Ecosystem

Character Concepts Taught: Responsibility and Caring

Grade Level: 5th-8th

Prerequisite: None

Time: 30-45 minutes

Number of Participants: 12-20

Number of Educators/Assistants: 1

Prep: None

Materials:
- Food Web Pictures
- Ball of yarn
- Whiteboard

Cognitive Objectives: Students will be able to define: wildlife, urban wildlife, ecosystems, and food webs. Students will be able to give specific ways they can help keep wildlife safe and protected.

Procedure:

Introduction:

- ♥ **Ask:** *What kinds of urban wildlife have you seen in Des Moines***?**
    - **Ex:** birds, raccoons, rats, mice, deer, owls, bats, insects, skunks, foxes, possums, butterflies, creepy-crawlies like spiders, ducks, squirrels, etc.
- ♥ Write the word **"Ecosystem"** on the board
    - **Ask:** *How would you define "Ecosystem".*
    - An interdependent relationship among all living resources, habitats and residents of an area. It includes plants, trees, animals, fish, birds, microorganisms, water, soil, and people. Everything that lives in an ecosystem is dependent on the other species and elements of that ecological community.
- ♥ Plants, animals, and energy (many other elements) have many important interactions within the environment in which they live.
- ♥ Animals depend on plants or other animals for food and may use different plants for cover (a home).
- ♥ **Ask**: *Can anyone think of an example of a relationship between an animal, plant, and an environmental factor such as sun, water, soil?* (Insects pollinate plants, sun helps plants make food/grow, animals and plants need water to survive, earthworms

dig through the soil bringing air and nutrients to plants roots, animals poop is great fertilizer for plants, mushrooms help to decay dead leaves, etc.).

Body:

1. Explain to the students that they are going to do an activity in which they will create a web of connections between many different living and non-living things found in an urban/city ecosystem (much like San Francisco!)
2. Pass out a Food Web card to each student and have them hang them around their neck. Each card will represent a living or non-living thing in a general ecosystem.
    a. Make sure you have a few of each category (Producer, Primary Consumer, Secondary Consumer, Tertiary Consumer, Quaternary Consumer, Decomposer, and Energy).
3. Have the two groups of students stand in two different circles, shoulder to shoulder. They should be fairly close to one another.
4. Have the students stand in a circle, shoulder to shoulder. They should be fairly close to one another.
5. Instruct students that you are going to give them a ball of yarn. Any student may start the web by holding on to one end of the ball of yarn and passing the ball to another member of the circle.
    a. However, before students toss the yarn, they must think about the connection between their food web card and that of the person whom they are passing the yarn too.
    b. When students pass the ball, they need to explain their connection.
    c. **Ex**: a student with a Mouse Card might throw to a person with a Blackberry Card and say, "The mouse eats the blackberry fruit". The next person holds onto the yarn and throws the ball to someone else explaining the connection. "The bush holds a home for an animal.
6. Each time the yarn is thrown, the person throwing it should hold onto a piece of the string so it eventually creates a web.
    a. Make sure the tension is tight enough that participants can feel the connectedness of all the different elements. (This will be important later!)
7. Continue passing the yarn until you have a very tight web with the string making LOTS of connections to each student.
8. Once there are a lot of connections, pull out the Human Card (the educator will be the human element).

9. Explain to the students, that humans have moved into the ecosystem! Human actions may now have an effect on the ecosystem!
10. Point to an animal/plant/element and give a human-related cause for that organism to be wiped out. You can use:
    a. Humans are building new homes! All the (***Species***) have been destroyed!
    b. Humans were using pesticides! All the (***Species***) have been wiped out!
    c. There is a lot of trash and waste! All the (***Species***) got sick and died.
    d. With all the cars now, many of the (***Species***) were hit by cars and their species died out.
    e. A lot of pollution caused all the **water** to become dirty! (***Species***) couldn't survive and died out.
    f. Humans built a dam! (***Species***) were trapped in the dam and didn't survive. OR the water was diverted and (***Species***) didn't have access to water. They died off.
    g. Many cats were released into the area (***Species***) were killed off by them.
    h. A lot of pollution in the soil caused the (***Decomposers***) to die off.
    i. Due to climate change, it got too hot/cold for (***Species***). They couldn't survive and were wiped out!
    j. Humans fed (***Species***) and they got sick! All of them were wiped out.
    k. Humans were afraid of (***Species***) and trapped, poached, or killed them. They are all gone now.
11. As each organism dies, the student who was targeted should give a tug to the web. Then any person who feels the tug should give a (small) tug back and raise their hand. This can continue as different people are affected by the original creature targeted.
12. Repeat this with different examples until the students begin to understand how an ecosystem is tightly connected and one species dying off directly affects many.

Extension:

- ♥ *Ask students what the world would be like if everyone always treated our ecosystem and wildlife and even each other with respect? How would the world be different?*

Speak Up

- ♥ *What could you say to a friend who says: "Who needs pigeons! They are dirty and just birds – they don't belong here!"*