Understanding the Functions of the Food Web

Annotation
This is a hands on activity that is used to help students understand the ecosystem by highlighting the tropic levels, producers and consumers in a particular food web. The students will construct a food web, fill out an accumulated energy chart, and prepare a poem about the ecosystem.

Primary Learning Outcome
The students will understand the differences between consumers, secondary producers, and primary producers and their places in the food web. They will also understand how energy is accumulated and transfer in tropic levels of the food web.

Additional Learning Outcome
Students will be able to use their communication skills to construct a poem or rap to summarize the function of the food web and how organisms depend on one another to survive.

Assessed GPS Standards:
SB4: Students will assess the dependence of all organisms on one another and the flow of energy and matter within their ecosystem.

B. explain the flow of matter and energy through ecosystems by

1. Arranging components of a food chain according to energy flow

Websites
Title: *Biology Website Reference for Teachers and Students*
Annotation: Provides a variety of web resources that gives detailed information about ecology and also provides diagrams and examples of food chains and food webs.
http://www.kensbiorefs.com/ecology.html

Total Duration
60 minutes

Materials and equipment
Pictures of animals from food web (website/ attachment)
Scissors
Yarn
Tape
Worksheets

Procedures

Step 1. Constructing a Food Web

Students will construct a food web (see websites) by using yarn and tape. The students are to start with the producers (plants) at the bottom and then began to attach the primary consumers (mouse, grasshopper, caterpillar) to the plants that they eat. Then, they are to attach the secondary consumers (hawk, snake) to the primary consumers that they eat forming a web. This can be complicated and it may be hard to see the correct connections once the web is finish. Emphasize the importance of each group of students starting with the producers at the bottom and building up. Have the students to explain the food web to you.

Step 2: Questions

Have the students to answer the questions on the sheet and fill in the accumulated energy chart for question five. The dandelion has an estimated energy source of 2000 calories in it. When the caterpillar eats it, it only receives ten percent of the energy from the dandelion or 200 calories. The frog eats the caterpillar and only gets ten percent of that and so on. This would explain why each consumer in a higher tropic level has to eat more than the consumer below it.

Step 3: Poem Summary

This is the portion of the activity that allows the students to use their creative abilities and talents. The students will have 20 minutes to write a poem about the nutritional relationship of the food web and write it in the space provided. They must talk about what organisms eat each other and how they depend on each other to survive. They can put a beat behind the poem to make it more original and fun. You can make it a competition and have the class vote for the best poem.

Assessment

Each step should be evaluated. The students will be graded on their ability to construct the food web correctly, answer the questions, and present a scientifically sound and creative poem on the food web.