

Response to Changes in the Environment

4th Grade

Daniel F. Fink, Lashonda Orrell and Lila Levendoski

References:

- 2003-04 Columbus Public Schools Science SLC Guide

Benchmarks:

SLC 17: Students will describe how plants and animals react to changes in the environment.

Objectives:

Show that plants and animals must adapt to changes in their environment in order to survive and thrive.

Materials:

- Pictures of hares in both summer and winter fur
- green leaves and fallen and colored leaves
- flowers that are open and flowers that are closed [by keeping them in the dark so that they do not get exposed to the sunlight]

Initial Demonstration:

Present pictures of the snow shoe hares in the summer and the winter. Explain that this is the same hare. What is making this organism change?

Target Observations:

- The hare changed color from the summer to the winter.

Target Model:

- The hare changed colors in response to the winter.

Procedure:

Show pictures of the two morphs of the snowshoe hare. Show green and fallen and colored leaves. Show the open and the closed flowers. Have the students explain how the different organisms have changed and what the purpose of each adaptation. Talk about what the different organisms do to adapt to their changing environment. Talk about migration and hibernation as well as the other changes that organisms undergo.

Target Observations:

- Lots of animals and plants change with the seasons and with daylight and darkness

Target Revised Model:

- Animals and plants are able to adapt to changes in their environment in order to achieve their basic needs.

Procedure:

Ask the students what happens when the environment changes rapidly or “unnaturally.” Good examples would be a severe drought, flood, or turning a meadow/forest/wetland into a parking lot or a WalMart.

Talk about how drastic changes make it very hard for organisms to survive because such changes prevent them from meeting their basic needs.

Target Observations:

- Sometimes, the environment can change very rapidly, much more quickly than is normal, e.g. a bad storm, flooding, etc.

Target Revised Model:

- If the environment changes too rapidly or too drastically (particularly if humans do it), then the animals and the plants will have a difficult time meeting their basic needs.

Summary:

The students have been exposed to the fact that environments change- for example, the passing of the seasons or the shift from day to night. In order to meet their basic needs, plants and animals must also change- we call this type of change by a living organism an *adaptation*. If an organism’s environment changes too rapidly or drastically, it may not be able to adapt, and could be at risk of dying.