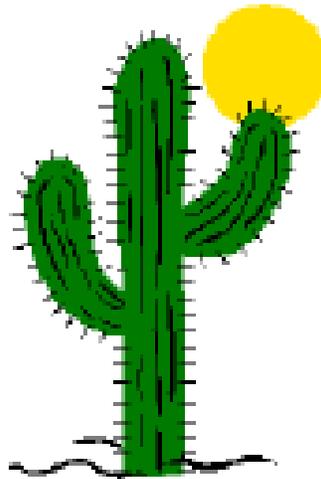


Around One Cactus: Owls, Bats and Leaping Rats*

**Great Ideas,
Super Stuff and
Loads of Cool Projects**



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Around One Cactus: Owls, Bats and Leaping Rats

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Summary:

This dynamically illustrated book takes readers into the heart of the Sonoran Desert to watch the “happenings” that take place in and around a single Saguaro cactus. The young boy in the story doesn’t think there is much going on at the cactus and so, near the end of the day, he leaves. But, that’s when all the activity begins. Rattlesnakes, elf owls, kangaroo rats, scorpions and other denizens of the desert come out to “play and prey.” This is an active community – one not often seen by visitors – but one that has lots of excitement and lots to discover. According to one reviewer, “the creative [text]...creates an almost ‘interactive’ feeling between reader and book.”

Critical Thinking Questions:

1. Which of the creatures did you enjoy the most?
2. Which animal would you like to learn more about?
3. How did the illustrations help you enjoy the story?
4. Are you similar to any of the creatures in this book?
5. What are some other animals that live in the desert?
6. If you could ask the author one question, what would it be?

Activities:

1. A terrarium is a miniature controlled environment containing plants in an artificial situation that can closely imitate the natural living conditions of desert organisms. Carefully set up, a desert terrarium can endure for long periods of time and provide students with a close-up look of this "sample" of nature.

You'll need:

A glass container (A 10-gallon aquarium purchased at a pet store or garage sale or a large pickle jar can be used.)

Small pebbles, gravel, and coarse sand
potting soil

plants, rocks, pieces of wood

- a. Be sure the container is thoroughly cleansed (be sure there is no soap or detergent residue left behind).
- b. Spread a one-inch layer of gravel over the bottom of the aquarium. Combine three parts fine sand with one part potting soil. Spread this mixture over the base layer of gravel. Set the soil mixture about 3” deep towards the back of the terrarium and slightly shallower in front.
- c. Decorate with rocks and small branches.
- d. Sprinkle this mixture lightly with water. It’s better to underwater than overwater – too much water is deadly for most desert plants. Stick your finger into the soil – if its damp don’t add water

- e. Place several varieties of cactus into the terrarium (it might be a good idea to wear gloves). Most nurseries carry cacti, or they can be ordered through the mail from selected seed companies and mail-order nursery houses. The following varieties are suggested:

| | |
|-------------------|-----------------------|
| Gasteria | Aloe |
| Sedum | Astrophytum |
| Crassula | Adromischus |
| Lithops | Rebutia senilis |
| Pincushion cactus | Opunita |
| Fishhook cactus | Night-blooming cereus |

- f. When planting the cacti, be sure that the roots are covered completely by the sandy mixture.
- g. The desert terrarium can be left in the sun and does not need a glass cover. If you cannot leave it in the sun, rig a lamp over the terrarium. Put a 60-watt light bulb in the lamp and leave it on for about 10 hours every day.
2. Students may enjoy creating their own "Desert Dictionary." Invite them to form small groups - with each group responsible for gathering words and definitions for several letters of the alphabet. For example:

| | |
|------------|---|
| A - | Arid Arizona Apache Indians |
| B - | Beetles Bats |
| C - | Cactus California Poppy |
| D - | Desertification Diamondback rattlesnake Dunes |
| E - | Endangered environment |
| F - | Fox Flowers |

3. Invite students to write to one or more of the following national parks and request information about the flora and fauna that inhabit those special regions. When the brochures, flyers, leaflets, and descriptive information arrives invite students to assemble it into an attractive display in the classroom or a school display case.

Death Valley National Park
P.O. Box 579
Death Valley, CA 92328

Joshua Tree National Park
74485 National Park Drive
Twentynine Palms, CA 92277

Great Basin National Park
Baker, NV 89311

Big Bend National Park
Big Bend, TX 79834

4. Students may enjoy creating a large wall mural about the four major desert areas in the United States. Assign each of four separate groups one of those desert area (Sonoran, Mojave, Chihuahuan, Great Basin) and invite them to do the necessary research. Completed murals can be posted in the classroom or the school library. Interested students may also wish to do some comparative murals on U.S. deserts vs. deserts from other locations around the world (e.g. Atacama, Sahara, etc.).
5. Deserts get less than 10 inches of rain a year. Invite students to complete the chart below – filling in the amount of rain each of these desert towns receives in a year. They may wish to consult books or relevant web sites.

| | |
|-------------------------|------------|
| Mojave, CA | |
| Phoenix, AZ | 6.5 inches |
| Needles, CA | |
| Tucson, AZ | |
| Palm Springs, CA | |
| Las Vegas, NV | 4 inches |
| El Centro, CA | |
| (your home town) | |

6. Invite students to read two other books by the author of *Around One Cactus: Owls, Bats and Leaping Rats*. Here they are: *Under One Rock: Bugs, Slugs and Other Ughs* (Dawn Publications, 2001) and *In One Tidepool: Crabs, Snails and Salty Tails* (Dawn Publications, 2002). How are all three of these books similar?
7. After students have had an opportunity to read other books about the desert, encourage them to create a sequel to *Around One Cactus*. What animals would they like to include in an “extension” of the *Around One Cactus* story? Invite students to create and post their creations throughout the classroom.
8. Students may be interested in obtaining travel and tourist information about Arizona. They can log on to <http://www.arizonatourism.com/> and obtain a wide variety of resources. Invite them to share these resources with others.
9. Invite each student to select one of the creatures from the book. Invite students to read the “Field Notes” pertaining to that animal in addition to conducting more library research. Afterwards, invite each student to create a series of diary entries told from the perspective of that animal. For example, “A Day in the Life of a Rattlesnake” or “A Day in the Life of a Gila Monster.”
10. Using Styrofoam© create a large replica of a saguaro cactus. Invite students to break 100 toothpicks in half and stick each of the broken pieces into the model cactus. You may wish to spray paint the creation and let it dry before placing it in a prominent position in the classroom. Students can arrange models (see #32

- below) around the cactus. Models can include creatures mentioned in the story as well as others students learn about during outside reading assignments.
11. Invite students to participate in a game of “Charades.” Each student can select an appropriate desert animal and demonstrate its movements for others to guess.
 12. Talk with students about some of the “Fantastic Facts” included in the back of the book. Which ones did they find most amazing? Invite students to assemble their own collection of “Desert Fantastic Facts” or “Cactus Fantastic Facts.”
 13. Invite students to log onto www.desertusa.com and select one of the animals profiled on this site. Encourage students to work in teams of 2-3 to assemble and collect information about their designated animals for presentation to the class.
 14. Invite youngsters to create a “Wanted” poster for some of the more dangerous creatures (rattlesnake, scorpions) in the book. What information should be included on each poster? What are some of the “vital statistics” that students would want to share with others via their posters? If possible, obtain one or more “Wanted” posters from your local post office and use them as models for your students’ posters.
 15. The following chart contains a list of each of the animals in the book along with a descriptive adjective. Encourage students to gather additional information about each animal and to add two more adjectives for each one. Students may wish to work in teams and compare their lists when completed.

| ANIMAL | ADJECTIVE(S) |
|---------------|---------------------|
| Kangaroo Rat | Hairy soles, |
| Elf Owl | Yellow eyes, |
| Long-Nose Bat | Night flyer, |
| Rattlesnake | Pit viper, |
| Scorpions | Poor eyesight, |
| Kit Fox | Long nose, |
| Gila Monster | Black spots, |

16. Divide students into two separate groups. Assign one group the task of writing a prequel to the story; the other group the task of writing a sequel. Encourage students to discuss the various types of actions and/or creatures they could include in their additions.
17. Invite students to put clean, dry sandbox sand into a rectangular cake pan (about 9” X 12” X 2”). Fill the cake pan about halfway up with sand. Gently shake the pan until the sand is fairly smooth in the pan. Provide one or two students each with a drinking straw. Ask the students to gently blow across the surface of the sand to create sand dunes, sand patterns and other shapes (you may wish to provide students with photographs of sand dunes or sand patterns from a magazine or web site). Invite students to discuss the various patterns that may be found in the desert – particularly those created by wind blowing over the sand for extended periods of time. Students may wish to place a few rocks in the pan to see how those objects might affect the patterns in the sand.

18. Invite students to write the names of each of the animals in *Around One Cactus* on an individual 3 X 5 index card. Ask students to research other Sonoran desert animals and to write each of those animals on a separate index card. Then, invite students to work in pairs (additional research may also be necessary) to sort all the cards into the following categories:
 - a. Diurnal vs. nocturnal
 - b. Birds vs. mammals vs. reptiles
 - c. Herbivores vs. carnivores vs. omnivores

Students may also wish to place selected cards into a line representing a Sonoran desert food chain. For example: elf owl – kangaroo rat – rattlesnake.
19. Students may wish to assemble a “Cactus Dictionary.” Invite them to research other types of cacti from across the United States or from around the world. Ask students to include an illustration or photograph of each cactus on one page of the dictionary along with relevant information about geographical range, dimensions, etc.
20. Invite students to obtain different types of cactus plants from a nearby nursery or garden center. Ask students to arrange the cacti in an attractive display – a single cactus garden or several smaller groupings of cacti arranged around the classroom. Encourage students to research and assemble a guidebook on how to take care of cacti. Students may also wish to prepare a PowerPoint© presentation for other students on the various types of cacti found in the U.S. or throughout the world.
21. Invite students to create posters or advertisements to attract other students to this book. What information, data or illustrations should be included? Students may wish to hang their illustrations or posters throughout the school or in the library.
22. Invite students to survey other students who have read this book. Ask them to make lists of all the creatures in the book and question others about who their favorite animals are. They can then tabulate the results and present them in the form of bar graphs, pie charts or line graphs.
23. Invite students to each select one of the animals featured in the book. Invite each child to demonstrate the movement of that creature in a designated area. For example, for a rattlesnake, students can slither across the floor on their bellies; for a scorpion they can scuttle across the floor on the hands and feet. Provide opportunities for students to describe their movement and why they may be unique to each individual animal.
24. Invite students to read other desert books such as the following:
 - a. *Saguaro Moon: A Desert Journal* by Kristin Joy Pratt-Serafini
 - b. *Desert Song* by Tony Johnson
 - c. *Cactus Hotel* by Brenda Z. Guiberson
 - d. *Desert Giant: The World of the Saguaro Cactus* by Barbara Bash
 - e. *America’s Deserts* by Marianne Wallace
 - f. *One Small Square: Cactus Desert* by Donald M. Silver

25. Students may wish to correspond with a zoologist or biologist at a local college or university. They may wish to obtain some first-hand information about selected creatures from the book or about desert animals in general. You may be able to make arrangements for the expert to visit your classroom along with several desert creatures.
26. Invite students to put together a “cactus newspaper” (in a newspaper format) that presents interesting facts and observations about animals that live in and around a Saguaro cactus. Invite students to use the same sections as the local newspaper (e.g. **Sports** – how fast scorpions or other animals run; **Fashion** – what the “well-dressed long-nose bat or elf owl is wearing tonight; **Food and Health** – the different diets of herbivores and carnivores; **Apartments** – places to live in the cactus). Invite students to assemble their newspaper using an appropriate piece of software. Be sure to distribute it to other classrooms.
27. Invite students to create their own desert songs using the music from another song. For example, here is a song that can be sung to the tune of “I’ve Been Working on the Railroad”:
I’ve been watching gila monster
All the live-long day
I’ve been watching gila monster
Just to see what he would say.
Can’t you hear him mumbling, grumbling
Stuck in between the crack
Don’t you ever want to meet him
“Cause he just might attack.
28. Invite students to rewrite part of the story from the perspective of one of the animals. For example, how would the rattlesnake view the actions of the other animals? How would the long-nose bat view the other creatures?
29. Invite students to create a desert environment in the classroom. Cover the walls with newsprint and invite students to paint scenes of a desert, using vibrant colors. Individual animals can be painted directly on the paper or created out of papier-mâché or cardboard and suspended from the ceiling with strings. Make some cacti and other desert plants in relief by constructing them out of cardboard and attaching them so they stand out from the wall.
30. Invite students to visit a local travel agency and collect travel posters or brochures for an imaginary visit to Arizona. Invite students to read the materials and then to create an Arizona travel brochure specifically geared for kids. What new or different information should be included in this brochure? (For students living in Arizona, invite them to create a brochure that entices other kids to come and visit their state.)
31. Provide students, working individually or in small groups, with a small sponge saturated with water. Explain to them that this represents a desert animal with a limited amount of available water. Over a 24-hour period, students should take care of their “animal” in a manner that will best conserve the water it contains, using only natural materials. Their “animal” must be in the open for at least four

- hours during that time to “feed.” To measure the beginning moisture content, each student or group should use the balance to determine the mass of its sponge. A control sponge should be left unprotected for the experiment’s duration. Students should then plan a strategy and write it down along with predictions of what will happen. During the 24-hour period, students should make and record observations. At the end of the allotted time, students again record the mass of their sponges. Students should compare with the previous mass and make inferences about the results in relation to real organisms with limited or temporary water supplies, such as lizards, pack rats, and coyotes. Have individuals or groups share their experiments and results with the entire class. Afterward conduct a class discussion of methods, results, and how this relates to adaptations for survival in real organisms.
32. Students can create various desert animals from homemade clay. Here’s a recipe: Mix 1 cup flour and $\frac{1}{2}$ cup salt. Add $\frac{1}{3}$ cup water, a little at a time. Squeeze the dough until it is smooth. Form into shapes; let air dry or bake at 225 degrees for 30 minutes. Paint with tempera paints. (Note: Adjust the recipe according to the number of students participating).
 33. Invite students to imagine that they are one of the creatures in the story. Encourage them to create a poster that says “Save Our Home.” They can include a full-color drawing of the selected creature and write a convincing ad for preserving the Sonoran desert environment.
 34. Invite students to imagine that they are a Saguaro cactus. Encourage them to write a life story told from the perspective of the cactus. What happens to the cactus during the course of a year? During a decade? During a century? How is the cactus’s life similar to or different from a human beings life?
 35. Invite an employee of a local garden center or nursery to visit the classroom and discuss various types of cacti sold there. What are some planting techniques? How should cacti be cared for? Why are some cacti easier to grow than others? Invite students to gather the responses to those questions as well as their own into an informative brochure or PowerPoint presentation that could be shared with other classes.
 36. Invite a local artist to visit your classroom and describe some of the procedures used in illustrating a book or advertisement. How does the artist take advantage of color, “white space,” size, dimension, and perspective in deciding how a final illustration will look? Invite the artist to describe some of the artistic techniques used in the book’s illustrations.
 37. Invite students to discuss the similarities between human dwellings and animal homes. What are some of the things that determine where an animal lives? Are those conditions or features similar to the considerations of humans in selecting a living site? Do animals, particularly desert animals, have more options for living spaces than humans?
 38. Invite students to imagine they are living in the desert and are writing to a friend to convince him or her to visit for several days. What features or attractions should be pointed out in the letter? Afterward, invite students to imagine they are

- in an urban environment and writing to a friend who lives in the desert – inviting that person for a visit.
39. Students may be interested in logging on to several web sites that describe Saguaro National Park in Arizona. After obtaining important information about the Park, invite students to share their collective data with other classes or groups of students. The following web site will get them started:
 - a. http://www.americansouthwest.net/arizona/saguaro/national_park.html
 - b. <http://www.nps.gov/sagu/>
 - c. http://www.desertusa.com/sag/du_sag_index.html
 40. If possible, obtain a copy of the following video: *The Amazing Giant Saguaros of America's Southwest* (The Gold Dust Twins Enterprises, 1994). This video is an excellent introduction to Saguaros – particularly for those not familiar with these denizens of the Arizona desert. After viewing, plan time to discuss with students new information they obtained from the video or misconceptions about desert life that were cleared up by the video.
 41. Students may enjoy eating foods made from cacti. If possible, obtain one or more of the following (www.desertusa.com is a good source) for students to taste: prickly pear cactus candy, prickly pear cactus jelly, prickly pear cactus honey, prickly pear cactus syrup (makes a great “lemonade”) and/or cactus marmalade.
 42. Discuss the differences between venomous and non-venomous snakes. Ask students to determine if there is a danger of venomous snakes in the area where you live. Identify the venomous snakes in your area and where they can be found on a classroom map. Invite local emergency medical personnel to discuss caring for a snakebite wound. Share and discuss any similarities between venomous snakes in your area and rattlesnakes that inhabit the Sonoran desert.
 43. Invite students to create their own booklets or informational brochures about bats. Divide the class into several cooperative groups and invite each group to research a specific category (e.g. habits, habitats, life cycles, diets, etc.). Invite the various groups to compile their data into a printed form which can be shared with other students in the school.
 44. Wind erosion is a common occurrence in the desert. If possible, invite a geologist from a local college or university to visit your class and discuss the short-term and long-term effects of wind erosion – particularly in a desert environment. Be sure to share some photographs of the effects of wind erosion, too.
 45. Obtain a copy of *Cactus Poems* by Frank Asch. Share some of the poems with your students. Afterwards, invite students to create their own cactus poetry. The completed poems can be posted on an oversized cutout of a Saguaro cactus.
 46. Invite students to collect several copies of travel magazines or nature periodicals. Ask them to prepare a “desert collage” composed of pictures, photographs and illustrations cut from these magazines. Be sure the collage is posted in a prominent place.

47. Invite students to check out the wide variety of books about cacti on the following web site: <http://cactus-books.com>. Encourage students to assemble a comparable resource (web sit, bibliography, etc.) on cactus books that are particularly appropriate for elementary students.
48. Invite students to gather data on the various Native American tribes that live (or have lived) in the Sonoran desert. How did they survive? What did they grow or hunt? What were some of their uses for cacti? Plan appropriate opportunities for students to share their research.
49. Invite students to gather information and data from the school and/or public library. They can put together a booklet or notebook entitled *Cactus Olympics* – a compendium of the world records held by individual cactus species or single cacti throughout the world. Some of the following designations may be appropriate:
- World’s tallest cactus
 - World’s oldest cactus
 - World’s smallest cactus
 - Cactus with the longest roots
 - Cactus with the biggest seeds
 - Cactus with the smallest seeds
 - Heaviest cactus
 - Most common cactus
 - Rarest cactus
50. Invite students to create a “word poem” about the Saguaro cactus. Write the term “Saguaro cactus” vertically on the left side of a piece of poster board. Encourage students to suggest words or phrases that are indicative of the Saguaro cactus for each letter. The following example has been partially completed:
- S** -
 - A** -
 - G** - Gila monsters and snakes live around it
 - U** -
 - A** -
 - R** - Rain rarely falls
 - O** -
 - C** -
 - A** - A den of foxes is nearby
 - C** -
 - T** - Time seems to stand still
 - U** -
 - S** - Scorpions scuttle along on unseen trails