

LIFE CYCLE OF THE SAGUARO

Students make saguaro life cycle books to illustrate the growth and development of a saguaro from seed to death.



ARIZONA SCIENCE STANDARDS
SC03-S4C2-02

OBJECTIVES

Students should:

- Trace the life cycle of a saguaro.
- Identify stages in the life cycle.
- Record life cycle stages in sequence.

BACKGROUND

When you see a full-grown saguaro with its many arms, you are seeing a remarkable natural accomplishment. Out of the 40 million seeds that it will produce in its lifetime, only one of those seeds will likely develop into a plant that outlives its parent. Predation pressure, drought, and temperature extremes including winter cold eliminate most saguaro seedlings before they reach maturity. Most survivors get their start beneath a nurse tree or other plants that protect them from extreme heat and cold or from being eaten or trampled. The steps to adulthood are slow. A ten-year-old saguaro may be less than two inches tall. By 50-80 years of age, most saguaros reach a height of 10 feet and begin to grow arms. The tallest and oldest saguaros may grow as high as 50 feet, weigh seven tons, and live more than 150 years!

GETTING READY

Make a copy *Student Handout - Life Cycle of the Saguaro* for each student and for your own book. You may wish to copy the cards onto card stock to give a little more substance to the pages. Assemble the materials as listed in the left margin of this page. Make your own sample of the Saguaro Life Cycle Book to demonstrate to the students (see instructions under *Making Saguaro Life Cycle Books* below.)

DOING THE ACTIVITY

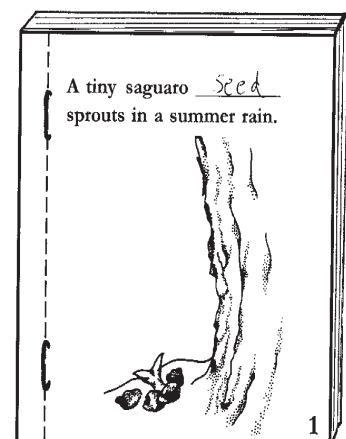
SETTING THE STAGE

- 1) Ask the students, "How many of you have seen a really tall saguaro? How tall do you think the tallest saguaro can be?" (They will have many guesses, but the tallest measured was 50 feet, or about the height of a 5 story building.)

- 2) Ask, "How long do you think it takes for a saguaro to grow as tall as the ceiling?" (They can guess anywhere from 50-80 years and be correct.) Tell the students that to become a full grown adult, saguaros need to have a lot of time and just the right conditions. Explain that they are each going to make a book to show the life cycle of the saguaro - how the saguaro grows and changes throughout its life, and how it eventually dies.

MAKING SAGUARO LIFE CYCLE BOOKS

- 1) Demonstrate your sample book and its construction (as outlined below.) Pass out *Student Handout - Life Cycle of the Saguaro* to each student. Give students the following instructions:
 1. Color the pictures before cutting and assembling the book.
 2. Cut out the six life cycle cards along the solid lines. The dashed lines on the left indicate the margin of the book.
 3. Evenly stack the book pages in order from 1 to 6, with page one on top.
 4. Staple the pages together along the left margin to the left of the dotted line.
 5. Turn the book's pages and watch the saguaro life cycle unfold!



LIFE CYCLE OF THE SAGUARO



MATERIALS

- A copy of *Student Handout - Life Cycle of the Saguaro* for each student
- Scissors
- Stapler
- Markers or crayons
- Blackboard
- Cardstock (optional)
- Glue (optional)

VOCABULARY

Seedling

FILLING IN THE DETAILS

- 1) Tell the students that, although they can see the saguaro grow up, their books are missing important information about its life cycle.
- 2) Write the following words and numbers on the chalkboard and explain that they need to write them in the blank places on the different pages of their books.

150, 30, 100, 50
flowers, fruits, dies, seed, tree, arms

- 3) Have them start with the numbers and put them in the order of the years they represent. Then have them fill in the words. Go through each page as a group and guide their responses. Discuss each answer as a group.

ANSWERS

Page 1: seed
Page 2: tree
Page 3: 30
Page 4: 50, arms, flowers
Page 5: 100, fruits
Page 6: 150, dies

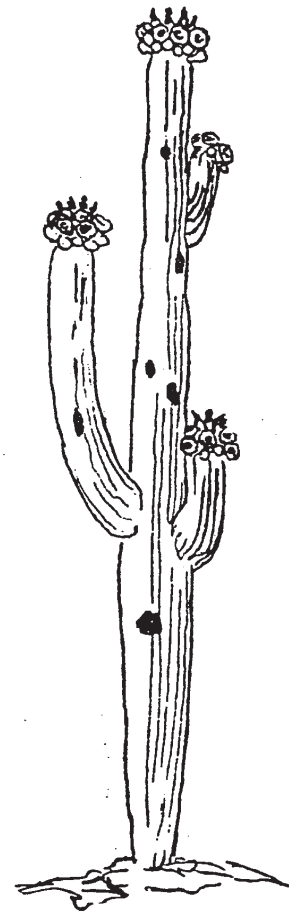
DISCUSSION

- 1) When they have completed their books, ask them questions about the different stages of the life cycle presented in each page.
 - “How does a saguaro begin its life?” (as a seed)
 - “Where does that seed come from?” (from the fruits of a parent saguaro)
 - “What happens to the juicy fruits and their seeds?” (Animals eat them and drop them.)
 - “How old does a saguaro need to be before it grows arms and flowers?” (at least 50)

- “How old can a saguaro live to be?” (150 years)
- “Where do baby saguaros seem to grow well?” (under a tree)
- “What do you think might be a challenge for a baby saguaro?” (getting enough water, staying out of intense sunlight, avoiding being eaten, freezing in the winter)
- “How does a nurse tree help the saguaro face these challenges?” (protects them from temperature extremes, drying sunlight, and animals)

EXTENSION

Make flip books of the growth of a saguaro, drawing slight changes from page to page. Flip through the pages and watch the life cycle of the saguaro unfold like a movie.



STUDENT HANDOUT - LIFE CYCLE OF THE SAGUARO

A tiny saguaro _____
sprouts in a summer rain.



1

15 YEARS

Safe under a nurse _____,
the saguaro grows slowly.



2

_____ YEARS

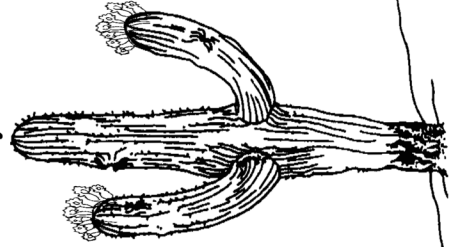
The saguaro is now only 2 feet
tall.



3

_____ YEARS

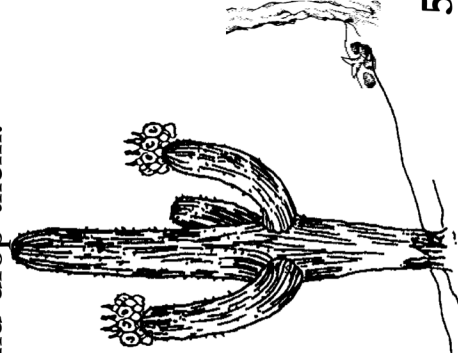
Now the saguaro grows
_____. On the tips of the
arms and stem, _____
grow each May.



4

_____ YEARS

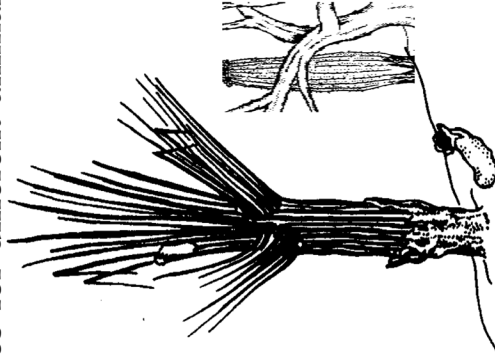
By this time, the saguaro's
flowers have made many
_____ and seeds. Animals
eat them and drop them.



5

_____ YEARS

Now the giant cactus _____
and rots, making food and
homes for different animals.



6