

LESSON NOTES

Subject: Basic Science

Week 14

Year/Level: 9

Strand	1 : LIVING THINGS AND THE ENVIRONMENT
Sub Strand	1.3 : BIODIVERSITY,CHANGE AND SUSTAINABILITY
Content Learning Outcome	Examine and describe the potential long-term effects of change in biodiversity caused by human action on ecosystems and communicate ways of conserving ecosystems.

Biodiversity and its Importance

- varieties of living things in different ecosystem like the rainforest, reef etc.
- Refers to the diversity of life in area.
- **Biodiversity**: can be described in terms of its:
 - ✓ **Genetic diversity**:the variety of genetic information contained in all individual plants, animals and micro-organisms.
 - ✓ **Species diversity**: the variety of living species.
 - ✓ **Ecosystem diversity**: relates to the variety of habitats, communities and ecological processes and the diversity that is found within them.

Note: Medicines from Plants

Over a quarter of modern medicines are from plants or were first discovered in plants.

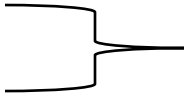
Most of the knowledge comes from indigenous people who have their own traditional plant remedies.

A lot of this old knowledge is in danger of being lost.

Also one of the tragedies of rainforest destruction is that many plants and animals are becoming extinct before we discover anything about them- or even know that they exist.

Importance of biodiversity in an ecosystem

- 1) **Provide humans and organisms with:**
 - ✓ Food
 - ✓ Medicine
 - ✓ Shelter
- 2) **Helps to keep our water clean**
 - ✓ Natural vegetation around water catchment areas
 - ✓ help maintain healthy water systems
 - ✓ regulate and stabilise water runoff
 - ✓ help to prevent extreme events such as flood and drought.
- 3) **Soil:**
 - ✓ Helps to form and maintain soil structure

- ✓ helps to keep the soil moist and rich in nutrients.
- 4) Dead and decaying organic matter breakdown with the help of fungi and bacteria leaving nutrients in the soil.
- 5) Nutrient storage and recycling
- 6) Breaking down and absorption of pollutants created by human activities such as:
 - ✓ oil spills
 - ✓ rubbish
 - ✓ waste water.

decomposers to higher life forms are involved in the breakdown and absorption
- 7) **Contribute to stability in climate.**
 - ✓ undisturbed forest helps to maintain rainfall in an area by recycling water vapour in the atmosphere
 - ✓ locking away some of the harmful greenhouse gases released through:
 - burning of fossil fuels
 - intensive agriculture
 - clearing of land

Changes in the ecosystem:

The changes in an ecosystem cause threats to the biodiversity of that ecosystem.

This result in:

- 1) Using up of natural resources before they can be renewed overfishing in oceans, over-harvesting of trees on land.
- 2) **Habitat destruction:**
 - ✓ clearing forest
 - ✓ draining wetlands for new developments
 - ✓ agricultural purposes
- 3) Releasing invasive species into foreign ecosystems like African tulip in forest, tilapia in Rewa river etc.
- 4) Any kind of pollution
- 5) Failure of food chains

How can you help Biodiversity?

- ✓ Do not use pesticides- they kill plants and animals
- ✓ Use cloth napkins
- ✓ Recycle old newspapers and buy recycled paper products
- ✓ Always use eco-friendly cleaning products

Effects of changes on Organisms

- ✓ decrease in number of endangered species
- ✓ decrease in food supply
- ✓ loss and degradation of habitat

Human Activities that contribute to these changes in the ecosystem

- ❖ Improper waste disposal and polluting of environment
- ❖ Reclamation of land for use through development
- ❖ Burning and deforestation/Logging

ACTIVITY:

1) List three things that could describe Biodiversity.

- a) _____
- b) _____
- c) _____

2) State any five importance of Biodiversity.

- a) _____

- b) _____

- c) _____

- d) _____

- e) _____

3) Explain three ways in how humans contribute to changes in the ecosystem.

- a) _____

- b) _____

- c) _____

