

Pre-Visit Activity:

Taking Energy and Passing It On

Objective: Students identify and discuss how energy travels through the food chain. Students will find examples of and describe the importance of every part of the food chain.

Materials: Paper and pencils (pens)

Background: Plants are the basis of the food chains. Energy from the sun is absorbed by plants and turned into sugar. Plants, in turn, are eaten by insects that are eaten by bigger insects or birds, and so on. If one type of animal or plant was taken away then the whole process would be affected. By being the food source for the world, plants are very important and if they failed to survive so would all the things that depend on them, including us.

Procedure: Lead a class discussion about food chains. Direct the discussion to the beginning of the food chain and from where the original energy comes (the energy of the sun is transformed into sugar by plants). Discuss the 10% rule. Plants use all of the energy they can from the sun, but a herbivore can not consume all of the energy the plants did. In fact, it takes 100 kcal (kilocalories) of plant material to support 10 kcal for a herbivore. The next animal on the food chain, a carnivore, also can not get all the energy the herbivore did, again getting only about 10% of it. So each time the energy is passed on there is a significant loss of energy. Have the students write a short story about how sunlight goes to a plant; then the sugar made by that plant is eaten by an animal or insect; then that creature is eaten and its energy is passed on and so on. Give the class maybe 10 to 15 minutes then ask them what would happen if the sun disappeared? Or if insects were all killed? If all the meat eaters were killed? Why is every part of the food chain important? How does extinction of the top predators alter the chain – how does that relate to population control? Challenge the students to think of any creature that is not somehow (directly or indirectly) dependent upon plants for food.

