Biodiversity Charades

Why is Biodiversity important?

"Tuning in"

Learners find out about life-sustaining processes that make life as we know it possible

Grading:

Time:

Place: Inside

Group size: Up to 6 learners in a group.

Activity Outcomes:

Learners are able to:

- understand life-sustaining processes and inter-connectedness of natural resources
- use scientific knowledge and skills to contribute to the management and utilisation of ecosystems and species

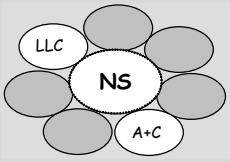
Assessment:

- Facilitator evaluates group interaction and under-standing of concepts

Skills:

- Decision-making
- Managing and organising information

Learning Area links



Background

Nature provides many services that make life as we know it possible. However, often we are not aware of these services and take them for granted. Plants provide beauty and food but how often do we think about the fact that they create the oxygen we breathe? It is due to the biodiversity of life that all of these services are possible.

Activity Guidelines

Needed: *One set of Biodiversity Cards (Page B2, 3 & 4)*

- Divide learners into groups of up to 6.
- Hand out a Biodiversity Card to each group which describes a "free service" of nature.
- Explain what a free service is (it is one that is performed daily - or nightly - that makes life as we know it possible e.g. trees providing oxygen, wetlands purifying water and bees pollinating flowers).
- Allow the groups 10 minutes to plan their charades: act out free services.
- Then each group performs as the other groups try to answer two questions:
  - What is the "free service" being performed?
  - What is the significance of this "free service" to life on Earth?
- After each team's performance, the other teams write the answers to the two questions on a piece of paper. The answers are tallied at the end of each round, with 1 point given for correct answers to the first question, and 2 points given after answering the second question correctly. The winning team receives a second Biodiversity Card and gets to perform a second time.

If the learners find it difficult to perform their act, permit them to use a minimum of props, such as chalk dust for pollen.

Variations

Extend the activity

Learners create their own Biodiversity Cards, then play another round.

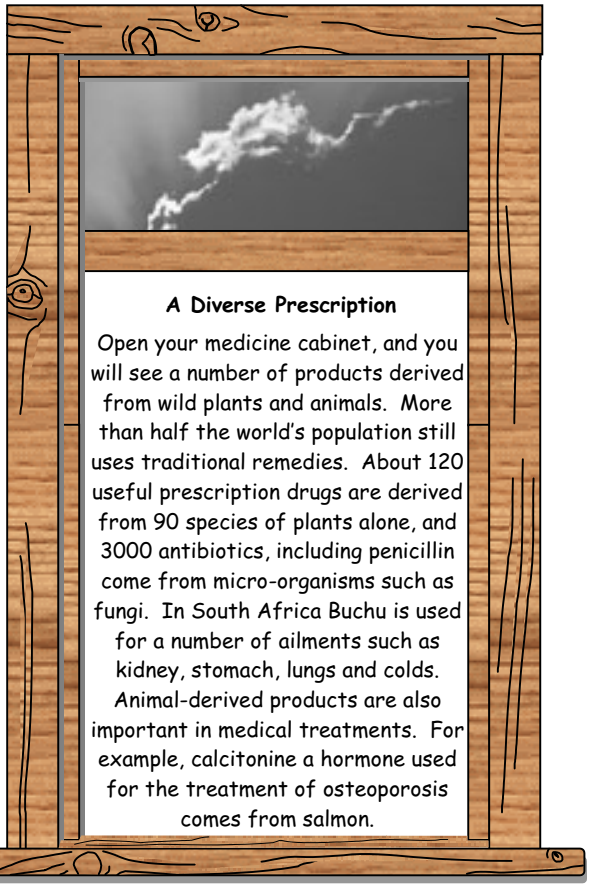
Further discussion

Learners explain what would happen if a "free service" stopped. For example, what if the species that performed the "free service" became extinct. The learners could even create a food web or chain to illustrate how the extinction of one species affects others. (See Activity 2.3, page B9 and Activity 5.5, page E29)

Create a poster

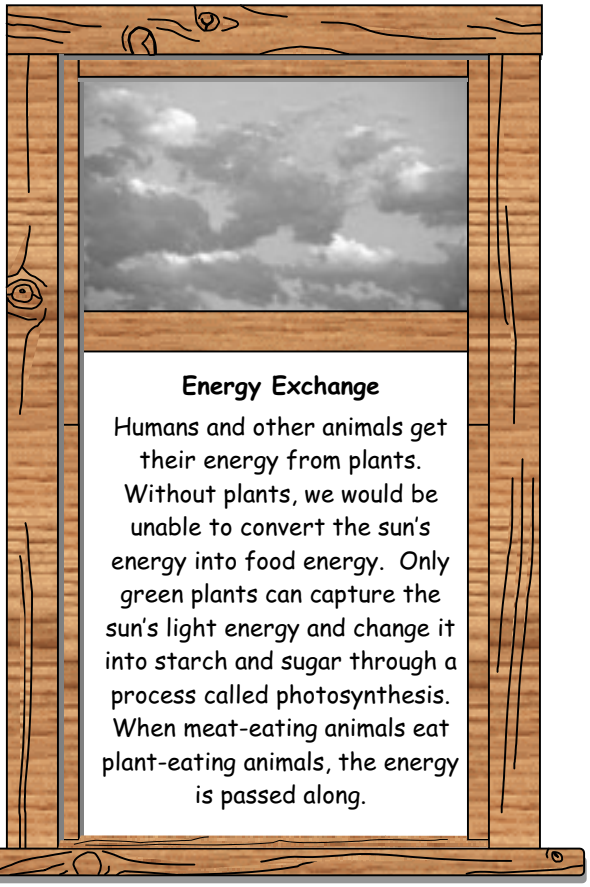
Learners create posters that depict and explain each of the free services. Slogans can be used to "advertise" the service.

Biodiversity Cards



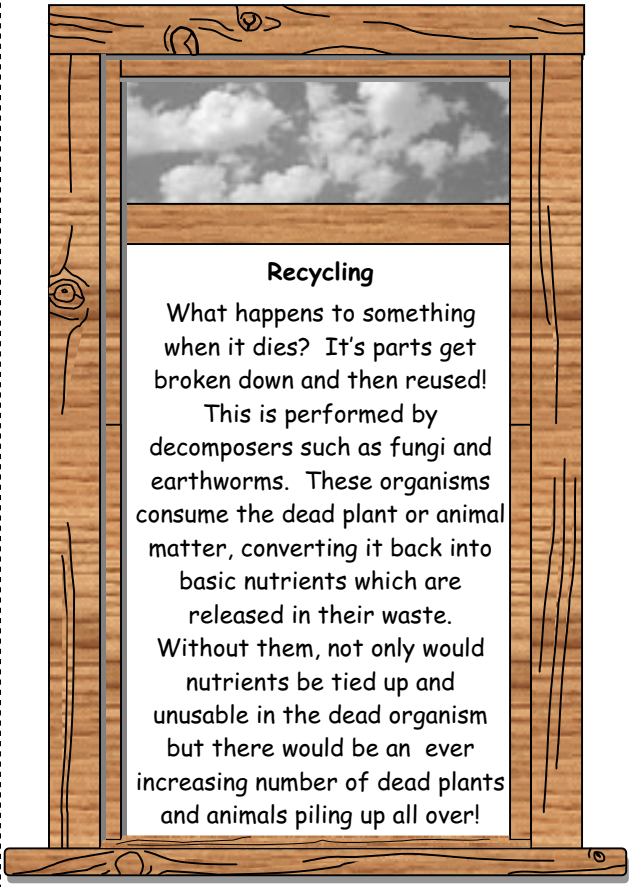
A Diverse Prescription

Open your medicine cabinet, and you will see a number of products derived from wild plants and animals. More than half the world's population still uses traditional remedies. About 120 useful prescription drugs are derived from 90 species of plants alone, and 3000 antibiotics, including penicillin come from micro-organisms such as fungi. In South Africa Buchu is used for a number of ailments such as kidney, stomach, lungs and colds. Animal-derived products are also important in medical treatments. For example, calcitonine a hormone used for the treatment of osteoporosis comes from salmon.



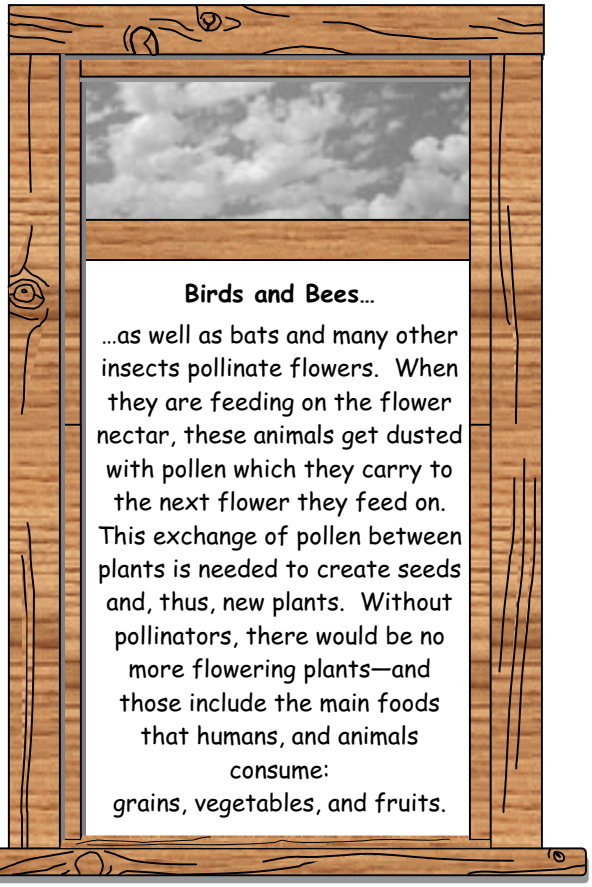
Energy Exchange

Humans and other animals get their energy from plants. Without plants, we would be unable to convert the sun's energy into food energy. Only green plants can capture the sun's light energy and change it into starch and sugar through a process called photosynthesis. When meat-eating animals eat plant-eating animals, the energy is passed along.



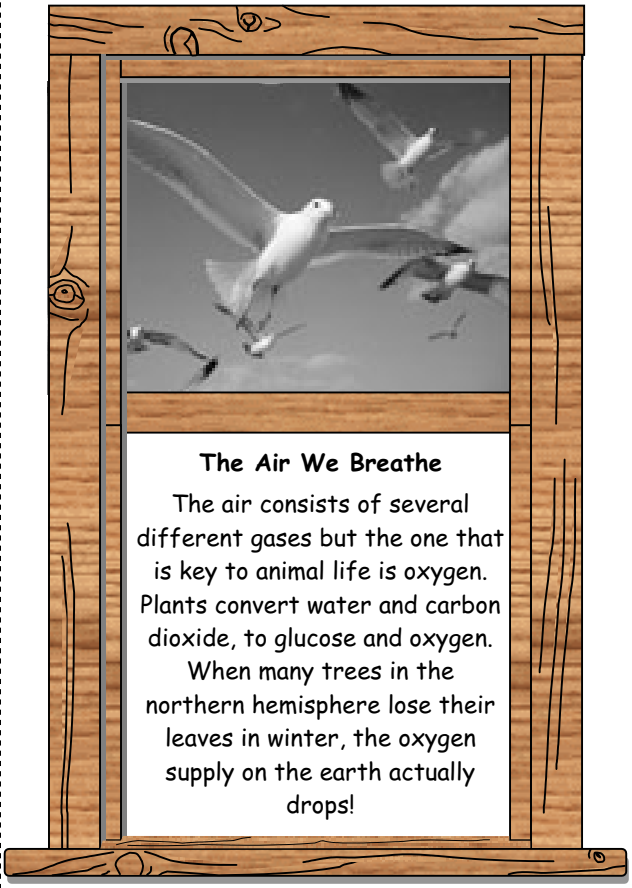
Recycling

What happens to something when it dies? It's parts get broken down and then reused! This is performed by decomposers such as fungi and earthworms. These organisms consume the dead plant or animal matter, converting it back into basic nutrients which are released in their waste. Without them, not only would nutrients be tied up and unusable in the dead organism but there would be an ever increasing number of dead plants and animals piling up all over!



Birds and Bees…

…as well as bats and many other insects pollinate flowers. When they are feeding on the flower nectar, these animals get dusted with pollen which they carry to the next flower they feed on. This exchange of pollen between plants is needed to create seeds and, thus, new plants. Without pollinators, there would be no more flowering plants—and those include the main foods that humans, and animals consume:
grains, vegetables, and fruits.

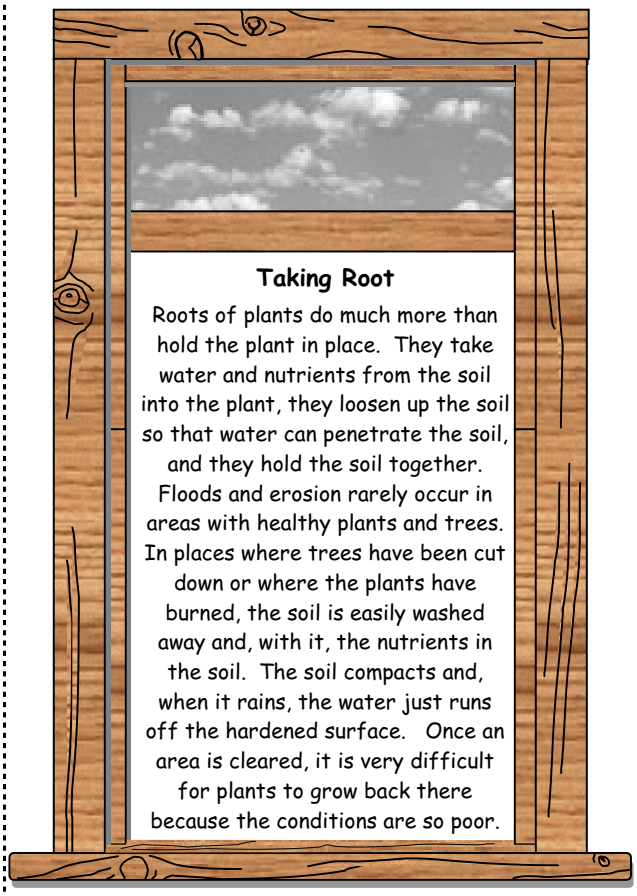


The Air We Breathe

The air consists of several different gases but the one that is key to animal life is oxygen. Plants convert water and carbon dioxide, to glucose and oxygen. When many trees in the northern hemisphere lose their leaves in winter, the oxygen supply on the earth actually drops!

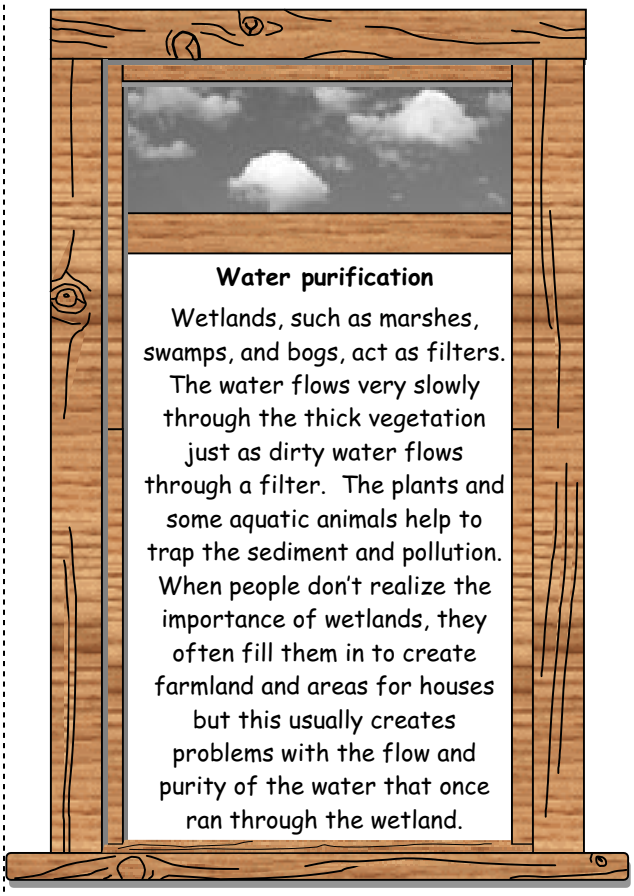
Pest Control

We consider many species of insects to be pests as they eat our crops, spread disease, and bite us, but these species provide food for many other animals. Swallows and bats like nothing more than a juicy mosquito or gnat for dinner, and many types of fish eat the larvae of these insects. In the food chain, one species must be the food for another.



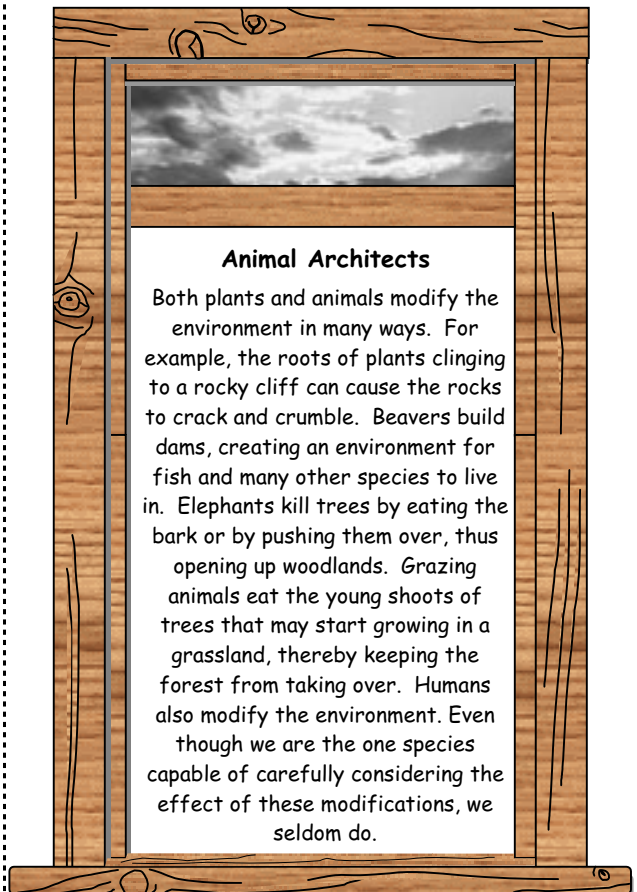
Taking Root

Roots of plants do much more than hold the plant in place. They take water and nutrients from the soil into the plant, they loosen up the soil so that water can penetrate the soil, and they hold the soil together. Floods and erosion rarely occur in areas with healthy plants and trees. In places where trees have been cut down or where the plants have burned, the soil is easily washed away and, with it, the nutrients in the soil. The soil compacts and, when it rains, the water just runs off the hardened surface. Once an area is cleared, it is very difficult for plants to grow back there because the conditions are so poor.



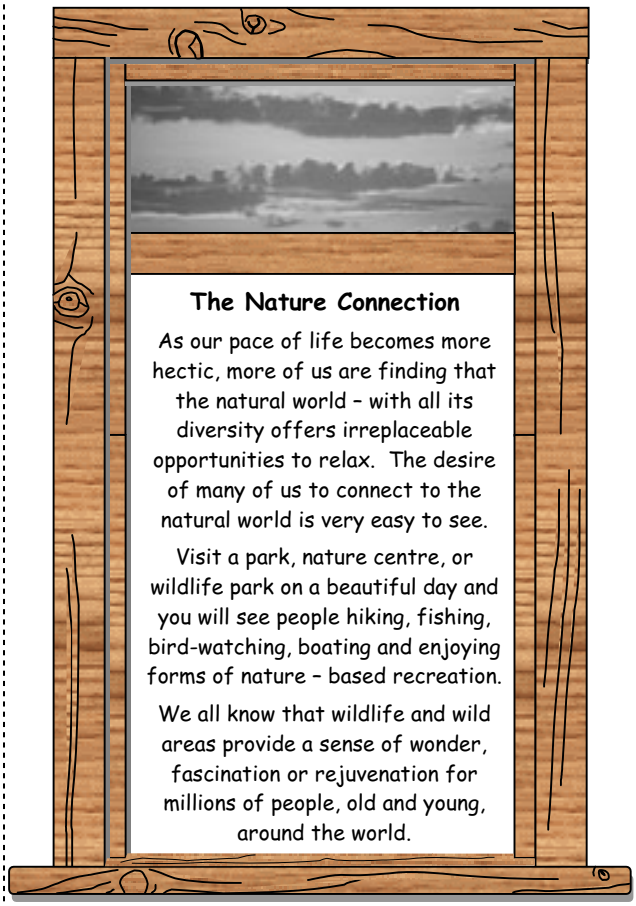
Water purification

Wetlands, such as marshes, swamps, and bogs, act as filters. The water flows very slowly through the thick vegetation just as dirty water flows through a filter. The plants and some aquatic animals help to trap the sediment and pollution. When people don't realize the importance of wetlands, they often fill them in to create farmland and areas for houses but this usually creates problems with the flow and purity of the water that once ran through the wetland.



Animal Architects

Both plants and animals modify the environment in many ways. For example, the roots of plants clinging to a rocky cliff can cause the rocks to crack and crumble. Beavers build dams, creating an environment for fish and many other species to live in. Elephants kill trees by eating the bark or by pushing them over, thus opening up woodlands. Grazing animals eat the young shoots of trees that may start growing in a grassland, thereby keeping the forest from taking over. Humans also modify the environment. Even though we are the one species capable of carefully considering the effect of these modifications, we seldom do.



The Nature Connection

As our pace of life becomes more hectic, more of us are finding that the natural world – with all its diversity offers irreplaceable opportunities to relax. The desire of many of us to connect to the natural world is very easy to see.

Visit a park, nature centre, or wildlife park on a beautiful day and you will see people hiking, fishing, bird-watching, boating and enjoying forms of nature – based recreation.

We all know that wildlife and wild areas provide a sense of wonder, fascination or rejuvenation for millions of people, old and young, around the world.