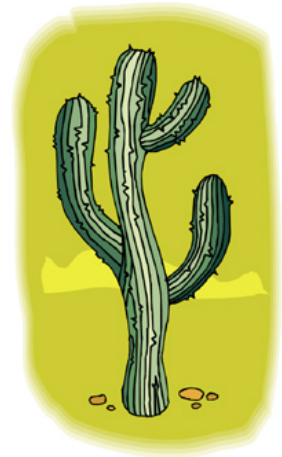


**The Toughest Thing on Earth!**  
**Adaptations of Desert Plants**  
**Resource Guide**  
**Grades K-4**

**Using What we Already Know:**

Students will choose two of the following questions to answer. Students should write 2-3 complete sentences to answer 2 of the three following questions, and be prepared to share responses with the class.

1. What is a desert like? Why do you think it be difficult for plants to live there?
2. Would you rather be a plant or an animal living in the desert? Explain your answer.



**Student Information:**

Desert plants have had to develop extraordinary ways to survive in the harsh and unforgiving environment. For instance, the cacti and other plants have wax-like coatings on their green stems or leaves to slow evaporation and save water. Grasses have dense, shallow root systems that intercept water as soon as a rain falls. The desert shrubs may have small leaves to slow evaporation and save water, and they may have root systems that reach deep for underground moisture. Some desert plants produce hard-coated seeds that might lie in dry soil for years, waiting for the right combination of conditions necessary for them to sprout.



**Vocabulary:**

**root** – supports the plant and brings water and nutrients to the plant from the soil

**fibrous root system** – made up of many thin, branched roots

**taproot system** – one large root with small thin roots growing from it

**stomates** – tiny holes in a leaf through which carbon dioxide enters plants, and oxygen and water leave plants

**transpiration** – in plants, loss of water to the air

**photosynthesis** – food-making process in plants

**leaf** – part of a plant in which photosynthesis occurs

**desert** – arid/dry region with little or no vegetation

## Student Activities

### Describe adaptations in your own words.

1. How are the two desert plants below alike? How are they different?
2. Discuss possible adaptations of each plant with classmates and the teacher.



Senita or "old man" cactus blooms from April into August. Organ Pipe and Senita Cactus are found nowhere else in the United States.



Desert shrubs typically have small leaves, protective thorns, multiple branches, disagreeable smells and tastes, and extensive root systems, all adaptations to the arid environment.

Using the pictures below, compare and contrast or describe adaptations used for survival by:

Century plant



Joshua Tree



## **Create a plant**

Work individually or in groups and use what you have learned today to create a plant that can survive in the desert. Draw and label your plant. Present your plant to the class. Include:

- Plant's name
- Description of where it lives (for example: in isolation or around other plants, on flat or uneven land etc.)
- Structures that allow it to get water and nutrients
- Structures that allow it to conduct photosynthesis
- Structures that allow it to reproduce
- Include any other details such as color, size, etc.

## **Teacher Websites:**

Along the Way transcript on adaptation of desert plants

<http://www.alongtheway.org/plant/plant.html>

Examples of desert plants and their specific adaptations

[http://www.desertusa.com/food\\_chain\\_k12/kids\\_3.html](http://www.desertusa.com/food_chain_k12/kids_3.html)

More pictures of desert plants

<http://www.desertusa.com/flora.html>