

UC Santa Barbara

Educational Materials

Title

Food Web Lesson

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Authors

Myers, Jan
Thorsch, Jennifer

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Storke Wetland: Food Web

Next Generation Science Standards

5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. [Clarification Statement: Emphasis is on the idea that matter that is not food (air, water, decomposed materials in soil) is changed by plants into matter that is food. Examples of systems could include organisms, ecosystems, and the Earth.] [Assessment Boundary: Assessment does not include molecular explanations.]

Education and the Environmental Initiative

Principle II: The long-term functioning and health of terrestrial, freshwater, coastal and marine ecosystems are influenced by their relationships with human societies.

Concept a: Students need to know that direct and indirect changes to natural systems due to the growth of human populations and their consumption rates influence the geographic extent, composition, biological diversity, and viability of natural systems.

Concept b: Students need to know that methods used to extract, harvest, transport and consume natural resources influence the geographic extent, composition, biological diversity, and viability of natural systems.

Concept c: Students need to know that the expansion and operation of human communities influences the geographic extent, composition, biological diversity, and viability of natural systems

Principle III: Natural systems proceed through cycles that humans depend upon, benefit from and can alter.

Concept a: Students need to know that natural systems proceed through cycles and processes that are required for their functioning.

Concept b: Students need to know that human practices depend upon and benefit from the cycles and processes that operate within natural systems.

Concept c: Students need to know that human practices can alter the cycles and processes that operate within natural systems.

Principle IV: The exchange of matter between natural systems and human societies affects the long-term functioning of both.

Concept a: Students need to know that the effects of human activities on natural systems are directly related to the quantities of resources consumed and to the quantity and characteristics of the resulting byproducts.

Concept b: Students need to know that the byproducts of human activity are not readily prevented from entering natural systems and may be beneficial, neutral, or detrimental in their effect.

Concept c: Students need to know that the capacity of natural systems to adjust to human-caused alterations depends on the nature of the system as well as the scope, scale, and duration of the activity and the nature of its byproducts.

Lesson Plan: Food Web

Objective: Students will learn about food chains and food webs and learn how energy and nutrients are passed from organism to organism.

Materials: Food web kit, which includes stakes, organism cards, colored ribbon

Preparation: Set the food web game up before the kids arrive. Place a laminated card in each of the metal stakes and push the stakes into the ground to form a large circle. The sun should go in the center of the circle.

After the introduction, get one of the kids to stand next to the sun and another kid to find a producer. The kid at the sun has a large ball of ribbon and throws the ball to the producer. Another kid finds a primary consumer, and the ball of ribbon is thrown to that kid and so on until a food chain has been completed ending with a decomposer. If time, ask them what would happen if humans ate all of the primary consumers, what would happen to the food chain? Each new group forms another food chain and at the end of the morning, we have a food web.

Introduction

1. **Get kids to run around do some jumping jacks etc. Ask them what they needed to be able to do all of that running around and exercise. The answer should be ...ENERGY!**
 - Where do we get our energy? *We get energy from the food we eat.*
 - Did anyone eat a plant for breakfast? *Apple, granola, cereal, bagel etc.*
All living things need energy and get that energy from food.
 - Where do plants get their energy? *From the sun.*
Plants produce energy from the sun by photosynthesis – they are called producers.
2. **What plants do you see around here?** Trees, shrubs and lots of grass.
3. **What do you think would like to eat the grass out here, what animal would think grass was tasty?** Bunnies! Bunnies are primary consumers...they only eat green plants.
4. **What do you think might like to eat the bunnies?** A bird of prey or a coyote maybe. Birds of prey and coyotes are secondary consumers.
The coyote lives a long life eating lots of bunnies and finally one day, the coyote is just so old and fat that he lays down to go to sleep and dies in his sleep.
5. **What happens to the coyote's body, wait to see if someone can tell you, if not, prompt with.....does it get eaten by anything or decompose?** It decomposes and is eaten away by bacteria. (Decomposers: bacteria, fungus, slugs and worms) These creatures all break down dead plant and animal material.

This is an example of a food chain and today we're going to be learning about other food chains and how food chains make food webs.

Another example of a food chain: Green plant is eaten by a giraffe, the giraffe is eaten by the lion, when the lion dies, bacteria decompose the lion's body.

Further

Some animals eat plants (herbivore), some animals eat other animals (carnivore), and some animals eat animals and plants (omnivore).

Time to play the Food Web Game