

EcoRaft General Lesson Plan (Grade Four)

Content Objectives

Students will be able to:

1. Know that every organism has basic needs like food or water.
2. Know that organisms can only survive in environments where their needs can be met.
3. Know that different environments support different types or organisms.
4. Know that all animals depend on plants.
5. Know that an organism's behavior is related to the nature of that organism's environment.
6. Know that all organisms cause changes in the environment where they live.
7. Know that humans change environments in ways that can either be beneficial or detrimental for themselves and other organisms.

Activities

1. Round table discussion – Teacher acts as a moderator as children discuss the following questions:
 1. What is an organism? Are plants and animals organisms?
 1. *Any living thing, including plants, animals, and bacteria.*
 2. What is an environment? How are organisms and environments related?
 1. *An environment is the area in which something lives or exists. Organisms inhabit environments and can only survive in environments that meet their basic needs. There are many different environments and distinct environments support the life of many different types of organisms.*
 3. What do plants and animals need to survive?
 1. *Plants need air, water, nutrients, and light. Animals need air, water, food, and shelter.*
 4. What happens if a plant or animal is put in an environment that doesn't have all those needs?
 1. *The plant or animal will not survive.*
 5. What would happen if an animal was put into an environment without any plants?
 1. *All animals depend on plants. Some animals eat plants for food while other animals eat animals that eat plants for food. Plants are also used as shelter for some animals. Therefore, if an animal was put into an environment without any plants, it would not survive.*
 6. How might a plant or animal change the environment it is living in?
 1. *All organisms cause changes in the environment where they live. Some of these changes may be detrimental to the organism or other organisms, but these changes may also be beneficial. For instance, certain plants introduce nitrogen into the soil. Some animals act as seed dispersers for plants.*
 7. What can humans do that would be harmful to an environment and its organisms?
 8. What can humans do that would benefit an environment and its organisms?
2. Animal pictures discussion – Students are asked to bring in two pictures, one of their pet (if they do not have a pet, than an animal they would like to have as a pet) and one of their favorite wild animal. Students are also asked to do some basic research on these two animals. Teacher acts as a moderator as children discuss the following questions:
 1. What does your pet need in order to survive? What about your favorite wild animal? Do they both need the same things? Why or why not?
 2. Describe the environment your pet lives in, and then describe the environment your favorite wild animal lives in. Are they the same? What would happen if you switched their environments?
 3. Where does your pet come from? What about your favorite wild animal?

1. *Try to highlight the need for biodiversity in ecosystems.*
4. Tell us a story about a time when your pet has changed the environment it is living in. If you don't have a pet, how might your desired pet change its environment if it were living with you?
5. How would your two animals interact with each other? How would your animals interact with other students' animals?
6. Does either of your animals depend on plants to live?
 1. *All animals depend on plants. Some animals eat plants for food while other animals eat animals that eat plants for food. Plants are also used as shelter for some animals. Therefore, if an animal was put into an environment without any plants, it would not survive.*
7. Why are there more [dogs/cats/common pet] than [tigers/rare wild animal]?
 1. *Tigers live in an environment that is continually being destroyed. Dogs, on the other hand, like people and thrive in domestic environments.*
3. Personal plant project – Students are given a few months to grow and nurture a certain plant species.
 1. Students are randomly broken up into two groups without the students being aware of the division.
 2. Each member of the first group is given a seed for an indoor plant that grows in areas with a lot of light.
 3. Each member of the second group is given a seed for an indoor plant that grows in areas with little light.
 4. Students are given a plastic pot and soil.
 5. Students label their pots with their names and plant their seeds in class.
 6. Students are then asked to research their plant to find out what the ideal environment is for it to grow.
 7. Once students have completed their research, they are asked to find an appropriate place in the classroom (assuming there are windows) for their plant to grow.
 8. Over the course of a few months, the students are required to nurture their plants and help it grow.
 9. At the end of a few months, students will compare their plants to see which ones are the healthiest.
4. Picture game – Students must collaborate with one another to share their resources and build a healthy ecosystem.
 1. Students are randomly broken up into multiple groups of ten without the students being aware of the division.
 2. Each student in a group is given one of the following resources (represented by a picture of that resource): sun, water, healthy soil, coral tree seed, coral tree, heliconia plant seed, heliconia plant, hummingbird, house, and a human.
 3. Each resource has a certain property that can either be beneficial or detrimental to the environment. Students are asked to collaborate with one another and build as many healthy ecosystems as possible by sharing their resources.
 4. Students pin up their pictures on the walls to build their ecosystems.
 5. The resources have the following properties:
 1. Sun – adds light to the environment; necessary for coral trees to grow.
 2. Water – waters the plants in an environment; necessary for coral trees and heliconia plants to grow.
 3. Healthy soil – produced when a coral tree is fully grown; necessary for heliconia plants to grow.

4. Coral tree seed – necessary for a coral tree to grow.
5. Coral tree – needs sun, water, and a coral tree seed to grow; necessary for healthy soil to be introduced into the environment.
6. Heliconia plant seed – necessary for a heliconia plant to grow.
7. Heliconia plant – needs water, healthy soil, and a heliconia plant seed to grow; necessary for hummingbirds to be introduced into the environment.
8. Hummingbird – needs heliconia plant to survive.
9. House – damages soil, kills plants, and kills hummingbirds; necessary for a person to live.
10. Person – needs house to survive.