

Hawaiian Rainforest Ecosystem Web with Watershed Friend Masks

Subject: Hawaiian Rainforest Ecosystems

Duration: 30 minutes

Location: Any open area

Age of Students: Best for 3rd – 6th grade

Group Size: 10-12

Goals: To facilitate an understanding of the concept of an ecosystem. To help students understand that all parts of an ecosystem relate to each other.

Objectives:

1. Students will define the term ecosystem.
2. Students will participate in creating a “web of life” with string to demonstrate the relationships between parts of an ecosystem.

Materials

- String or yarn for the web
- “Watershed Friends” masks

Prep: Have masks printed on cardstock. Depending on the student’s age the masks can be cutout prior to the activity.

Hooker: Frame the activity as a game. Also, the students get to role-play with their masks.

Procedure:

1. Give each student a mask to color. Each person in a group should have a different species or element to color. If there are more students than species/elements students can double up on species like the koa bug or ‘akiapolā’au; these can represent other species of bugs/birds. If there are enough people, split the class/group into two groups; each group will have one of each species. The students must read the blurb on back of their mask and be able to teach the rest of the class about their species. When students have completed coloring, have them gather in a large circle, wearing their masks.
2. Ask students to define ecosystem in their own words, based on any prior knowledge. No right or wrong answers, just to gauge understanding. If the term “relationship” comes up, expand on it, and if not, mention its importance. Give the definition: All the plants, animals, and environments in one unit of nature, including their relationships. Ask students “what is a system?” It’s a set of connected things or parts forming a complex whole.
3. Tell students: “We are going to create a visual representation of a Hawaiian rainforest ecosystem, and the relationships within it, by making a giant web.”
4. Go over each of the species. Have each student say the name of their species and unique facts about the species they have learned from the masks. Elaborate if necessary so that students will understand the where each species fits into the ecosystem.
5. Bring out the ball of yarn and describe how the yarn represents the connection between the different parts of the forest ecosystem. Explain that the ball will be passed around, but everyone will hang on to a piece of the yarn as it’s passed.
6. Start forming the web by holding on to the loose end of yarn and tossing the ball to a part of the ecosystem that is somehow connected to your role. This should form a line of yarn across the middle of the circle. For example, you’re the akiapola’au, so you toss it to the koa. There is usually more than one role connected to yours (‘akiapolā’au could toss it to, water, wind, etc.) but just choose one. Before you toss the ball, you have to say whom you are tossing it to and how they are connected to you.

7. Keep tossing the yarn in the same way until everyone is holding the yarn as a part of the web. Discuss the connections that are visible and how different parts are related. "This is an example of a healthy Hawaiian rainforest."
8. Ask students for the four reasons why species become endangered: you are looking for the following: pollution, habitat loss, introduced species, commercial exploitation. "When species become endangered or extinct, their role in the ecosystem is lost, and that affects many other organisms and environments. For example, due to habitat loss, the mamane goes extinct. Due to pollution from development, water is contaminated. Due to introduced species the mosquito and pig, the 'akiapolā'au goes extinct. Due to commercial exploitation, koa becomes endangered." Each part affected must then drop the yarn they are holding. Other roles then tug on their yarn and the web falls apart. Discuss the visual of the ecosystem web collapsing when just a few parts are affected. An ecosystem needs all parts to be healthy.

Conclusion: Ask students for the definition of an ecosystem in their own words.

Evaluation: Participation in the web activity.

Extensions: See attached sheet

Background info:

Definition of ecosystem: All the plants, animals, and environments in one unit of nature, including their relationships.

Ecosystem: a biological community of interacting organisms and their physical environment. System: a set of connected things or parts forming a complex whole.

Ecology: the branch of biology that deals with the relationships of organisms to one another and to their physical surroundings.

Adapted from *Sharing Nature with Children* by Joseph Cornell

Terms to know (from info blurb on Watershed Friend Masks):

Climate: Regular variations in weather in a region over a period of years

Cycle: A sequence of events that is repeated again and again

Evaporate: A change of a liquid into a vapor.

Endemic: A species that is only found in a particular geographical region.

Fertilizer: A chemical or natural substance added to soil or land to increase its fertility

Habitat: The natural conditions and environment in which a plant or animal lives.

Keiki: Child

Makai: Towards ocean

Native: A plant or animal that arrived to an area without the help of humans.

Nectar: The sweet liquid that flowering plants produce to attract insects and small birds that assist in pollination.

Pulu: Hair, wool.