

PENANG SANGAM HIGH SCHOOL

P.O.BOX 44, RAKIRAKI

LESSON NOTES

Subject: Basic Science

Year/Level: 10

Week 18

Strand	1 : LIVING THINGS AND THE ENVIRONMENT
Sub Strand	1.3 : BIODIVERSITY, CHANGE AND SUSTAINABILITY
Content Learning Outcome	Explore and describe the importance of traditional and contemporary methods conserving the marine ecosystem for sustainability.

More to Know

To protect our flora and fauna and their habitats, protected areas called sanctuaries, national parks and biosphere reserves have been earmarked. Plantation, cultivation, grazing, felling trees, hunting and poaching are prohibited there.

Sanctuary: Areas where animals are protected from any disturbance to them and their habitat.

National Park: Areas reserved for wild life where they can freely use the habitats and natural resources.

Biosphere Reserve: Large areas of protected land for conservation of wild life, plant and animal resources and traditional life of the tribals living in the area.

Some of the key aspects and benefits include:

1. **Planting in basins**

- ✓ Farmers create basins in the soil in which seeds can be planted.
- ✓ When the rains come the water is trapped in the basins, allowing roots to develop and stopping the top soil and fertiliser being washed away.

2. **Leaving crop residue for the next harvest**

- ❖ Farmers are encouraged to leave the residues rather than burning them.
- ❖ This:
 - ✓ reduces soil and water loss
 - ✓ improves infiltration
 - ✓ reduces surface temperatures
 - ✓ improves soil fertility.
- ❖ Because seeds are planted in the same basin each year, the fertiliser left from the previous crop can be absorbed by the new crop.

3. **Nitrogen-fixing crop rotations**

- ❖ Farmers are encouraged to grow legumes (beans, peanuts) and other nitrogen-fixing crops in rotation to increase the natural soil nutrients.
- ❖ This will reduce the need for artificial fertiliser and enable them to diversify their crops.

4. **Early planting during the first rains**

- ❖ Farmers need to prepare land as soon as they have harvested the previous crop.
- ❖ Planting during the first rains enables the seeds to benefit from the nitrogen that the rains flush through the soil.

5. **Planting dense rows of trees** as wind-breaks along the borders of the land, especially on the sides that are exposed to stiff winds. Their roots stabilize the soil and prevent it from being shifted away by the wind.

6. **Planting crops in rotation.**

Alternating crops helps avoid depleting the soil nutrients too fast.

7. **Planting cover crops.**

- ❖ Stabilize the soil
- ❖ reduce the effects of soil erosion.
- ❖ discourage the spread of weeds
- ❖ help the soil retain its moisture in the summers.

8. **Ploughing along the contour of the land.**

9. **Planting crops parallel to the slope of the land.**

10. **Going for strip cropping.**

- ❖ involves planting grasses or pulses between regular crops like corn.
- ❖ corn crop is not particularly effective in preventing soil erosion, but the grasses keep erosion in check.

11. **Adding mulch to the soil surface**

- ❖ prevents erosion by acting as a barrier
- ❖ catching run-off water.

12. Adding coir logs (durable biodegradable erosion prevention log) as barriers.

- ❖ very useful in areas where too much erosion has taken place
- ❖ act as erosion preventing barriers
- ❖ support for new developing vegetation.
- ❖ Aside from coir barriers, sand bag and gravel bag barriers are also used.

13. Growing grass on slopes and in waterways.

Grassed waterways prevent too much soil from being washed away.

14. Terrace cropping

- ❖ slows down the flow of rain down a hillside
- ❖ terrace gives the water time to soak in
- ❖ nourish the crop.

Public Awareness

- ❖ public's level of understanding about the importance and implications of conservation.
- ❖ explaining issues and disseminating knowledge to people so that they can make their own decisions.
- ❖ various organisations and schemes that seek to inform the public of important and topical issue.
- ❖ Greater awareness:
 - ✓ empowers the public
 - ✓ enables informed debate on environmental issues affecting society.

❖ **Ways of raising public awareness:**

- ✓ Seminars
- ✓ Workshops/conferences
- ✓ Awareness materials (brochures, posters, videos, stickers etc.)
- ✓ Exhibitions
- ✓ Public awareness events
- ✓ Visitors' days
- ✓ Field days
- ✓ Media (newspapers, radio, TV
- ✓ Websites and other internet based tools

ACTIVITY

1. Discuss the effects of development (hotel development, building of jetties, and building of industrial areas, constructing roads) on marine environment.

2. IUCN Red List of Threatened Species is a complete list of conservation information of plants and animals around the world. List down all the IUCN Red List species of Fiji

...STAY SAFE... 