

Where are you?

Aim: To know where you live and to know where that is around LNP and what animals are in the park.

Discuss with the class where you are?

Ask which Park are you near and locate village on the map. *Use map of LNP*

Ask the students to give the name of the Village, TA, District, Region, Country and Continent. Locate LNP and Malawi on map. *Use map of the world*

Show a picture of our world from outer space. *Use map of the Earth*

Ask what is the earth made of; what makes up our environment? *Land, air and water.*

Discuss in groups of 5-6 students about what animals are in LNP, make a list and one person reports back to the class.

Teachers Note - See list of animals.

The teacher lists the animals on the board adding any important mammals that have been missed.

Go through the list and ask each pupil in turn to find a mammal on the mammal posters (leave out birds and reptiles. Use WESM mammal Posters.

Activity for groups of two pupils:

List the animals found on the 'What animal am I?' activity. *Use activity sheet.*

Materials

- Map of LNP
- World Map
- Map of the Earth
- List of Animals
- WESM Mammal Pictures
- Paper and Pens
- 'What animal am I?' Activity Sheet

The Importance of the Park

Aim: To understand what LNP provides and why it's important to protect.

Discuss in groups of 5-6 students about what LNP provides for both people and animals, make a list and one person reports back to the class:

Teachers Note:

Home for different animals (sanctuary);

Jobs - park staff about 100 people, Chinguni Hills lodge about 30 people and Mvuu Lodge staff about 150 people, farmers that supply the lodges with food and the money from tourists buying from local curio seller and crafts people;

Rain and the environment;

Medicine;

Education;

Revenue for the government.

The teacher lists the answers on the board and explains the answers more fully so that all the class understands.

The Importance of the Park

Activity for Outside

1. Medicine Man Game

1. Get the students into a circle and ask for 3 volunteers.
2. Explain the game; everyone is a tree and our three volunteers are a traditional medicine man, a modern doctor looking for a cure for a horrible disease (note 75% of medicines come from plants) and a wood cutter. The aim of the game is the modern doctor finds the cure before all the trees are cut down by the woodcutter.
3. The traditional medicine man knows which tree has the cure and while the modern doctor and woodcutter have their eyes closed the traditional medicine man puts a seed into the hands of one of the trees. Everyone keeps their hands behind their back.
4. The game starts as the woodcutter is told to cut down a tree as s/he needs firewood for cooking. The woodcutter chooses any tree and cuts it down the participant sits down.
5. The modern doctor then has a chance to find the cure by asking any tree whether they have the seed. If yes they reveal the seed if no they also sit down.
6. The woodcutter then has to find wood to build a house and again cuts another two trees.
7. The modern doctor also asks two trees if they have the cure.
8. This continues until we are getting near to the end of the game and a race can commence between the modern doctor to find the seed cure before the woodcutter cuts down all the trees.
9. When every tree is sitting down we ask the traditional medicine man to find the tree with the cure and retrieve the seed. Note the modern doctor could have asked the traditional medicine man where the seed is demonstrating that often modern men of science do not learn from traditional beliefs.

Materials

- Paper and Pens
- 1 large Seed

The Importance of Trees

Aim: To understand what trees provide and why forest reserves and parks should be protected.

Discuss in groups of 5-6 students about why trees are good, make a list and one person reports back to the class.

Teachers Note:

- Produces **Shade** i.e. under a tree in the shade it is up to 10oC cooler.
- Provides **homes** for insects, animals and birds.
- **Reduces soil erosion** by slowing down the water flow.
- Provides **fertility** especially acacia species.
- Provides **fuel** for cooking, tobacco and brick curing.
- Provides **building materials** and is used to make **canoes, hoe handles, pestle and mortars.**
- Provides **food** e.g. fruit and leaves (*indiwo* from *Moringa* leaves).
- Provides **medicine.**
- Provides **Oxygen** i.e. trees take in the carbon dioxide that we breathe out and give out oxygen that we need to breathe and stay alive or good air breathed in and bad air breathed out.
- Deep roots to **bring up water from underground.**
- Provides a **windbreak.**
- **Tourist attraction.**

The teacher lists the answers on the board and explains the answers more fully so that all the class understands.

Discuss with the class about deforestation (cutting down of trees).

Ask them what is the main cause of deforestation in Malawi?

Refer to the list given by the pupils the main causes are charcoal, firewood and timber.

The Importance of Trees

Discuss with the class what are the solutions to deforestation?

Teachers Note:

- Stop forest fires put in **fire breaks**.
- Plant tree **nurseries** and **woodlots**.
- Use **alternative fuel** e.g. solar and briquettes.
- **Cook efficiently** by using lids on pots and clay oven so you **use less firewood**.

Activity for Outside

Breathing Trees Game

1. Before playing ask the group to take a deep breath and hold it, after a few seconds, breathe out. Ask what is the difference between the air they breathed in and the air they breathed out? Explain about oxygen and carbon dioxide or good air and bad air.
2. Ask them to take another breath and hold it, then breathe out. The air was still good although they just breathed out all that bad air! Where is all this fresh air or good air coming from? The answer is from the trees.
3. Divide the class into 3 groups (one group twice as big as the other), 1 is the trees and 2 and 3 are the animals.
4. Ask the smaller group of trees to spread over a large area (half a football pitch) and this is their station where they stand with their arms outstretched and swaying.
5. The large group is the animals, which can only breathe when they are next to a human tree. They can only stay at the tree for 5 seconds after which they hold their breath and move to another tree.
6. The game starts easily enough with the animals, holding their breath and moving from tree to tree.
7. Then the leader takes on the role of a mad tree cutter with an invisible axe and starts to cut down trees. As a tree is cut down the leader shouts **TIMBER!** The tree falls to the ground and can no longer give oxygen.
8. The tree cutter makes longer distances between the trees for the animals to run to.
9. Eventually the animals surround the last tree and maybe even defend the tree from the wood cutter.
10. As the last tree is cut down the tree cutter gasps for air and also falls down. **GAME OVER.**
11. Repeat the game giving a chance for the trees to be animals so that half the animals are trees.
12. After this, ask the group how it felt as the trees became more scarce?
13. Extend this discussion by asking them how it would feel if the trees were lost from the forests then the whole world? Could such a thing happen? If so, why? What could we do about such a situation?

Importance of Biological Diversity (Part 1) – Places to live

Aim: To understand what biological diversity is and why it's important to Malawians and why LNP should be protected.

Definition of Biological Diversity: The different plants and animals in a place.

Discuss with the class about the different wildlife areas in Malawi where animals and plants live? Ask them to name the different habitats (homes).

Teachers note; lakes and rivers (water), forests, grasslands, and mountains.

Ask the class to name the 5 National Parks and 4 game Reserves in Malawi.

Teachers note: Use the Wildlife Map of Malawi to show where the 5NPs - Nyika, Kasungu, Lake Malawi, Liwonde and Lengwe and 4 GRs - Vwaza Marsh, Nkotakota, Mwbavi and Majete.

Because of the different homes (habitats) there are many thousands of different plants and animals. Some are found only here in Malawi and no-where else in the world e.g. Mulanje cedar and some species of fish in Lake Malawi. 20% of Malawi is under some form of Conservation; wildlife is important for our culture, for their medicines, for their beauty and because we earn a living from them.

Discuss with the class:

1. What Problems do animals and plants face from humans? (Problems to Biological Diversity)
 - Poaching and killing animals, birds and fish for meat and for selling.
 - Taking plants and animals for medicine.
 - Cutting trees and causing deforestation for: Firewood, Charcoal and Timber.
 - Cutting plants for baskets, mats and thatching.
 - Growing human population needing land for agriculture and taking this land from conservation areas.
2. **What are the Solutions to protecting Plants and Animals? (Saving Biological Diversity)**
 - Have your own animals e.g. fish ponds, rabbits and guinea fowls.
 - Wildlife Clubs and Village Natural Resource Committees to plant trees, create awareness and to inform on people who illegally enter the park.
 - Enforce the law by the park scouts;
 - Tourism e.g. visitors to the park;
 - Better farming practices e.g. increase maize yields on the land we use for farming now.

Importance of Biological Diversity (Part 1) – Places to live

When tourists visit Malawi they want to see animals, which do not live in the wild in their own country. Remember that East and South Africa are the only places in the world to have these animals.

Get into groups of 5-6 students and name the Big Five (cause they are the top 5 people want to see)

Ask each group to name an animal and make a list on the board; ask if the other groups agree.

Teachers note; The Big Five are Buffalo, Lion, Leopard, Black Rhino and Elephant.

Ask the class what the Big Five eat and where they live?

Give 2 choices for where they live; grassland (plains) or forest.

Teachers note: Buffalo eats grass - lives plains; black rhino eats bushes- lives forest; leopard eats small animals - lives forest; lion eats larger animals- lives plains; and elephant eats grass- lives plains.

Materials

- Wildlife map of Malawi
- Pens and paper

WILDLIFE CLUB LESSONS

Aim: To understand that different animals eat different foods (and that is part of biological diversity) but also all animals and plants are connected in a food web and the loss of one species can affect others.

Discuss with the class using the Mammal Posters

1. What do Herbivores eat?

They get their food from plants but different animals eat different parts of plants. (Use mammal Posters to point out the two groups of herbivores).

- **Grazers** are animals that eat **grass** but they eat different grasses e.g. zebra eats the tops of tall grass while reedbeek prefer shorter green grass (domestic grazer is a sheep).
- Grazers are animals that eat grass but they eat different grasses e.g. zebra eats the tops of tall grass while reedbeek prefer shorter green grass (domestic grazer is a sheep).
- Browsers are animals that eat leaves, twigs and fruit of trees and bushes and will eat at different heights e.g. elephants can reach high acacia branches while rhinos prefer low shrubs (domestic browser is a goat).
- Each type of animal eats in a different place e.g. impala prefer open woodland, zebra like the plains and reedbeek prefer grasses growing in shallow water. (This reduces competition within the groups of animals)
- Animals move seasonally they graze near a waterhole in the dry season and move to a wider area during the rains. Although they have a preferred food in the dry season they will eat what they can e.g. elephants prefer grass but in the dry season will eat mopane leaves & baobab bark. (Compare with nsima as our preferred food but cassava will be eaten in times of shortage).

2. What do Carnivores eat?

Get their food from eating animals by hunting them. (Use the mammal Poster and ask the students what these animals eat).

3. What do Omnivores eat?

Get their food from eating both animals and plants. (Use the mammal Poster and ask the students what these animals eat e.g. baboon and humans).

Get into groups of 3-4 students and do the 'What do living creatures eat?' Activity

Teachers Note: Get the students to write the headings for the three groups on a piece of paper; herbivore, carnivore and omnivore and to list the animals under one of the headings. Write the list of animals on the board with the chechewa name. Ask each group to say which group the animal is in and ask if the rest of the class agrees.

WILDLIFE CLUB LESSONS

Activity for Inside if there is enough space Outside if not

Food Web Game

1. Get ... students to form a circle with the leader inside with the pictures of the animals and plants. Let some students become the plants and animals they want to be.
2. The student names the plant or animal and hangs the picture over their head.
3. Each student has to name the type of food it eats. As they name the food, the leader hands them a piece of string, which they hold in the middle.
4. Each student then gives one end of the string they are holding to the animal or plant they eat and the other end to the animal that eats them. This creates a web of life.
5. The next stage is to show inter-dependence. Get all members of the food web to hold their strings so that they are taut.
6. The leader then 'kills off' one member of the group e.g. a tree or a leopard. When the individual 'dies', the strings they are holding on to are to be pulled, so that the plant or animal feeling the other end feel the pull, they then also die. The end point is when each member feels the pull and dies.

Materials

- Mammal Posters
- 'What do living creatures eat?' Activity.
- Pictures of Various Local Animals and Plants on cards with string for hanging around the neck.
- String cut into 2m lengths
- Paper and pens

Your Environment

Aim: To understand the different areas that make up the environment and the problems associated with each area.

Discuss in groups of 5-6 students about what makes up your environment, make a list and one person reports back to the class.

(The teacher writes all the answers on the board and then writes the five areas; Land, Water, Air, Living and Built as headings and together with the students move the listed answers under these headings. Add what has been missed getting the students to make additional suggestions).

1. Land i.e. rocks, soil, sand.
2. Water i.e. lakes, rivers, seas, wells.
3. Air
4. Living i.e. animals, trees, humans, plants, fish, and birds.
5. Built i.e. houses, schools, roads, clinics, railways etc.

Get the students back into their groups and give each group one of the five environmental areas and make a list of the environmental problems found in Malawi within these areas.

1. **Land**
 - *Soil erosion from cutting trees or from crop residue burning and forest fires.*
2. **Water**
 - *Water pollution from industry and sewage (faeces) getting into the water supply (a pit latrine must be at least 20m from a well, borehole or stream).*
 - *Standing water and the diseases associated with it like malaria and bilharzia.*
 - *Growing crops on the banks of streams.*
 - *Over fishing and fishing with too small a net size.*
 - *Taking water carelessly.*
3. **Air**
 - *Pollution from fires and industry.*

Your Environment

4. Living

- *Poaching animals.*
- *Cutting down trees and forest fires.*
- *Over- Grazing.*
- *Population pressures with high birth rate leading to not enough resources for all.*
- *Poverty.*
- *Disease and malnutrition.*

5. Built

- *Falling down of houses.*
- *Lack of latrines and wells and boreholes.*
- *Impact of building new houses and gardens into conservation areas.*
- *Road accidents.*

Activity for individuals - Wordsearch of 'Your Environment'

(Use the 'Your environment' wordsearch) The students must find words from the list below in the grid of letters. The word can be written up, down, forwards, backwards or diagonally. When the word is found it is circled and the word crossed off the list.

Materials

- *Paper and pens*
- *'Your Environment' Wordsearch Activity*

Your Environment – Land and the Importance of Good Soil

Aim: To understand what causes soil erosion and how to stop it and to know how to improve the soil and the benefits to wildlife it gives.

Definition: Soil erosion is the loss of soil, which is bad for agriculture.

Discuss in groups of 5-6 students about the causes of soil erosion, make a list and one person reports back to the class.

- *Cutting down trees – Deforestation.*
- *Flooding and running water.*
- *Over-Grazing.*
- *Farming on steep slopes.*
- *Burning the crop residues and forest fires.*
- *Up and Down Cultivation on slopes.*
- *Planting crops on the banks of the streams.*
- *Planting the same crop on the land year after year so the soil becomes tired.*

Discuss with the class about the solutions to preventing soil erosion.

- *Plant Trees.*
- *Practice contour farming.*
- *Plant vetivar grass on contours.*
- *Practice agroforestry farming as can grow trees or bushes for food e.g. calliandra for animals or for the improvement of the soil e.g. msangu.*
- *Practice crop rotation (planting a legume once every three years) or mixed cropping*
- *where legumes are grown with maize; **ask the class to give examples of legumes** – peas, beans, pigeon peas, groundnuts.*
- *Using compost (made mostly from plant material) / manure (made from animal dung).*

Discuss with the class about the importance of putting compost / manure in the soil.

- *Gives food (nutrients) to the plants.*
- *Contains Decomposers e.g. bacteria and worms that break down the plant and animal matter into food (nutrients). They are an important part of the food chain.*
- *The worms and other insects can be a food source to birds and animals **ask the students to give the food chain** e.g. Dead plants ← worms ← chickens ← people.*

Your Environment – Land and the Importance of Good Soil

Activity - Break the Code

Hand out the activity one copy between 2-3 students. Work out which birds are listed by breaking the code; a number is used to represent a letter do the first bird together as a class.

Use the pictures of birds handout to show what the birds look like.

Answers : 1. Fish Eagle; 2. Hornbill; 3. Hamerkop; 4. Sacred Ibis; 5. Grey Heron; 6. Osprey; 7. Pied Kingfisher; 8. Hoopoe; 9. Pied Crow; 10. Flamingo; 11. Owl; 12. Pigeon.

Materials

- Pens and paper.
- Break the Code Activity.
- Pictures of Birds handout.

Your Environment – Land and the Importance of Good Soil

Aim: To understand what causes soil erosion and how to stop it and to know how to improve the soil and the benefits to wildlife it gives.

Discuss:

1. Why is water important?
 - Drinking / Cooking
 - Bathing
 - Washing Clothes
 - Irrigation
 - Fish Farming
2. What are the Causes of Bad Water
 - Washing laundry in rivers and streams
 - Water born Diseases
 - Rubbish Dumping
 - Animal Contamination
 - Dead Things
 - Soil Erosion
 - Agricultural Run-Off (Pesticide H/O)
3. Water Treatment Techniques
 - Boiling
 - Add Chemicals e.g. water guard
 - Filtration
 - Tap water
 - Don't wash in Rivers
 - Make Rubbish Pits
 - Build Latrines at least 30m from water source

Your Environment – Land and the Importance of Good Soil

Activity

1. Filtering Dirty Water

Use a 2 litre plastic bottle with the bottom cut off. Fill the first layer with coarse stones, next a layer of smaller stones then another of smaller again, finishing with sand. Mix dirt with water and pour through the filter and catch the filtrate in a bowl. The dirt will be removed from the water.

2. Pond Dipping

Take the nets and dip into a local pool of water.

Materials

- Pesticide H/O
- 2 Litre Bottle with piles of stones of varying sizes and Sand
- Dirty Water and Collecting pot
- Pens and paper
- Net on a stick

Identifying Problems Around Your School

Aim: To understand the natural resources around your school and identify any environmental problems.

Discuss: