**Observing Ecological Succession**

This lesson allows students to witness how ecological communities respond to environmental changes. Succession is often taught with forest growth as the primary example, but in this outdoor experiment, students will be observing communities of insects over time

**Primary Learning Outcome:**

Students will learn the definition of ecological succession and will be able to differentiate between primary and secondary succession.

• *How can environmental disturbances affect succession?*

• *Can environmental disturbance ever be beneficial to an ecosystem? If so, how?*

• *How predictable is succession in general?*

**Materials and Equipment:**

• Five or more pumpkins or large squash

• Digital camera (optional)

**Procedures:**

**Step One**

Cut the vegetables in half and place them outside, some in shaded areas, some in sunlight (if possible) and record preliminary observations, i.e., outdoor temperature, relative humidity, and rainfall. Students should also describe the initial condition of the squash, such as color, texture, and firmness.

**Step Two**

Observe the vegetables over a period of days or weeks. Record the number of different insect types present. Note any changes to the vegetable matter, and continue to record environmental data.

• *Describe the pioneer organism in this example.*

• *How is the insect community changing?*

• *What are some ways in which the insect communities could be interacting?*

• *Why do different groups of insects appear at different times?*

**Data Collection:**

Extensive field notes should be taken and kept in the laboratory notebook. The notebooks should be as thorough as possible describing the environmental conditions for each day, such as temperature, rainfall, and humidity. It may be useful for students to sketch the squash (or take digital photographs) so that changes over time can be documented.

**Analyisis:**

Describe how what you observed in the laboratory shows ecological succession. Is this primary or secondary succession? How do you know?

Design an experiment to test how the succession of organisms would differ under different environmental conditions. How do the results vary in warm weather vs. cool? Would the experiment be affected by unusually heavy rainfall or drought?