Where the Locals Hang Out

Pre-Program Activity

Grades 9-12

Objective: Students will explain how energy passes through a food web and how the different components depend on each other.

Sunshine State Standards:

- **SC.912.L.17.6** Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.
- **SC.912.L.17.9** Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels.

Overview: Students demonstrate a food web by placing their hand on the shoulder of a student representing their food source.

Materials:

- Food Web Cards

Procedure:

- Give each student a food web card and have them tape it to their back.
- Explain that each consumer's goal is to link themselves to two food sources. When they find a student with the card of something that is a part of their animal's diet, they should place their hand on that student's shoulder. They should not link to another consumer until that consumer has linked to a food source. Once a consumer has been "eaten," it cannot link to any more food sources.
- Once everyone is connected, give students a minute to look around and see how they fit into the food web. Ask them to identify the producers, primary consumers, secondary consumers and tertiary consumers. Point out that that there are many more producers than tertiary consumers and discuss why this is always true in any food web. Then ask students which trophic level is missing from their food web (decomposers). Have them give some examples of decomposers and explain why their role is important to the food web. (Please see Wikipedia's Trophic Dynamics article for more information about trophic levels.)
- Have students demonstrate how a food web is affected by environmental changes by acting out the following scenarios:
    - An insecticide has been used to kill pests in the area. All insects are now "dead" and must leave the food web. Any other animals that are now left without a food source also "die" and leave the food web. *How does this affect the food web? What effect could the insecticide have on the food web if the poisoned insects were consumed?*
    - A section of forest has been cleared to make room for a new shopping center. All trees are cut down and must leave the food web. Any other animals that are now left without a food source also "die" and leave the food web. *How does this affect the food web? Could any animals adapt to this change? Could any animals benefit from this change?*
    - People begin feeding the local American Alligators. The alligators now associate people with food and have to be removed from the area. *What will happen to the populations of the animals normally consumed by American Alligators? How will this affect the rest of the food web?*

    - A nonnative species of anole is released into the area. It out-competes the Green Anole for food and is better at evading predators. *How does this affect the food web? What will happen to other animals that have a similar diet to that of the Green Anole?*
- Review how energy flows through a food web and discuss how small changes to the environment can have a big impact on the local food web.