe, F. Pgs 8 – 9.

ASSESSMENT

Learners would have studied and understood the use of resources from the picture if they have responded in more or less the following way:

1. The people are wasting water because the pipes are leaking. They are wasting electricity by stealing the copper wires from the cables. They are behaving irresponsibly by drawing graffiti on the walls of buildings.
2. The people are not using the rubbish removal service properly. They are not using the grounds properly as they have broken some of the equipment there. They are not using the library service properly as they have broken some of the library windows. They have broken the door of the fire station so the fireman will not be able to get the fire engine out
3. The community will have to spend money to fix the pipes, clear away litter, mend the equipment in the playground, wash off the graffiti, buy more copper wires for electricity cables, and put new glass in the library windows and mend the fire station door.

ACTIVITY 5C: HOW TO FIX A LEAKING TAP.

In this activity learners are taught the skills of fixing a leaking tap in order to save water. In the activity learners demonstrate how to fix a leaking tap

You will need:

- One tap
- One shifting spanner/water pump plier.

Did you know that if you have a tap that drips water, you could waste as much as 60 litres of water a day?

- What do you do in your homes when you see a leaking tap?

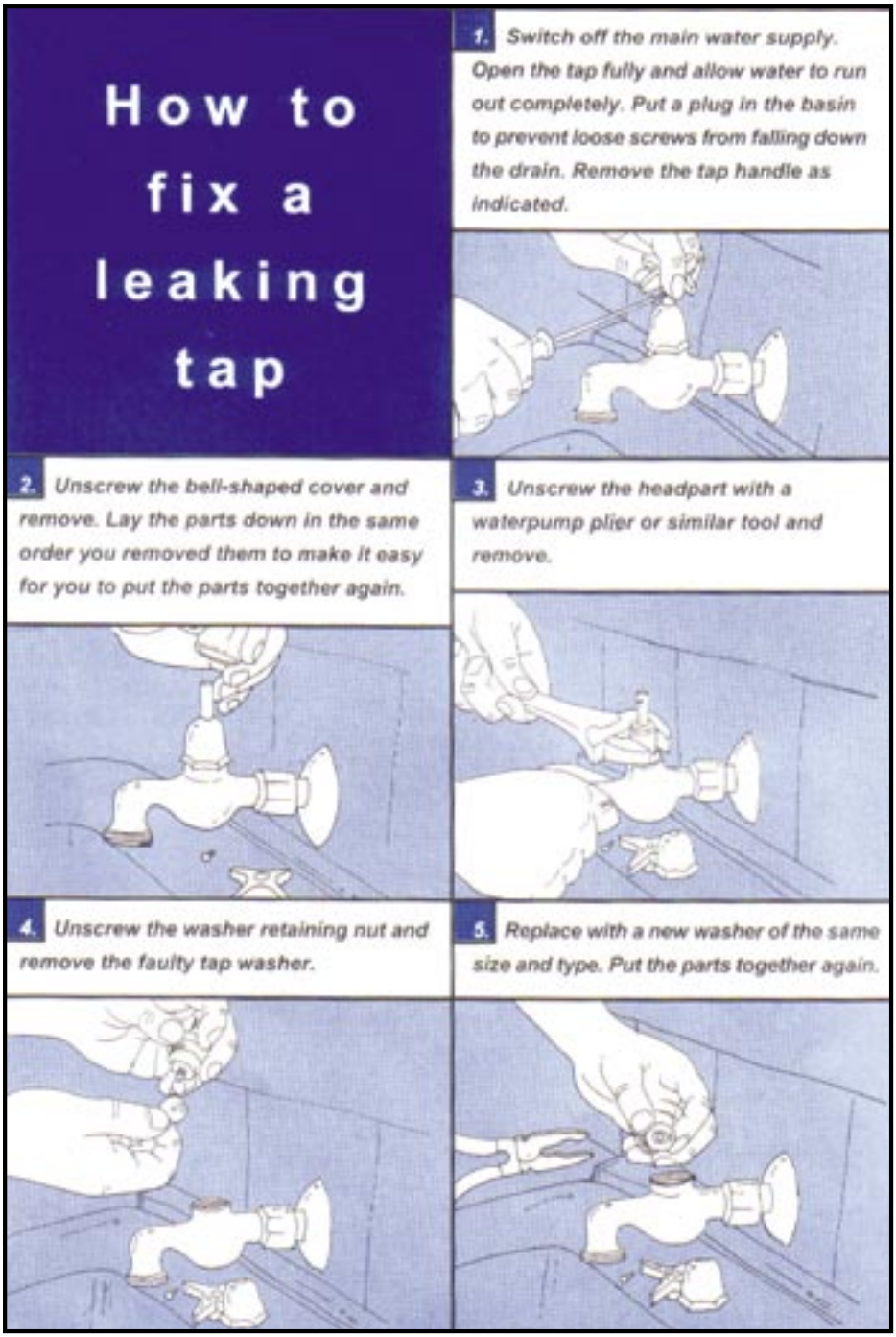
RED ALERT: WATER SAVING TIPS

We are responsible for leaks and water losses in our own home. Here are the three R's of saving water, the environment and money.

- Reduce daily usage of water.
- Re-use water whenever possible.
- Repair leaks.

- Assist learners to demonstrate how to fix a leaking tap.
- Let them follow the step-by-step guide in the picture (see next page).s

- Each group will be asked to dismantle the tap and try out the method of fixing a leaking tap.



ASSESSMENT

Assess the skill of following the instructions, demonstration, fixing the tap.

GLOSSARY OF TERMS

Washer: A thin, flat ring of metal or rubber, which is placed over a bolt before the nut is screwed on.

WATER QUALITY

6. DO NOT POLLUTE WATER

MAIN LEARNING AREA
LO: LO1 HEALTH PROMOTION
The learner will be able to make informed decisions regarding personal, community and environmental health.
AS2: Explores and reports on links between a healthy environment and personal health.

INTEGRATION WITH OTHER LEARNING AREAS
HL: LO3 READING AND VIEWING
The learner will be able to read and view for information and enjoyment, and respond critically to the aesthetic, cultural and emotional values in texts.
AS1: Reads independently using a variety of reading and comprehension strategies appropriate for different purposes.

ACTIVITY:
In this activity learners will be able to:

- Identify the causes of water pollution.
- Discuss how different events in the environment cause pollution of water.

BACKGROUND INFORMATION

WATER POLLUTION
Water pollution happens when the waste we produce as part of our everyday lives gets into water. This can make the water:

- Less suitable for the purposes we usually use it for.
- Harmful or potentially harmful to our welfare, health or safety.
- Harmful or potentially harmful to the animal and plant life that depends on it.

Water pollution in densely populated areas can be caused by many things. In order for communities to solve water pollution problems in their settlements, we need to find out what is causing these problems. The causes of these problems may be:

- Social (people's behaviour): **Social problems** are the ones we get because of our behaviour. Water and toilet facilities may be misused because of lack of awareness and education. Many people don't know that misusing facilities can cause health problems and affect our long-term survival, and others believe it's the government's job to keep our surroundings clean.
- Physical (things we can see): **Physical problems,** are the things we can normally see such as when there are no bins or toilets, or when they don't work properly, or when the facilities used to take waste away from our communities are broken. These facilities could be storm water drains, sewerage pipes, or rubbish collection trucks.
- Institutional (what the local authority is doing): **Institutional problems** are the problems caused by the local authority. Local authorities are responsible for providing communities with water and sanitation services. But often they are not able to give us services, or to maintain them properly. So if the local authority hasn't got enough money to take rubbish away as often as it should, or to give us enough black plastic bags to put rubbish in, or when it hasn't got staff who can put in services, or it doesn't know what services we need, there are institutional problems.

Most pollution is caused by all three of these problems together.
Keeping our natural resources clean and pollution free is a huge challenge to all of us. Polluted water can make us sick and kill animals and plants.

ACTIVITY 6A: WATER POLLUTION

A. The following picture shows different events that lead to water pollution. Ask learners to look at the picture and discuss how different events in the environment cause pollution of water. This picture should be studied in conjunction with the information supplied above.

ASSESSMENT

B. To assess learners' broad understanding of the causes of water pollution, ask them to read the background information and answer the following questions.

1. Name three causes of water pollution in densely populated areas.
2. Name two other problems that are linked to physical problems.
3. What kind of water pollution related problems do we come across because of our behaviour?
4. Who is causing this problem?
5. How can the problem be solved?

Ask learners to read the following sentences in relation to water pollution and place a tick (√) if the statement is true or (x) if the statement is not true.

STATEMENT	TRUE	FALSE
1. Institutional problems are caused when the municipality does not maintain facilities.		
2. Local authorities provide us with water and sanitation services.		
3. Facilities used to take away waste are storm water drains, sewerage pipes etc.		
4. Physical problems are things that we cannot see.		
5. It is the government's job to keep our surroundings clean.		

7. WATER FILTRATION

MAIN LEARNING AREA
NS: LO1 SCIENTIFIC INVESTIGATION
The learner will be able to act confidently on curiosity about natural phenomena, and to investigate relationships and solve problems in scientific, technological and environmental contexts.
AS 1: Plans investigation: Contributes ideas of familiar situations, needs or materials, and identifies interesting aspects, which could lead to investigations
AS2: Conducts investigation and collects data: Explores the possibilities in available materials, finding out how they can be used.

INTEGRATION WITH OTHER LEARNING AREAS
TECH: LO1 TECHNOLOGICAL PROCESSES AND SKILLS
The learner will be able to apply technological processes and skills ethically and responsibly using appropriate information and communication technology.
AS1: Investigates: Finds out about existing products relevant to a problem, need or opportunity and identifies the main design aspects e.g. what is it, what it looks like….that makes them suitable as a solution.

PREPARATION FOR THIS UNIT
Ensure that the following are assembled beforehand. You may request learners to bring some of these materials from home.

- Water
- A large clean container
- Toilet paper
- Cotton wool
- Sand
- Stone
- 2 litre cool drink plastic bottle.

ACTIVITY:
Learners will be able to:

- Purify water where clean water is not accessible and make it safe to drink.
- Plan and conduct a water purification experiment.

GUIDELINES FOR THE LESSON.
In this lesson learners will understand that one can purify water by boiling or disinfecting drinking water, if it does not come from a safe water supply, for example a river or a pond. Learners are exposed to conducting an experiment of filtering water using a cloth.

ACTIVITY 7A: PURIFY WATER BEFORE YOU DRINK IT

In this activity learners will:

- Identify a problem
- Work out the solution to assist the family to purify water-filtering device.

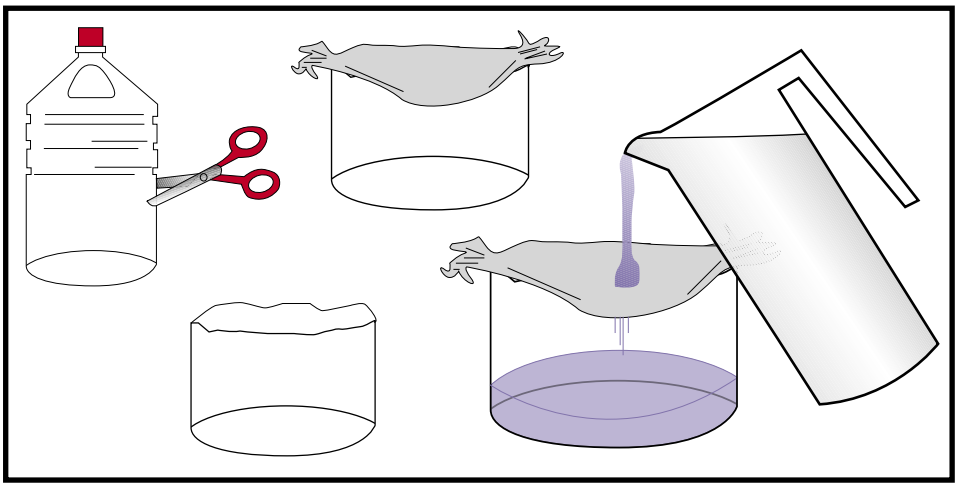
Learners are made aware of the difficulties some people experience in dry areas and how their lives can be changed if technology is used to supply safe water.

Problem: The Wasser family lives close to a river and uses the water for drinking and other household purposes. Sometimes the water is very muddy and polluted. How can we help them to get clean water for drinking?
Learners are given the following passage. Ask them to read it.

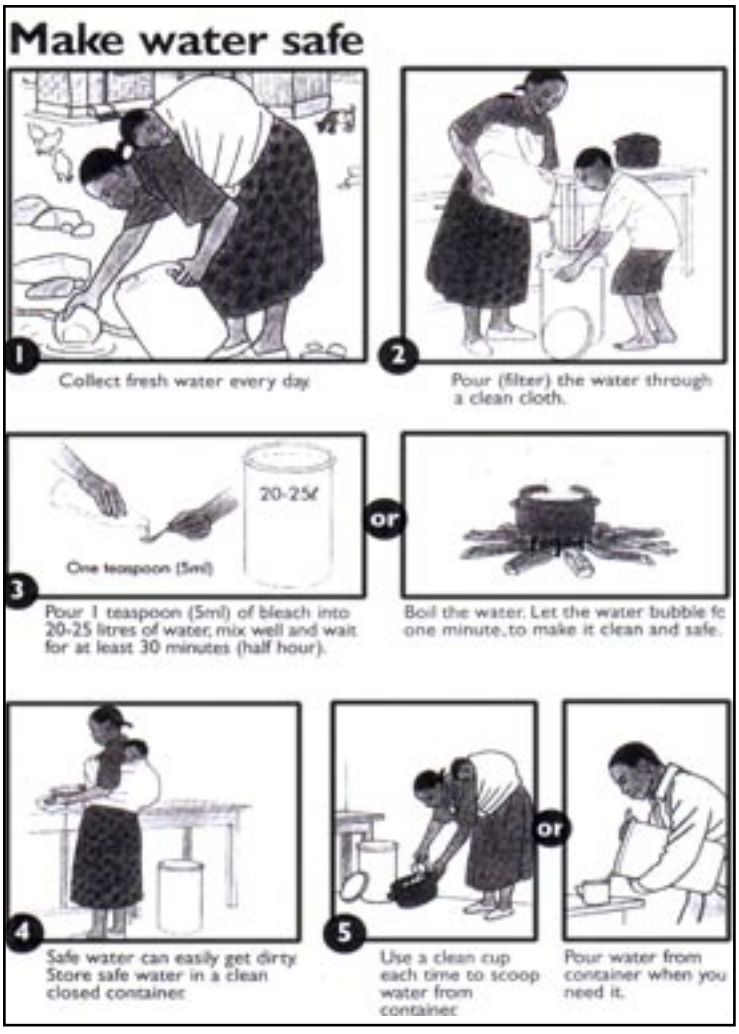
- Ask the learners to identify the problem the Wasser family is facing.
- They must work out a solution to help the Wasser family. They need to brainstorm with their partners on what method are they going to use to solve the problem. Refer them to the following drawing showing the device that is used to purify water.

- Give learners the following apparatus:

A large clean container, toilet paper, cotton wool, sand, stone and a 2 litre cool drink plastic bottle.



1. Let them experiment with the items and choose those that you are going to use to construct a water filter.



2. Instruct them to make a filter device by following the steps in relation to the above picture.

MAKING A WATER-FILTERING DEVICE

- Make dirty water.
- Cut the 2 litre plastic bottle into half and use the base of the bottle.
- Take the cloth and fold it in a way that it makes a container.
- You may use the newspaper for this.
- Hold the cloth on top of the water bottle.
- Pour your dirty water onto the cloth.
- Observe what happens and record your results.

  ……
  ……

- Is the water you have just filtered now safe to drink?

  ……

- If not, explain purification methods that could be used to make water safe to drink.

  ……
  ……

- Cut the 2 litre bottle

B. Ask learners to write a letter to the Wasser family advising them on what they should do to purify the water. Orientate learners to the following picture and ask them to use it in suggesting the solution to the Wasser family.

GLOSSARY OF TERMS

Pollute: To make something dirty and dangerous to use or live in.
Filtration: A process of passing a substance through a device which is designed to remove certain particles contained in it.
Purification: To make a substance pure by removing any harmful, dirty or inferior substances from it.

ASSESSMENT

Design an assessment tool to assess:

- The ability of the learners to design the relevant water-filtering device.
- Identify the problem faced by the Wasser family
- The ability of the learners to suggest the best possible solution to the problem.
    - The way learners have drafted the letter to the Wasser family advising them on the solution to their problem.

SANITATION, HEALTH AND HYGIENE

8. HEALTHY LIVING – STAY AWAY FROM GERMS

MAIN LEARNING AREA
LO: LO1 HEALTH PROMOTION
The learner will be able to make informed decisions regarding personal, community and environmental health.
AS2: Explores and reports on links between a healthy environment and personal health.
SS (GEO) LO2: GEOGRAPHICAL KNOWLEDGE AND UNDERSTANDING
The learner will be able to demonstrate geographical and environmental knowledge and understanding.
AS3: Describes how basic human needs were met in the past and at present (people and the environment).

INTEGRATION WITH OTHER LEARNING AREAS
TECH LO3: TECHNOLOGY, SOCIETY AND THE ENVIRONMENT
The learner will be able to demonstrate an understanding of the interelationships between science, technology, society and the environment.
AS1: Describes how local indigenous cultures have used scientific principles or technological products for specific purposes.
NS LO3: SCIENCE, SOCIETY AND THE ENVIRONMENT
The learner will be able to demonstrate an understanding of the interelationships between science and technology, society and the environment.
AS1: Understands science and technology in the context of history and indigenous knowledge: Describes how local indigenous cultures have used scientific principles and technological products for specific purposes.
- Describes how own cultural group has, through history, found safe ways to collect and use water to drink.

HL LO 2 SPEAKING
The learner will be able to communicate confidently and effectively in spoken language in a wide range of situations.
AS1: Communicates experiences, ideas and information to different audiences and for many purposes: discusses and compares own and others' ideas and opinions.
AS2: Uses interaction skills and strategies for working in groups: asks relevant questions.

ACTIVITY
Learners will be able to:
- Conduct research to find out the way people lived in the past and present, thus Increasing their environmental knowledge and understanding about how basic human needs were met in the past
- Compare the lifestyles of people in the past and present.

GUIDELINES FOR THE LESSON
In this lesson learners are engaged in the challenge of tackling tasks independently, by accessing and recording information through interviewing their parents about their personal health and hygiene. Learners will have an understanding and knowledge about how basic human needs were met in the past through interviewing their parents about their personal health and hygiene.

ACTIVITY 8A- HOW HUMAN NEEDS WERE MET IN THE PAST (PROJECT)

What should learners do?

In this activity learners must:
- Interview a parent or grandparent about personal health and hygiene with a view to finding out what the problems were in the past and how they were solved.
- Do the same interview with your peer/ friend.

Learners should use the following questions as a guide to conducting their interviews:

(1) Where did / do you get your water in your times?
(2) How did you dispose of rubbish/litter?
(3) What kind of toilets did/ do you have? (If there were any)
(4) What health problems arose as a result of these toilets, water source, and rubbish disposal methods?

Ask learners to use the table below when they record the information from the interview.

Service	**Village / Town**		**Problems**	
	Past	**Present**	**Past**	**Present**
Obtaining Water				
Kind of Toilets used				
The way the Rubbish is removed				

- Ask learners to give a report back to the whole class on your findings focusing on the link between the type of facilities used nowadays and in the olden days and their effect on personal health.

ASSESSMENT

In assessing the learners' ability to execute this task, the following skills are important:

- collecting relevant information
- description of the situation
- analysis of the gathered information
- drawing inferences
- report writing

9. HEALTHY ENVIRONMENT

MAIN LEARNING AREA
LO: LO1 HEALTH PROMOTION
The learner will be able to make informed decisions regarding personal, community and environmental health.
AS2 Explores and reports on links between a healthy environment and personal health.
SS (GEO) LO2 GEOGRAPHICAL KNOWLEDGE AND UNDERSTANDING
The learner will be able to demonstrate geographical and environmental knowledge and understanding.
AS2: Describes the importance of access to resources and services for people living in settlement (people and resources)

INTEGRATION WITH OTHER LEARNING AREAS

HL LO2 SPEAKING
The learner will be able to communicate confidently and effectively in spoken language in a wide range of situations.
AS1: Communicates experiences, ideas and information to different audiences and purposes.

ACTIVITY:
Learners will be able to:
- Identify unhealthy conditions.
- Explain the effects of unhealthy conditions on people.
- Suggest the best way of preventing these unhealthy situations from affecting human life.

GUIDELINE FOR THE LESSON
Through this lesson, learners will know how lack of access to water and **proper sanitation** facilities will lead to the spread of diseases. Learners are encouraged to adopt **safer** hygiene **practices.**

ACTIVITY 9A

A healthy environment means a healthy life. Is the environment in which you live healthy? Is the air clean? Is the water clean? If the environment we live in is not healthy, we can get sick; we need a healthy environment to stay healthy. In communities without toilets, without safe drinking water, and without safe refuse disposal, it is very difficult for families to prevent the spread of germs.

Read the following fact file to the learners.

Every house should have a toilet

Germs can easily be spread when people do not have proper toilets. An important way to keep yourself and your family healthy is to have a safe toilet. There are many different types of toilets and the one you use depends on where you live and what you can afford.
A cheap safe toilet is a VIP toilet. VIP stands for Ventilated Improved Pit. A VIP stops flies and smells. Contact your nearest Department of Water Affairs and Forestry office to see whether someone can help you build one.
Build your toilet downhill and at least 50 metres away from any borehole to prevent the waste from the toilet from polluting the groundwater.
Small children are often afraid to use a pit toilet. Keep your toilet clean and attractive so that all people in your family are not afraid to use it. Always wash your hands
Germs are also spread to/from our hands. Stop disease spreading. Make sure you wash your hands after going to the toilet.
Collecting and storing water
Always make sure your water container is clean before you collect water.
Store the water in a covered bucket. Don't put your hands in the water. Use a dipper (like a jug or a cup).
Flies
Flies can also spread germs. You must always cover food and water.
If possible, do not let anyone defecate outside the toilet as this attracts flies.

Did you know?
More than half of all illness and death among young children is caused by germs, which get into the child's mouth via food and water.

- Ask learners to look at the following pictures and in each picture do the following:

  (a) Identify unhealthy conditions.
  (b) Explain the effects that these unhealthy conditions have on the people in the picture.
  (c) Explain what they could change to make sure that the people will not be exposed to the diseases.

THEY MUST USE THE FOLLOWING WORKSHEET

NAME---------- GRADE ----------

Unhealthy Condition	Effect on health	Solution
I		
2.		
3.		

ACTIVITY 9B

- Ask learners to answer the following class work in their workbooks:

State whether the following statements are true or false.

1. The faeces of children and babies are harmful and cause diseases just like everyone else's.
2. You can catch diarrhoea from a dirty toilet seat.
3. Flies are annoying pests, but they are harmless.
4. You should always wash your hands with water and soap or wash after using the toilet.
5. Boys need hygienic toilets more than girls do.
6. It is important to keep toilets clean because they just get dirty again.
7. I don't need to wash my hands after urinating because I don't wee on my hands.
8. People in urban areas have a right to better sanitation.
9. I should always wash my hands before I eat.
10. It is better to save water by not flushing the toilet.

GLOSSARY OF TERMS:

Germs:	It is a very small organism that causes disease.
Borehole:	A deep round hole made by a special tool or machine, especially, that is made through the ground to access water.
Defecating:	Getting feaces or stools out of your body.
Refuse disposal:	Getting rid or throwing away rubbish and all the things that are no longer wanted.
Diarrhoea:	It is a sickness, which makes one's body, loses a lot of liquid in the form of liquid feaces and vomiting.
Sanitation:	A process of keeping places clean and healthy, especially by providing a sewerage system and a clean water supply.
Feaces:	It is a solid waste substance that people or animals get rid of from their bodies by passing it through the anus.
Urban area:	Area that is considered a town or city.

ASSESSMENT

- From the answers given to both activities, assess the learner's ability to link a healthy environment to personal health.

10. CHILDREN'S HEALTH RIGHTS

MAIN LEARNING AREA
LO1: HEALTH PROMOTION
The learner will be able to make informed decisions regarding personal, community and environmental health.
AS3: Explains the children's rights and responsibilities, and suggest ways in which to apply these in a familiar situation.

INTEGRATION WITH OTHER LEARNING AREAS
AL: SPEAKING LO2
The learner will be able to communicate confidently and effectively in spoken language in a wide range of situations.
AS1: Interacts in additional language: Gives short answers to questions, takes part in a short conversation on a familiar topic.

ACTIVITY:
Learners will be able to:
- Identify the children's rights that are not being protected.

Guideline for the lesson
In this lesson learners are exposed in acquiring knowledge about their health rights and will know when they are deprived of those rights. Learners will make decisions for their health and health related issues. Learners are encouraged to work with others.

ACTIVITY 10A: RIGHTS AND RESPONSIBILITIES

- Ask learners what do they understand about a right and a responsibility?
- Ask them to mention the rights that you know of. Write all their responses on the chalkboard.
- Show the learners the following children's health rights and ask them to read the rights.

All children have a right to a healthy diet.

2. All children have a right to clean water.
3. All children have a right to sanitation.
4. All children have a right to a clean living environment.
5. All children have a right to protection from domestic violence.
6. All children have a right to health care.

But if children have these rights, they must also be responsible themselves. For example:

Children must help to keep the toilet area at home and at school clean.

- Children must not waste food and must also help to prepare the food.
- Children must help to keep the home clean and must not litter surroundings.
- Children must not waste water and must not pollute water.
- Children must look after their health as best they can.
- Children must help their parents whenever they can.

Adapted from: Oxford Successful: Life Orientation, Grade 4 Learners book; Clitheroe, F et al, pg I6 - I7.

ACTIVITY 10C

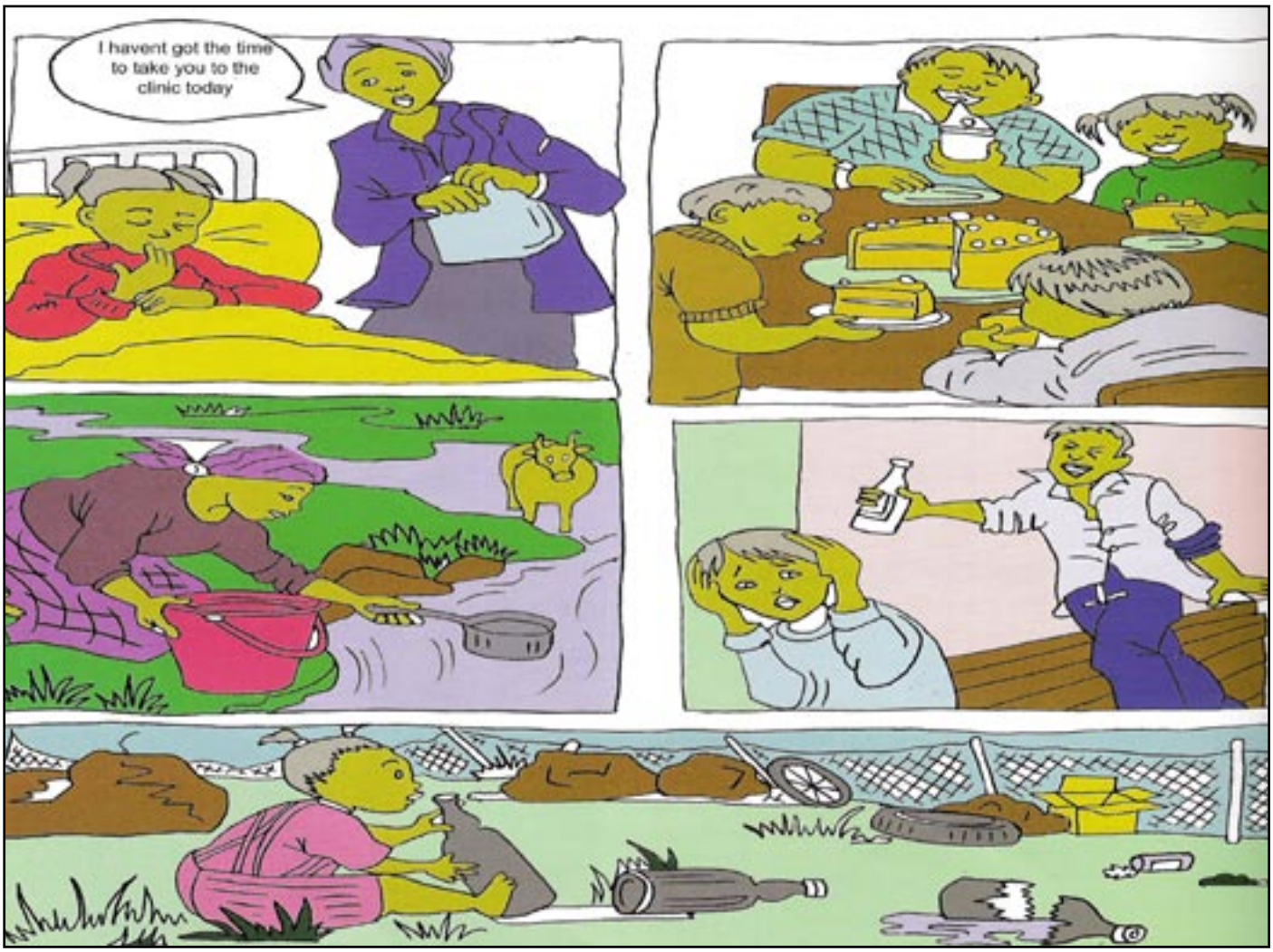
- Ask learners to match up the health rights 1- 6 with the health responsibility A – F in your workbooks.
- Ask them to exchange their books and mark the exercise.

RIGHT	RESPONSIBILITY
1. All children have a right to a healthy diet.	A. Children must not waste food and must also help to prepare the food.
2. All children have a right to clean water.	B. Children must not waste water and must not pollute water.
3. All children have a right to sanitation.	C. Children must help to keep the toilet area at home and at school clean.
4. All children have a right to a clean living environment.	D. Children must help to keep the home clean and must not litter surroundings.
5. All children have a right to protection from domestic violence.	E. Children must help their parents whenever they can.
6. All children have a right to health care.	F. Children must look after their health as best they can.

ACTIVITY 10B: RESPECT AND PROTECT CHILDREN'S RIGHTS

In this activity learners will identify the children's rights that are being violated.

1. Ask learners to look at the pictures below and answer the questions in pairs.



2.Ask learners to:

a) Identify the children's rights that are violated or not protected.
b) State how those rights are being violated.
c) Brainstorm about what could be changed in order to make sure that the rights are being protected.

GLOSSARY OF TERMS

Rights: It is something that you are morally or legally entitled to do or to have.

Responsibility: Are things that you feel you ought to do because it is morally right to do them.

In your assessment look for some of the following responses:

1.Rights are not being protected:

- Sick child have a right to a health care.
- Families stuffing themselves with cake- Children have a right to a healthy diet.
- Mother collecting polluted water- Children have a right to clean water.
- Child being physically abused – Children have a right to protection against domestic violence.
- Child in unsafe environment – Children has a right to a clean living environment.

2. Learners could draw or cut pictures showing their rights being protected:

- Parent taking a child to clinic.
- Parent providing balanced meals.
- Mother collecting piped water rather than river water. If river water is the only water available, the water should be made safe to drink.
- Child being treated with respect. Adults should be kind to children.
- Child playing in a clean, safe environment.

11. RESOURCES AND SERVICES

MAIN LEARNING AREA
SS (G): LO 3 EXPLORING ISSUES
The learner will be able to make informed decisions about social and environmental issues and problems.
AS 2: Identifies the factors that influence why some people have better access to resources compared to others in a particular context [factors affecting the issue].

INTEGRATION WITH OTHER LEARNING ACTIVITIES
AL: LO3 READING AND VIEWING
The learner will be able to read and view for information and enjoyment, and respond critically to the aesthetic, cultural and emotional values in texts.
AS 1: Understanding in a simple way some elements of stories.
AL: LO5 THINKING AND REASONING
The learner will be able to use language to think and reason, as well as to access, process and use information for learning.
AS 2: Uses language for thinking.
Expresses an opinion and gives a reason for it.

ACTIVITY:
Learners will be able to:
- Identify services and resources that are available in their communities.
- Identify factors that influence why some people have better access to resources compared to others.

BACKGROUND INFORMATION
Access to basic resources and services like health care and running water are a human right.

Guidelines for the lesson
In this lesson, learners will be able to identify services and resources that are available in their communities. They will have an understanding that access to basic resources and services like health care and running water is a human right. Learners will have an opportunity of working effectively with others as a team.
Learners from different background can learn more about such services in different settlement and areas as they talk and compare with their peers.

ACTIVITY 11A: ACCESSING BETTER RESOURCES

Read the following background information to the learners.

Everyone should have access to resources such as a place to live and a safe water supply. In settlements such as towns and cities, where a lot of people live, there are many services that people should have. For example, there should be a service that removes rubbish, and a sewerage system.
People who live in a settlement must pay their local municipality for these services.

(a) Also read and explain the following case study to the learners.
(b) Ask them to check the meaning of resource and service in the dictionary.
(c) Make use of the questions that follow to assist learners to understand and comprehend case studies.

VILLAGE LIFE	URBAN LIFE
Sipho and Lebo live in a village in the Free State. They live with their grandmother in a house on a small plot of land. There is a tap about 100 metres from their house that all people in the village use for water. Sometimes the tap does not work, so they help their grandmother to get water from the stream where the cattle drink. They have a 'VIP' toilet at the bottom of the plot. This toilet has a seat over a deep hole in the ground. They wish they had a flush toilet like the ones they have seen in town. Their grandmother cooks their food in a pot over their fire.	Lifa and Busi live in a small town in Limpompo. Lifa and Busi and their parents moved into a municipal house last year. The house has electricity (which the family never had before). They have a small electric stove for cooking. With the new electric lights, Lifa and Busi can read and do homework at night, and watch some television. The electricity costs R50 per month. The house has taps inside the house, but the flush toilet is outside. The family pays the municipality about R15 per month for water. Lifa and Busi's mother is glad that she does not have to walk to the community tap as she did in the past. She is also pleased that the municipality now collects the rubbish once a week. It costs R30 per month for this service, but the streets are cleaner because rubbish is collected. The town has a police station and a community hall next to the clinic.

- Ask the learners to compare the environment where Lebo & Sipho live against Lifa & Busi's environment.

Question	Lebo& Sipho	Lifa & Busi
(a) Is this village's water supply reliable? Explain your answer.		
(b) Where do they get their water when the tap does not work?		
(c) How can the family make the water from the stream safe for drinking?		
(d) Which services does the family have to pay for every month?		
(e) What services does the family have now that they did not have in the past?		

In a plenary lead an open discussion about the life situations depicted in the case studies. Create an environment in which learners can talk openly without embarrassment focusing on getting responses around.

- Learners identifying with or sharing similar experiences with the two families, e.g. have you ever been in the same situation as Lifa and Busi or Sipho and Lebo?
- Learners stating the advantages and disadvantages of each situation.

ACTIVITY 11B

The picture below shows different services needed in a settlement.

I. Learners may work in partners for this activity. Together with your partner, look at the pictures I – 8, discuss what service is being provided in each one and write down the number and the service being provided.

Learners may use the following worksheet to do this activity.

NUMBER	SERVICE PROVIDED
I.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	

ii. Answer the following questions about each of the pictures:

(a) Does your village, town or city offer these services?
(b) Does your family make use of the services? If not, why?
(c) If you do not have these services in your area, can you think of reasons why you do not have these services?
(d) Do you think it is fair for you not to have these services?
(e) For those services that you do not have, where do you have to go to get them?

Adapted from: Monteith, M et al.: Oxford Successful: Social Science Grade 4 Learner's Book, pgs I8 – 20.

ASSESSMENT

Observe from the learner's answers whether they can:
- Identify a settlement type that has less access to resources and services.
- Think of reasons why that settlement type has less access to resources.
- Suggest ways to eliminate or solve those constraining factors.

GLOSSARY OF TERMS

Resources: They are things that a country has and can be used by its people or can be used to increase the country's wealth, such as coal, oil, land etc. Sometimes these can exist naturally, e.g. water, land, minerals etc.

Services: A service is something that the public needs, such as transport, communications services, hospitals, energy supplies etc. which is provided in a planned or organized way by the government or an official body.

12. COMMUNITY EFFORTS IN FIGHTING POVERTY

MAIN LEARNING AREA
EMS: LO2 SUSTAINABLE GROWTH AND DEVELOPMENT
The learner will be able to demonstrate an understanding of sustainable growth, reconstruction and development, and to reflect critically on related processes.
AS 3: Identifies the local community's efforts in fighting poverty.

INTEGRATION WITH OTHER LEARNING AREAS
SS(G): LO3 EXPLORING ISSUES
The learner will be able to make informed decisions about social and environmental issues and problems.
AS 3: Suggest ways to improve access to resources in a particular context [make choices].

ACTIVITY:
Learners will be able to:
- Take an active role in community projects to fight poverty and help people to enjoy better lives.

Guidelines for this lesson
In this chapter learners are encouraged to be involved in community projects, which help to alleviate poverty and learners use water to improve the quality of life. This teaches learners positive moral values of sharing resources, helping the needy people and adapting positive character trait of actively doing something to improve the quality of life,

ACTIVITY 12A - LET'S WAKE UP AND FIGHT POVERTY

Read the following story to the learners and let them answer the following questions:

Mr. Collie a grade 4 teacher attended a community garden workshop. When he came back from the workshop he informed his class about the Sofasonke Garden Project in their community in Mpumalanga. The project works to develop disadvantaged communities in the local area. The vegetable gardens provide food for families in the community. The fresh vegetables keep the children healthy. The vegetable gardens provide an income for the women who sell the vegetables to hawkers, schools and the public. The Sofasonke Garden Project is looking for volunteers to help in their garden project and he had taken the initiative of informing the project leader that his class will be part of the garden project. Learners wanted to start immediately.
The learners divided themselves into groups and each group prepared a bit of the soil for their own vegetables. They planted the following seedlings: cabbage, onion, beetroot and spinach in rows, and took turns to water the seedlings every day, even in the holidays.
The learners were very proud to be involved in the community project and wanted to share what they had learned with their families. They invited their parents to see the garden.

QUESTIONS

1. Why was it important for the learners to be involved in the community garden project?
2. What is the name of the project?
3. What skills did learners learn in the project?
4. Name two ways in which the project helped people in the different communities?
5. Which seeds were planted?
6. In what ways did the project in Limpompo help people to fight poverty?

Reponses to expect from the learners
1. Community garden project helps to fight poverty in the communities.
2. Sofasonke Garden Project.
3. Running a vegetable garden.
4. The vegetables keep children healthy and provide an income for women who grow them.
5. Cabbage, onion, beetroot, spinach.
6. The vegetable garden provide food for families in the community, it provides an income for the women who sell the vegetables to hawkers, schools and the public.

ACTIVITY 12B

Engage learners into a project; ask them to research in their community the following:

- What problems of poverty are there in your community? List them.
- What is being done about those problems? e.g. garden, sewing etc.
- Choose one project and draw a plan on how the project will be carried out.
- Mention all members that will participate in the project.

ASSESSMENT

Assess learners' ability to:

- Conduct a research
- Collect correct information.
- Identifying the project potential.
- Planning your project.

WATER SAFETY

13. WATER SAFETY RULES

MAIN LEARNING AREAS
LO LO4: PHYSICAL DEVELOPMENT AND MOVEMENT
The learner will be able to demonstrate an understanding of, and participate in, activities that promote movement and physical development.
AS5: Identifies dangers and responsible measures in and around water.

INTEGRATION WITH OTHER LEARNING AREAS
AL LO5: THINKING AND REASONING
The learner will be able to use language to think and reason, as well as to access, process and use information for learning.
AS2: Transfers information from one mode to another (e.g. chart to text):
- Uses information from a chart, graph or diagram to write a short text.

HL LO4: WRITING
The learner will be able to write different kinds of factual and imaginative text for a wide range of purposes.
AS1: Writes different kinds of texts for different purposes and audiences:
- Writes information texts expressing ideas clearly for different audiences (e.g. letters, descriptive paragraphs, limericks).

ACTIVITY:
Learners will be able to:
- Identify dangers and responsible safety measures in and around water.

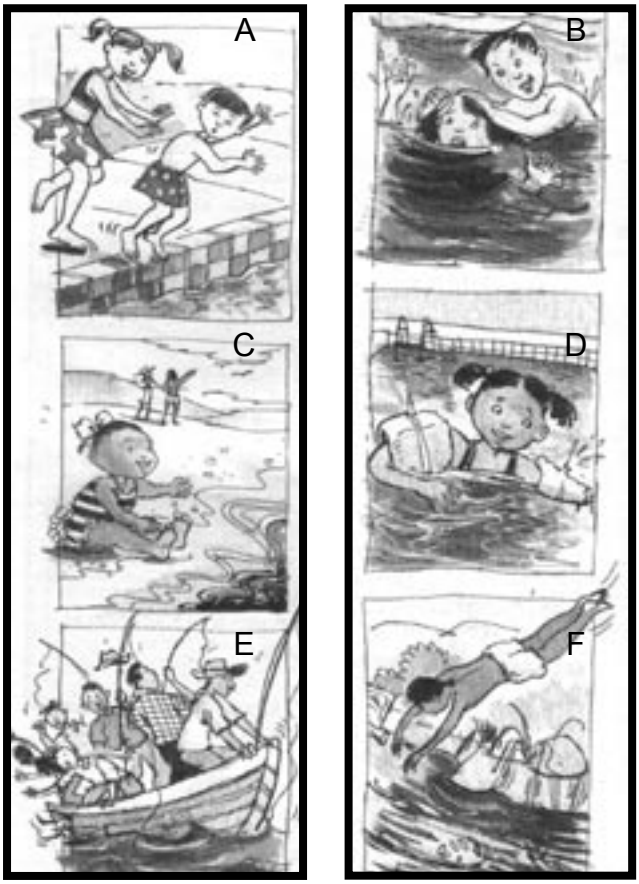
BACKGROUD INFORMATION

What are the water safety rules?
It is a good idea to learn to swim as soon as you can, especially if you live near a swimming pool, river or dam. But even good swimmers can drown or have accidents. To prevent accidents, always obey these important safety rules:

ACTIVITY 13A: SAFETY RULES

DO NOT

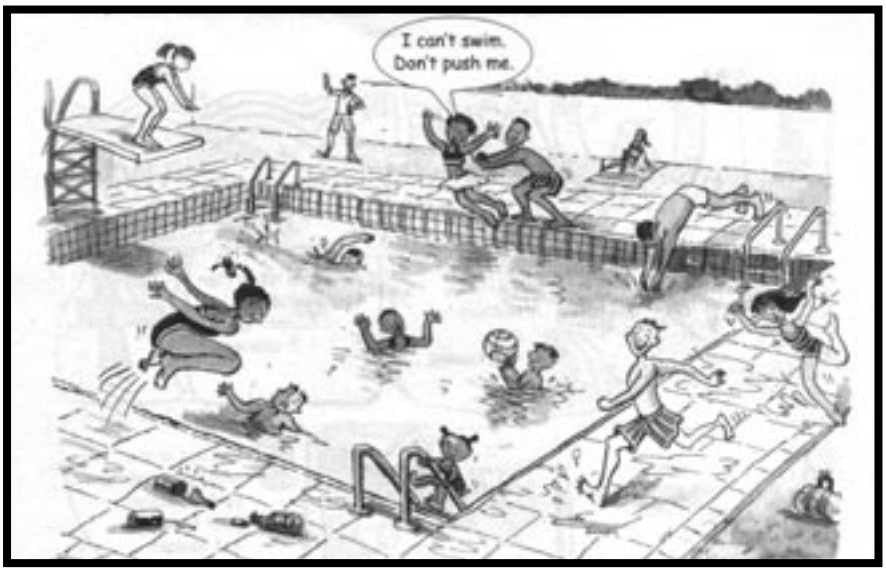
- ***Swim alone.***
- ***Swim where nobody can see you.***
- ***Swim near surfers or people in boats.***
- ***Leave small children alone in or near water.***
- ***Dive or jump in where people are swimming.***
- ***Play wildly in or near water.***
- ***Push or scare anyone.***
- ***Use blow up toys or arm bands which are leaking.***
- ***Have too many people in a boat.***
- ***Swim where there could be sharp objects under the water.***
- ***Swim when you are cold.***
- ***Swim after you have eaten – wait for about an hour.***
- ***Swim when you are tired.***
- ***Swim when you are sick.***
- ***Swim in fast flowing rivers.***
- ***Swim during a thunderstorm.***
- ***Push a friend into or under water***
- ***Dive into murky water.***



- Look at the pictures above.
  (a) Match up each picture with one of the water safety rules.
  (b) Write a short paragraph about water safety.

ACTIVITY 13B: DANGERS AT THE POOL

How to behave around swimming pools?
Accidents can happen very easily in and around swimming pools. Look at the picture of a swimming pool, which shows some dangerous situations.



1. In groups look at the picture above, identify and write down six dangers that are shown in the picture.
   (a) Write down six safety rules that will prevent the dangers you identified in Question1.

ASSESSMENT

Assess whether the learners were able to:

- Identify the dangers in safety measures around water
- Write a short paragraph about water safety.
- Identify dangers and responsible safety measures in and around water.

Answers to Activity 13A and 13B

Activity 13A

A- Do not push or scare anyone.
B- Do not play wiildly in or near water.
C- Do not leave small children in or near water.
D- Do not use blow-up toys or arm bands which are leaking.
E- Do not have too many people in a boat.
F- Do not dive or jump into shallow water- always find out how deep the water is first (or swim where there could be sharp objects under the water.

WHAT TO DO:

- Help the groups to decide which of the rules particularly apply to them and where they live. They should then each write a paragraph in their workbook about water safety.

ACTIVITY 13B

- Diving in shallow water – do not dive or jump into shallow water.
- Jumping on someone – do not play wildly in or near water.
- Running or slipping on wet paving – do not play wildly in or near water.
- Pushing someone into the pool – do not push or scare anyone.
- Diving where people are swimming – do not dive where people are swimming.
- A small child getting into the water alone – do not leave small children in or near water.

FORESTRY AND IAP's

14. WHY ARE TREES IMPORTANT?

MAIN LEARNING AREA
NS: LO1 SCIENTIFIC INVESTIGATION
The learner will be able to act confidently on curiosity about natural phenomena, and to investigate relationships and solve problems in scientific, technological and environmental contexts.
AS1: Plans investigations: Contributes ideas of familiar situations, needs or materials, and identifies interesting aspects, which could lead to investigations.

INTEGRATION WITH OTHER LEARNING AREAS
HL: LO 3: READING AND VIEWING
The learner will be able to read and view for information and respond critically to the aesthetic, cultural and emotional values in texts.
AS1: Reads independently using a variety of reading and comprehension strategies appropriate for different purposes.
HL LO4: WRITING
The learner will be able to write different kinds of factual and imaginative texts for a wide range of purposes.
AS1: Writes different kinds of texts for different purposes and audiences.

ACTIVITY:
In this activity you will:
- List the importance of trees after they are chopped down.
- Discuss the value of trees in our lives.

What to do:
- Learners can work with partners for the following activity.
- Ask them to look at the following picture and answer the questions that follow.

ACTIVITY 14A: LET'S DISCOVER MORE ABOUT PLANTS

In this activity we shall:
- Discover more about the trees.
- List the importances of trees.

Did you know?
Some trees seem to be magical homes for spirits and legends. Plants "breathe in" waste air ($C0_2$) we breathe out, and breathe out the oxygen? Many South African plants are used as medicines.

What to do?

Read the following passage and answer the questions that follow.
Where would we be without trees? Trees truly are our friends, generously giving us many things that we take for granted. In our school grounds, parks, gardens and along our streets, trees give us shade from the sun and shelter from wind and rain. Many bear fruit that people and animals can eat. Every day trees and other plants give us clean air to breathe. It is one of the miracles of Mother Earth that plants "breathe in" the waste air we breathe out, and breathe out the oxygen that we breathe in!

Look closely at a tree and you will find a whole community of animals and other plants living in it. Birds nest in the branches, insects and birds feed on the leaves, flowers and fruit and lizards scurry up and down the mossy trunk searching for food.

Trees inspire us with their beauty, their size and their great age; some seem to be magical homes of spirits and legends and others are a friendly jungle gym where we can climb, swing and build a tree house. Even after they are chopped down, trees continue to give: the wood to make our school benches and pencils, the paper this book is written on and even some fabrics that we wear are all gifts from the tree. No wonder every year we set aside a special day to celebrate and give thanks to trees!

Learners must answer the following questions:

Questions

1. List all the things a live tree can do?

_____

2. List all the importances of trees after they are chopped down.

_____

_____

_____

_____

3. What is the relationship between trees and humans in breathing?

_____

_____

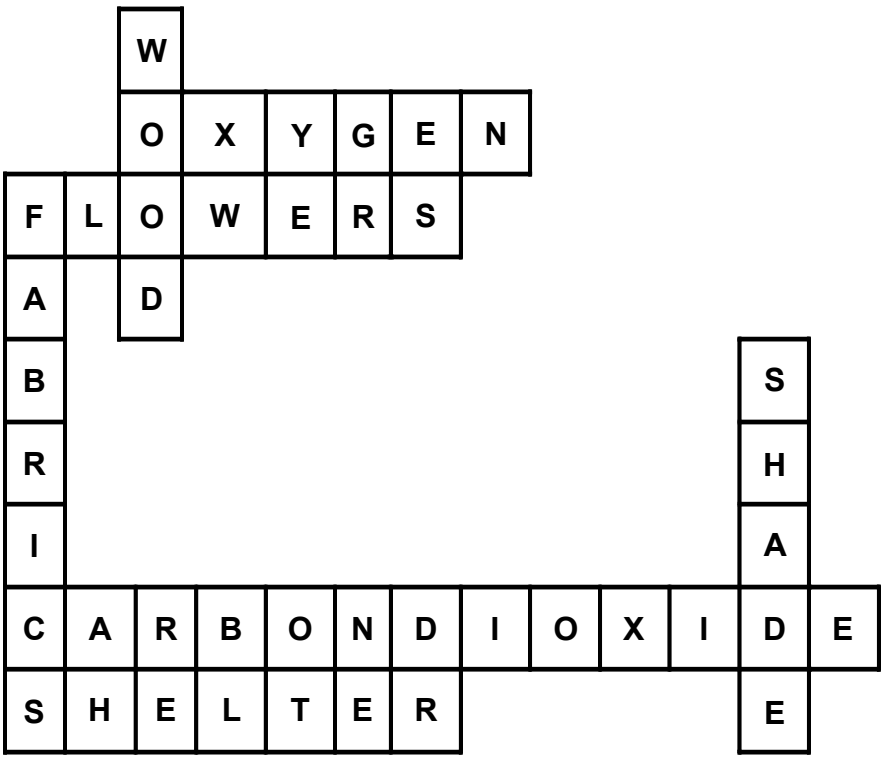
_____

_____

4. State whether the following sentences are True or False.

(a) Trees do not inspire us with their beauty.	
(b) Trees and other plants give us clean air to breathe.	
(c) Some fabrics that we wear are all gifts from the tree.	
(d) A tree cannot bear fruit.	
(e) Every year we set aside a special day to celebrate the trees.	

Try to complete the following word puzzle about the value of trees.



1. Wood
2. Fabrics
3. Shade
4. Flowers
5. Oxygen
6. Carbon Dioxide
7. Shelter

Down

1. _____ make our school desks, benches and tables/

2. _____ we wear all gifts from trees.

3. In our parks, gardens and along streets, trees give us _____.

Across

4. Trees produce _____ which beautify nature.

5. Trees “breathe” in _____ we breathe out and “breathe” in 6._____.

7. Trees also _____ our houses and crops from wind.

INVASIVE ALIEN PLANTS

15. IDENTIFICATION OF INVASIVE ALIEN PLANTS

MAIN LEARNING AREA
NS: LO 2: CONSTRUCTING SCIENCE KNOWLEDGE
The learner will be able to know and be able to interpret and apply scientific, technological and environmental knowledge.
AS1: Recalls meaningful information: At the minimum, uses language to name and describe features and properties of objects, materials and organisms.

INTEGRATION WITH OTHER LEARNING AREAS
HL: LO5 THINKING AND REASONING
The learner will be able to use language to think and reason, as well as to access, process and use information for learning.
AS2: Uses language to investigate and explore:
• Identifies relevant source of information.

ACTIVITY
The learner will be able to:
- Identify alien invasive plants.

ACTIVITY 15A: know the invasive alien plants

Black Wattle

Black Wood

Grey and Matchwood poplar

Unidentified

Unidentified

Castor oil plant

Triffid weed

Black Wattle

Poster Activity

- Ask learners to look at the poster with the invasive alien plants.
- Find out if there are any plants that the learners know on the poster and ask them to share their knowledge with the rest of the class.

(Teacher explains the names of the IAP'S on the poster and talks about the negative impact of invasive alien plants in our environment)

Group Work:

- Ask learners to take a walk around the school grounds and see if they can identify any invasive alien plants that they've seen on the poster.
- Let them bring a few examples of the plants to the classroom.
- Ask them to look at the features or characteristics of the plants and describe it.
- Ask the groups to design Alien invasive plants poster.

ASSESSMENT: Rubric- Poster Design

NAME OF THE GROUP: GRADE: DUE DATE:

4	Has exceeded
3	Satisfied
2	Partially Satisfied
1	Not Satisfied

	Excellent	Satisfactory	Need Attention	Not done at all
The topic is clear				
The purpose of the poster is accomplished				
The picture enhance the purpose				
Design, colour is appropriate and neat				

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DWAF Alien Invasive Plants Posters.

Swimming South Africa