

THE GIANT SAGUARO

Introduces students to the natural history of saguaro. Adaptations and plant/animal interactions are stressed.

ARIZONA ACADEMIC STANDARDS

SC01-S4C3-03,
SC03-S4C2-02,
SC03-S4C4-01,
SC04-S4C1-02

OBJECTIVES

Students should:

- list desert adaptations of the saguaro.
- describe ways animals and people use the saguaro.

MATERIALS

- copy of *Handouts 3 and 3A* for each student

VOCABULARY

- adaptation
- drought
- pollination
- succulence

GETTING READY

Make a copy of *Handouts 3 and 3A* for each student.

DOING THE ACTIVITY

SETTING THE STAGE

- 1) Ask students to share any of their observations or stories about saguaros. Ask if any students have ever tasted saguaro syrup.

READING AND DISCUSSION

- 1) Ask students to read *The Giant Saguaro*.
- 2) Discuss the reading, introducing new vocabulary.
4. Mention that all saguaros are protected in the Sonoran Desert and it is illegal to remove them (alive or dead) without a

permit. Tell students that the saguaro is found only in the Sonoran Desert.

SAGUARO SCRAMBLE

- 1) Ask students to complete the *Saguaro Scramble*.
- 2) Review the answers.

ANSWER KEY TO SAGUARO SCRAMBLE:

1. Sonoran
2. nests
3. birds
4. bats
5. fruit, seeds
6. areoles
7. homes

An area in which a plant or animal lives is called its HABITAT.

EXTENSION ACTIVITIES

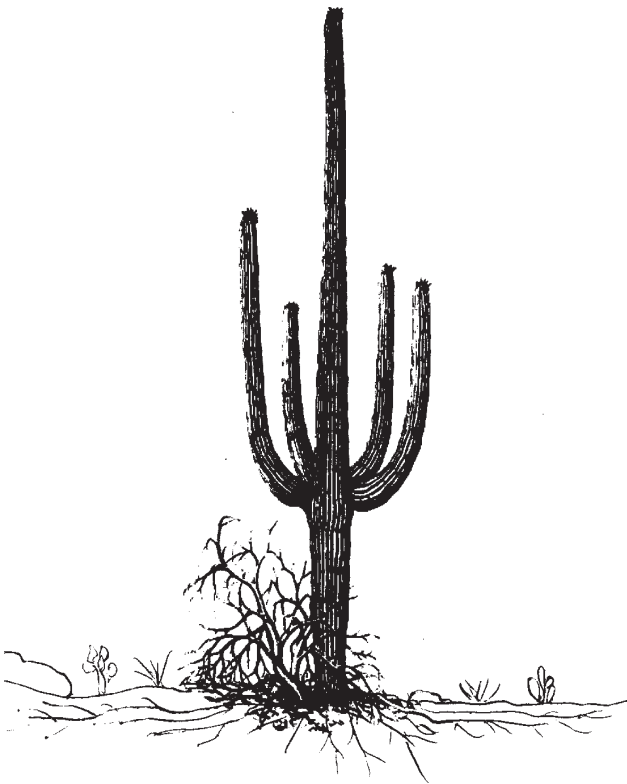
Have students complete extension activities listed at the bottom of *Handout 3A*. Share their pictures and stories with the class.



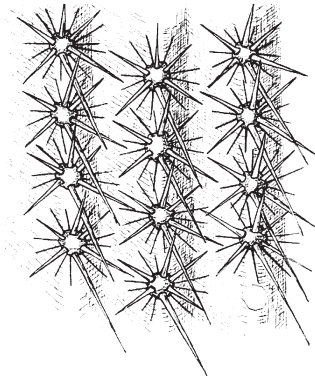
The Giant Saguaro

The saguaro is one of the largest cacti in the Sonoran Desert. The saguaro grows very slowly. When it is ten years old, it may be less than two inches tall! It may take 50-80 years for it to grow ten feet tall and to grow arms. The tallest saguaros may grow as high as 50 feet. This giant may weigh as much as seven tons and live more than 150 years.

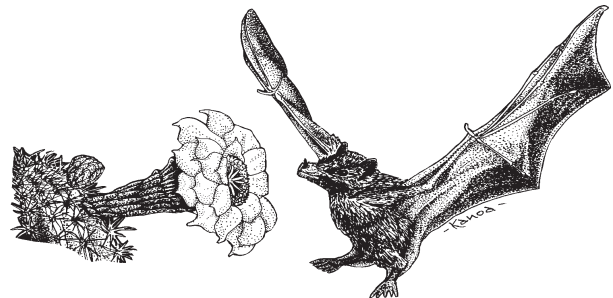
The saguaro has many shallow roots that spread out from its base. Whenever it rains, these roots quickly suck up water and store it in its spongy stem tissue. **Succulence** is an **adaptation** that helps cacti survive long periods without rain. After the summer monsoons, the saguaro looks fat and swollen. This is because it is full of stored water. A saguaro may be 75% - 80% water. During **droughts** the saguaro looks thinner. This is because it is using up the stored water. With its stored water, it can live for several years without rain.



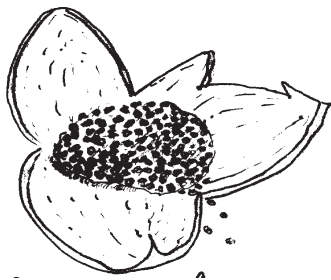
A saguaro has other adaptations that help it live in the desert. It is covered with a thick, waxy “skin” that helps seal in water. Neat rows of long spines run up and down its stem. These spines grow out of little bumps called “aeroles” that are found along the edges of the folds. Spines help shade young saguaros from the hot sun. Spines also help protect cacti from animals, but some animals don’t mind the spines. Did you know javelina eat prickly pear cactus pads, spines and all?



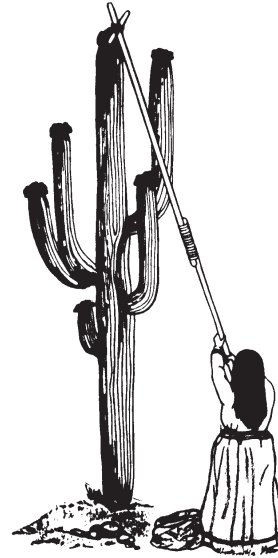
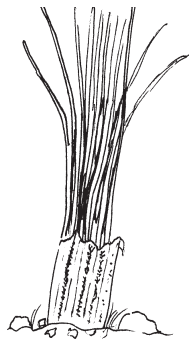
The white blossom of the saguaro is the state flower of Arizona. In April and May the flowers appear at the tips of the arms. They open at night and close by the afternoon of the next day. The yellow centers are full of nectar and pollen that attracts white-winged doves, lesser long-nosed bats and some insects. These animals drink the nectar and eat some of the pollen. As they move from one flower to another, they deposit pollen grains attached to their bodies. This is how a saguaro flower is **pollinated**.



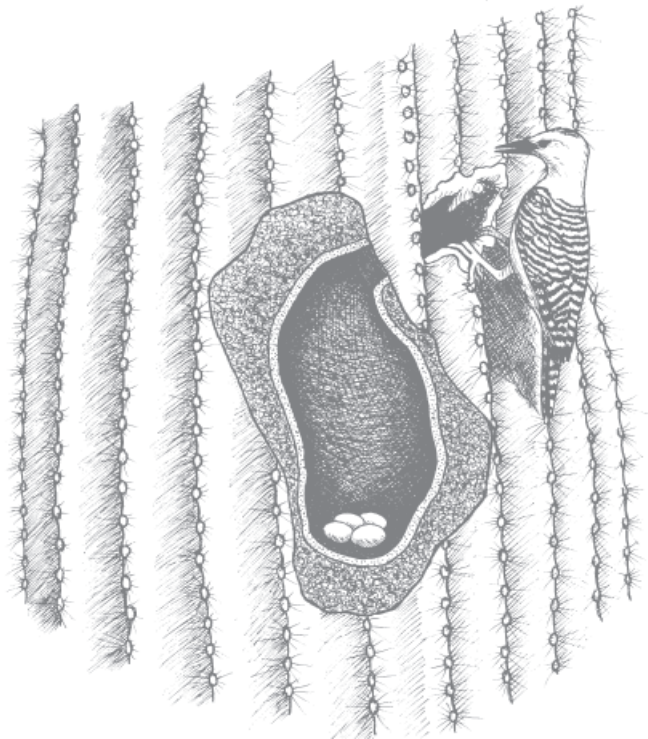
After **pollination**, the flower dies and fruit forms. At first it looks like a plump, green thumb. When the fruit is ripe, it is red on the inside and very sweet. Each fruit may have up to 2,000 tiny black seeds. In the summer the fruit opens and the seeds scatter. Some people mistake this open, red fruit for a flower. Many desert creatures depend on the fruit and seeds for food. When the fruit falls to the ground, animals such as coyotes, kangaroo rats, ants and ground squirrels have a feast. When animals eat the sweet fruits, some of the seeds are not digested. These seeds pass through the animals' bodies and come out the other end in their droppings. The seeds are thus spread throughout the desert, fertilized, and ready to grow. Making juicy, tasty fruits is an adaptation to help get the seeds moved around by animals.



People eat saguaro fruits too. The Tohono O'odham (Papago), Hia c-ed O'odham (Sand Papago), Seri, and other desert people have gathered saguaro fruits for hundreds of years. They use poles made from saguaro ribs to knock off the fruit. They eat the fruit raw or dry it, cook it, and make it into jam or syrup. The syrup can also be used to make a ceremonial wine. The dried seeds can be ground into flour. The fruit and seeds of the saguaro are very healthy to eat.



Many animals use the saguaro for shelter. The Gila woodpecker and common flicker make holes in the saguaros and build their nests. After raising their young in the nest cavity, they abandon the hole. When they leave, other birds, such as the elf owl or American kestrel move in. Red-tailed hawks build their nests where the stems and arms meet and sometimes great horned owls take over these nests. Even after it dies and falls to the ground, some animals including scorpions, will move in. The saguaro is like a big desert apartment house!

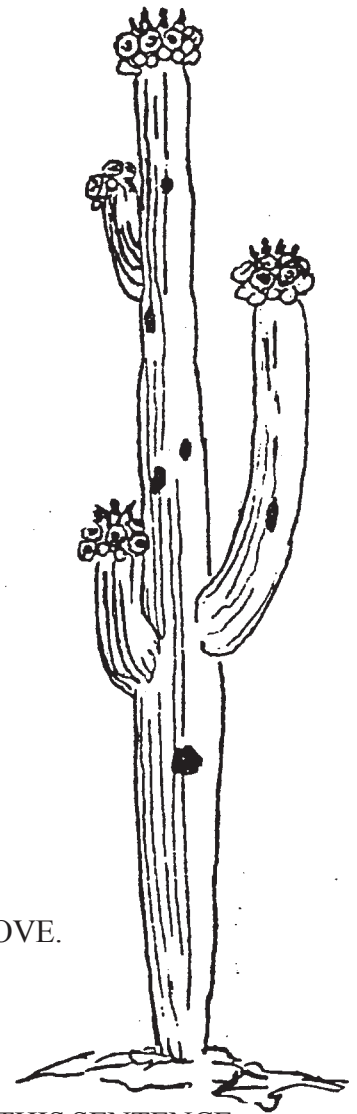


A. Saguaro Scramble

Fill in the blanks. Choose the correct word from the list below.

fruit birds homes nests Sonoran bats areoles seeds

1. The saguaro grows only in the _____ Desert.
2. Woodpeckers peck holes in the saguaro stem. In these cavities they build their _____.
3. Abandoned cavities are used by other kinds of _____.
4. Birds and _____ help pollinate the flowers.
5. Many animals eat the red, juicy _____ and shiny black _____.
6. Cactus spines grow from special places on the stem. These are called _____.
7. Dead saguaros are _____ for many small animals.



NOW, WRITE ALL THE LETTERS THAT APPEAR IN THE SQUARES ABOVE.

UNSCRAMBLE THE LETTERS TO MAKE A WORD THAT COMPLETES THIS SENTENCE.

An area in which a plant or animal lives is called its _____.

B. Extension Activities

1. Pretend you are a saguaro. Write a story about a day or year in your life.
2. Draw a picture of a saguaro in the desert. Add desert animals and other plants to your picture.