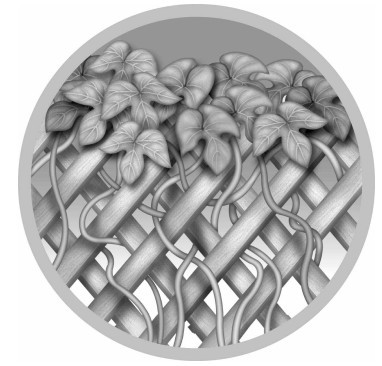


Amazing Adaptations: Pre-/Post-Visit Activities



TEACHER GUIDE

Thank you for registering for the GreenSchool Workshop *Amazing Adaptations*. During this workshop, your students will explore plant adaptations, and take an up-close look at some unusual plants like Venus' flytraps and plants with flowers that smell like rotting meat. The following selection of pre- and post-visit activity ideas and recommended resources is designed to support 3rd-5th grade classroom integration of the plant science concepts addressed in *Amazing Adaptations*.

PRE-VISIT ACTIVITY IDEAS

Adapting to a Different Biome

Students consider how living in a different biome might affect their everyday lives.

Materials:

- books and/or articles about biomes such as rain forests or deserts
- paper
- pencils

Discuss with your students the meaning of the word biome—a living community that is characterized by the geography and climate of the region. Different kinds of biomes have characteristic ranges of temperature and other seasonal changes.

- *How would you describe the biome we live in—how many seasons do we have?*
- *How cold/hot does it get in our biome over the course of the year?*
- *How much rainfall do we experience?*
- *How do the plants change over the course of the year?*

- *How do you think it might be different in a rain forest or desert biome?*

Distribute books and/or articles throughout the class. Direct students to read about one type of biome that is different than their own, and to look for information about the climate of that biome. Then, guide them through the process of writing a personal essay about how aspects of their everyday life might need to adapt—change—if they lived in that type of biome.

- *How would your life be different?*
- *Would you have to own/wear different clothes?*
- *What kinds of activities would be hard to do in this biome?*
- *What kinds of new things could you try if you lived in this biome?*

Encourage students to illustrate one aspect of their essay, and have students share their essays in small groups.

Camouflage Cover-Up

Students create an imaginary camouflaging environment to strengthen their understanding of the concept of adaptation.

Materials:

- magazines
- scissors
- glue
- drawing paper
- crayons/colored pencils/markers

Introduce the concept of camouflage—disguising something so that it blends in with its surrounding environment.

- *Can you think of some examples of camouflage in the natural world?*
- *Why would camouflage be a useful adaptation?*
- *What purpose do you think it serves?*

Generate a list of plants and animals that are adapted to camouflage with their environment.

Explain that although a camouflaged animal or plant usually blends in with its environment, today they are going to create an environment that blends in with a particular animal. Distribute magazines and scissors to

each table group, and direct students to cut out a picture of an animal they like—the more colorful the better.

When all students have selected an animal picture, guide them through the process of gluing it to a piece of drawing paper and designing an environment (including plants, etc.) around it that allows the animal to become camouflaged. Therefore, if the animal is a tiger the plants around it should feature orange and black stripes, and so on. This should make for an exciting and colorful class display!

POST-VISIT ACTIVITY IDEAS

How do Seedlings Adapt?

By introducing a disturbance to a growing seed, students observe how seeds can adapt to changing conditions.

Materials:

- small Ziploc bags
- moistened paper towels
- soaked kidney beans
- stapler
- permanent marker
- pebbles
- paper
- pencils

Distribute Ziploc bags, moistened paper towels, and kidney beans to each student. Guide students through the process of putting the paper towel inside the bag, and placing the beans between the paper towel and bag before sealing top of bag shut. Staple through the bag directly under each bean to keep them in place, and have students write their name on the bag with permanent marker.

Place the prepared bags in a sunny spot. Students should sketch and record observations of their seed every other day.

When the seeds have begun to grow roots, explain to the students that they are going to change the conditions of their growing seed in one of two ways. They can either change the orientation of their seed by turning the baggie upside down during the rest of the growth process, or they can introduce an obstruction by placing one to two pebbles amongst the roots of the growing seed.

• *How do you think the seed will adapt to each type of change? Why?*

After making their choice and introducing the change, have students produce a written description of what they hypothesize will happen.

Over the next few weeks, students should continue to sketch and record observations of their growing seed every other day.

• *How did your seed adapt?*

• *Was this what you thought would happen? Why or why not?*

Encourage students to compare their results with other students that chose the same change.

Adapt Yourself!

Students create imaginative adaptations that could help them do something they have always wanted to do.

Materials:

- paper
- pencils
- colored pencils/crayons/markers

Recap some of the concepts learned during your *Amazing Adaptations* GreenSchool Workshop:

- *What are some of the plant adaptations that you learned about?*
- *How did these adaptations help the plants to live in a certain habitat or environmental condition?*
- *Did any of those adaptations allow the plant to do something it couldn't otherwise?*

You might need to remind them about carnivorous plants' ability to trap insects, and/or the ability of pleated cacti to expand and contract for water storage and usage.

Encourage students to brainstorm something physical they would like to be able to do, or something they would like to be able to do better/faster, etc. Explain that their challenge is to design an adaptation for their body that would allow them to achieve this goal. Distribute drawing materials for this task, and have them write a description of how this adaptation works.

RECOMMENDED TEACHER RESOURCES

Capon, Brian. *Plant Survival: Adapting to a Hostile World.* Portland, Ore.: Timber Press, 1994.

Parrella, Deborah. *Project Seasons.* Shelburne, Vt.: Shelburne Farms, 1995.

RECOMMENDED BOOKS FOR CHILDREN

Goodman, Susan E. *Seeds, Stems, and Stamens: The Ways Plants Fit Into Their World.* Brookfield, Conn.: The Millbrook Press, 2001.

Pollock, Steve. *Ecology.* New York: DK Publishing, 2005.

For more information, call the Manager of School Programs at 718.817.8124.