

**Project FOCUS
Best Lessons
THIRD GRADE**

Title of Lesson: Adaptations - Plant and Animal

Theme: Life Science

Unit Number: **Unit Title:** Habitats of Georgia

Performance Standard(s) Covered (enter code):

S3L1. Students will investigate the habitats of different organisms and the dependence of organisms on their habitat.

c. Identify features of animals that allow them to live and thrive in different regions of Georgia.

Enduring Standards (objectives of activity):

Habits of Mind

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

Content (key terms and topics covered):

Adapt
Adaptation
Characteristic
Survive
Habitat

Learning Activity (Description in Steps)

Abstract (limit 100 characters): Students will perform a plant adaptation activity and an animal adaptation activity.

Details:

Part I

This activity will take a few minutes at the beginning and end of a class period. Allow for at least 30 minutes of drying time (more if it is not a warm, sunny day). For this activity, wet the three paper towels in the sink (but do not completely soak them!). Place the first one out on the cookie sheet flat and mark it as A. Loosely roll another paper towel and mark it as B. Place it next to A on the cookie sheet. For the third paper towel, roll it loosely and then wrap it in wax paper. The wax paper should be covering the outside of the rolled paper towel. Label this one as C. Place all three paper towels in a sunny window. Ask the students to hypothesize which paper towel will be the wettest and which one will be the driest at the end of the class period.

At the end of the class period, return to the paper towels. The flat paper towel should be completely dry, the paper towel that is rolled without the wax paper will be damp, and the paper towel that is rolled in the wax paper should still be wet. Have the students write their observations and conclusions.

Explain to the students that the wax paper covering is similar to the waxy covering on plants' stems and leaves. Encourage them to think about the paper towel demonstration to hypothesize why it would be a good adaptation for a plant to have a round stem and a waxy coating.

Part II

This demonstration takes less than five minutes per group of students. Divided the class into groups of no larger than four or five. Each child should put on a plastic glove on one of their hands, and leave the other hand free. The hand with the glove should be placed into the bag with Crisco and then the child puts the bag with their hands still inside onto the top of the bucket of ice. The other hand should also be placed on top of the ice. Ask the students to write how each hand felt as their observation.

After everyone has had a chance, explain to the class that this models the protective nature of fat layers. You can give an example of a seal or a polar bear, which both have blubber that insulate very similarly to this Crisco. Have the students consider what kind of habitats animals with fat layers live in. Ask them what they think would happen to the animals if they had not adapted these fat layers.

Materials Needed (Type and Quantity):

- Plastic bags (gallon sized) - 4 to 5, depending on group size
- Plastic disposable gloves - 1 per student
- Large bowl or bucket of ice
- Lots of soap and water
- Large can of Crisco shortening
- Paper towels
- Water
- Wax paper
- Cookie sheet
- Optional: 2 thermometers

Notes and Tips (suggested changes, alternative methods, cautions):

- **Note:** This activity is split into two independent parts. They can be taught separately, but neither activity takes long enough to fill up an entire class period. Part II would best be done in small groups, with the rest of the class working on a different activity.
- **Tip:** It is a good idea to keep the ice as shallow as possible. The deeper the water, the more likely the students will plunge their hands in and accidentally fill up the baggies with water. After trying this experiment using a relatively full bucket, I even would recommend filling it up a maximum of three or four inches. I would also suggest trying it using a large tupperware container, a cake pan, or a sink (something with a flat bottom that is large enough for both hands to spread out on) and having the students press their palms down flat, instead of dipping their hands in fingers first.
- **Tip:** Prepare twice as many bags of Crisco as you think you will need. Some will inevitably spring leaks, fill with water, or lose a significant amount of "fat."

- Optional: To prove to skeptical students that it really is warmer inside the bag, you can take two thermometers and put one directly into the water and one into the bag of Crisco. Have the students hypothesize which temperature will be higher/lower.

Sources/References:

1) Originally submitted by Julie Stoudenmire, edited by Jessica Valle (2010)

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