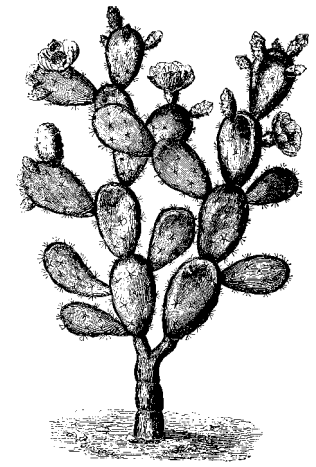


# *Survival of the Spiniest:* Pre-/Post-Visit Activities



## TEACHER GUIDE

Thank you for registering for the GreenSchool Workshop *Survival of the Spiniest*. During this workshop, your students will discover the amazing ways desert plants have adapted to their harsh habitats. 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 *Survival of the Spiniest*.

### PRE-VISIT ACTIVITY IDEAS

#### What is a Desert?

Students use discussion and drawing to explore their existing knowledge and understanding about deserts.

#### Materials:

- paper
- writing tools
- drawing tools

Either in small groups or as a whole class, tell students to brainstorm ideas about what they think deserts are like. Encourage them to think of how it might feel, smell, and look in a desert, and record their ideas on the board.

Then give students time to draw what they think a desert might look like, including the plants and animals they think might be found in a desert. Include these works of art in a class gallery, and/or bring them to share during your GreenSchool Workshop!

#### Do Plants Need Water?

Students experiment to see if plants really need water to grow.

#### Materials:

- dried lima beans
- small paper cups
- soil
- water
- rulers
- hand lenses
- paper
- pencils

Distribute two cups and two lima beans to each student. They should poke a few holes in the bottom of their cups, write their name on each cup, and label one “water.” Direct the students to fill their cups with moistened soil and to make a small hole in the soil with their finger before planting a lima bean in each cup. After explaining that they are experimenting to see if plants really need water, tell your students to water the planting in the cup marked “water.”

Your students should place their planted seeds in a sunny spot. Allocate time every other day over a two week period to add water to the cup marked “water,” and to sketch the progress of both plantings. The students can also observe closely with hand lenses, or keep track of growth with a ruler.

After two weeks of observation, ask students to share their findings:

- Which seed sprouted faster?*
- Which seed grew taller, the one with water, or the one without?*
- Why do you think this is?*
- How could you test this hypothesis?*

Briefly discuss characteristics of deserts with your class, explaining that many plants and animals live in the desert.

- How do you think desert plants live without water?*
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## POST-VISIT ACTIVITY IDEAS

### Succulent Investigation

Students deepen their understanding about the water retention of succulent plants by investigating a slice of an aloe plant.

#### Materials:

- 1 slice of aloe leaf per student
- hand lenses
- drawing paper
- pencils

Review with your students the primary challenge facing desert plants—acquiring and retaining water—and the main structural adaptations evolved by desert plants to cope with this challenge (including thick outer coverings, spines, and expandable ribs). You may wish to remind them of the term *succulent*, which describes those desert plants that store water in their fleshy stems. Explain that aloe is a common succulent plant that is used by many people all over the world, and that they are going to investigate the succulent structure of aloe.

Distribute aloe slice and hand lens to each student. Give the class 10-15 minutes to carefully sketch the slice in detail, before asking the group to come together to discuss what they noticed. Have leaves of a non-succulent plant—such as lettuce—available for comparison.

### Invent a Desert Plant

Students extend their understanding of desert plant adaptations by designing their own plant.

#### Materials:

- drawing paper
- writing paper
- pencils
- crayons
- color pencils
- markers

After reviewing basic plant parts, and information about deserts learned in the *Survival of the Spiniest* GreenSchool workshop with your students, explain that they are going to invent their own desert plant. Give them the following questions as guidelines for them to write about and draw their plant:

- *Where in the desert does your plant grow?*
- *How does your plant deal with high amounts of sunlight?*
- *How does your plant get the water it needs to survive?*
- *How does your plant deal with long periods of time between rainfalls?*
- *How does your plant get the nutrients it needs to survive?*
- *Does your plant need to defend itself? If so, how does it do this?*
- *How does your plant deal with strong winds?*

## RECOMMENDED TEACHER RESOURCES

**Burnie, David.** *Plant*. New York: Dorling Kindersley, 2000 (2nd ed.).

**Silver, Donald M.** *Cactus Desert (One Small Square)*. New York: W.H. Freeman and Company, 1995.

## RECOMMENDED BOOKS FOR CHILDREN

**Guiberson, Brenda Z.** *Cactus Hotel*. New York: Henry Holt and Company, 1991.

**Johnston, Tony.** *Desert Song*. San Francisco: Sierra Club Books for Children, 2000.

**Lesser, Carolyn.** *Storm on the Desert*. San Diego: Harcourt Brace & Company, 1997.

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