



Jost van Dyke Preservation Society



LIVING THINGS PRACTICAL EXERCISE JANUARY 2009

Prepared for the Jost van Dyke Primary School by the Jost van Dyke Preservation Society as part of the OTEP funded project entitled “Jost van Dyke’s Community-based Programme Advancing Environmental Protection and Sustainable Development”

January 27, 2009

General Note:

Principal Martin of the Jost van Dyke Primary School invited Susan and Rosemary of the Jost van Dyke Preservation Society, to present the information on the “Living Things” section of the Governments Primary School Syllabus to the students of the Primary School. This exercise therefore represents a natural area of overlap between the Governments Primary School Syllabus and the project. This exercise was initially done with students of Classes 3, 4 and 5 (roughly an age span of 9 to 13yrs), but can be adapted to suit any age level. The ecosystems visited during this project were 1) The mangrove area near to the Jost Van Dyke Primary School (adjacent to the Jost van Dyke Methodist Church) 2) The beach at Great Harbour, Jost van Dyke and 3) The mangrove area and salt pond next to the Ice cream parlour).

Objectives:

1. To help students understand the difference between living and non-living things.
2. To help students to learn to classify living things.
3. To improve students observation skills.
4. To help students to develop their abilities to do biological drawings.
5. To help students to become more familiar with their natural surroundings.

Approach:

Students will be placed in groups of four. Each group of students will choose a name (the names should be the names of living things found in and around Jost van Dyke. Each group should also choose a group leader. Students will then follow the instructions on this sheet which will serve as a guide to learning more about the classification (grouping) of living things.

Materials:

A book, piece of card board or slate to press on, pencils and pens, paper to draw on, ruler, magnifying glass, microscope, containers to collect water samples, hat.

Introduction and Review:



Jost van Dykes

Preservation Society

Biology is the study of life or of living things. Biologists divide the world into living and non living things. They then further living things into plant and animals. Plants and animals can then be further subdivided into smaller groups. This grouping on living things into smaller and smaller groups is one way of helping us to appreciate, understand and describe the vast diversity of millions of living organisms that share this planet with us.

By asking and answering a series of questions and making observations during our field trip in Great Harbour, we can learn more about the living things on Jost van Dyke.



Section 1

How can we tell if an object living or non living?

What are the seven characteristics of living things? (Hint the definitions are given below – note the characteristic which each definition describes).

1. Through a chemical process known as _____ a living thing can create energy for its activities. An example of this process is when a living thing takes in oxygen and gives out carbon dioxide.
2. Living things take in food, this is known as _____.
3. Living things get rid of toxic or poisonous substances from their bodies. This is known as _____.
4. Living things increase in size, this is known as _____.
5. Living things can go from one place to another, or parts of a living thing can respond to occupy different spaces. Living things _____.
6. New living things can be created from existing living things. Living things _____.
7. Living things have the ability to respond to _____ such as sound touch, gravity and light.

Section 2

What is the basic unit of life and what are its components?

Hint: The _____ is the basic unit of life. _____ may be seen under the microscope. An organism that is made up of only one cell is referred to as being _____. An organism that is made up of many cells is called _____. The main components of _____ are nuclei, cell membranes and cytoplasm. Plant _____ are different from animal _____. Plant _____ also have a vacuole and middle lamella.

_____ may be grouped together to form tissue, tissue may be grouped together to form organs, organs may be grouped together to form systems.



Jost van Dykes

Preservation Society



Here is our drawing of a labeled plant cell.

Here is our drawing of a labeled animal cell.

Section 3

Animals may be divided into two basic groups. Animals without vertebral columns known as _____ and animals with vertebrate columns known as _____



Some examples of animals without vertebrate columns are stated below:

Name	Notes	Example
Single-celled animals	Microscopic, live in water	Amoeba
Coelenterates	Most live in the sea	Sea anemone, jellyfish, coral
Flatworms	Often found under stones	Tapeworm
Nematodes	Often parasitic	Hookworm
(True) Worms		Earthworm
Mollusc		Smalls, slugs, whelks
Crustacea		Crab, lobsters crayfish
Insects	Have six legs and usually wings	Butterflies, ants, bees
Arachnids	Have eight walking legs	Spiders, ticks
Echinoderms	Live in sea	Starfish, sea urchin

Some examples of animals with vertebral columns are as follows:

Name	Notes	Example
Fish	Use gills to breathe, have scales	Angel fish, Yellow tail,
Amphibia	No scales on body, usually live on land but reproduce in water	Frog and toad
Reptiles	Live on land, have scaly bodies	Snakes, lizards, turtles
Birds	Have bodies covered with feathers	Hummingbird, pelican
Mammals	Bodies covered with fur, young born alive and suckled with milk	Humans, goats



Section 4

Plants may be divided into two groups – plants without flowers and flowering plants.

Some examples of plants which do not have flowers are as follows:

Name	Notes	Example
Single celled plants	Similar to single celled animals, but green. Make pond water look green	
Algae	Found in sea water and in ponds, look like long green strings	Sea weed
Fungi		Yeast
Ferns	Have spores, some are trees	
Cone-bearing plants		Casurina, pine trees

Some examples of flowering plants are as follows:

Name	Notes	Example
Monocotyledons	Narrow leaves with parallel vein	grasses
Dicotyledons	Broad-leaved plants with net veins	Sea side mahoe, genip, lime



Section 5

We will leave the school, stop at the mangrove areas just outside the school for about 15 minutes to make observations, walk along the beach front for about 15 minutes, we will then visit the mangrove area near the Jost van Dyke Preservation Society for 15 minutes. At the mangrove area near the Preservation Society we will take a water sample to look at under the microscope, we will then return to the school.

Your mission will be to identify as many living things as possible. Try to identify living things from as many of the groups listed in the above tables as possible. Make drawings of some of the living things that you have identified.

We will then return to your school and discuss our observations. A special prize will be given to the group that has the most complete sheet. Prizes will also be given for participation.

References:

Mackean, DG. (1976). Introduction to Biology: New Tropical Edition. Jarrold and Sons, Ltd.