

SAFETY

Each year people are lost, injured, and sometimes killed while visiting desert areas. Many of these accidents could have been avoided if some simple safety precautions had been taken. The following safety and survival information could not only help you if you're ever in an emergency, but, better yet, might also prevent an emergency from occurring.



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Equipment

1. Always carry plenty of water, in your backpack and in your car. Take periodic drinks whether you are thirsty or not. The usual recommendation is one gallon per person per day and up to two gallons during strenuous activity in the summer.
2. Essential equipment includes sturdy walking shoes and proper clothing. Long sleeves and long pants are suggested for protection from rocks and cacti. A hat, sunscreen, and sunglasses are recommended. Carry a day pack to hold such items as water, lunch, first aid kit, jacket, and flashlight.
3. Equipment to always carry in your car includes at least two gallons of water, for yourself and for the car radiator; a sheet to make shade; a blanket for warmth; extra food that won't spoil; and a flashlight. Never attempt to walk for help if you become stranded by the roadside. Stay with your vehicle, make a shelter, and drink plenty of water. Wait for help to come to you.
4. Be prepared for variable weather conditions. Temperature ranges throughout the day can be extreme. Occasionally, heavy thunderstorms produce flash floods. During stormy weather avoid dry creek beds and other possible flash flood areas. Do not try to drive or walk across a flooded area.
5. Carry a map of the area. Learn how to use a compass and bring it along.
6. Always tell someone your plans — where you are going, what route you will take, when you will return. If your plans change during your trip, update with a telephone call. If no phone is available, leave a note in an obvious place along your original trail. This will help searchers find you faster in the event of an emergency.
7. Carry matches to start a fire during an

emergency. A fire will not only provide warmth, but also a feeling of safety.

8. Bring string, a tarp, and a knife for making shelter. It is important to make shade if none is available, to prevent hyperthermia and dehydration in the hot sun.
9. Carry a first aid kit.
10. Carry a signaling mirror or other signaling device, such as a whistle. When in an emergency situation, there will most likely be people looking for you. You must act as part of the rescue team by helping them find you.
11. Bring food for energy while out in the field. Packaged foods like granola bars, crackers, or dried fruit are convenient to carry in a backpack, and they do not require preparation.
12. Hiking in the desert often means traveling over rough, steep terrain with frequent elevation changes. Try to pick a route that best suits your abilities. Distances are often deceiving. Hike during cooler times of the year or in the early morning.

Dangerous Situations

Hyperthermia occurs when the body's natural cooling mechanisms, like perspiration, fail. The most dangerous form of hyperthermia is heatstroke. Symptoms include a high body temperature (above 106°F); dry, red skin; a rapid pulse; and unconsciousness. A victim of heatstroke should be cooled as rapidly as possible by sponging the skin with cool water or a cold pack. Seek professional help immediately.

Symptoms of heat exhaustion, a less serious condition, include normal body temperature, pale and clammy skin, heavy perspiration, headache, nausea, and dizziness. Move to a cool, shaded

area and drink water.

Hypothermia is the lowering of the body's core temperature. Deserts are not always hot; temperatures may go below freezing. Some desert areas, like Lake Mead National Recreation Area, have artificial lakes that have cool temperatures year round. Be ready to insulate yourself and stay dry. Try to stay active, build a fire, and eat food.

Remember, prevention is the best cure. Set your priorities in a survival situation to prevent hyperthermia, dehydration, and hypothermia since these conditions are hard to reverse without medical attention.

Dehydration occurs with the loss of water and thus usually accompanies hyperthermia. Totally cease activity, sit in the shade, and drink water.

Hazardous Plants And Animals — Which Really Are?

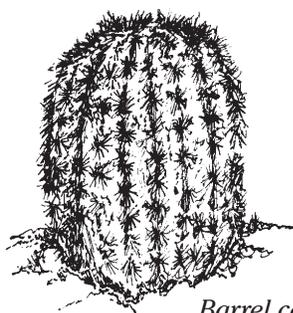
The deserts of the southwest United States support a wide variety of plant and animal life with interesting adaptations which allow them to live in the sometimes harsh desert environment. Due to years of television programs, films, and novels accentuating the poisonous plants and animals of the desert, many people fear these creatures rather than admiring them and their amazing adaptations.

Most desert dangers come from man-made hazards (like barbed wire fences, open mine shafts, and wells), not plants and animals. The exaggeration surrounding desert creatures has caused unwarranted fears among people and, as a result, the killing of many harmless species. In order to prevent this misinformation from causing extinctions, it is important to learn which plants and animals are actually poisonous. Here are

the most commonly asked about species; some are harmful, some are not.

Plants:

Cacti — Cacti are interesting plants to look at, but all have spines of varying sizes. The spines of some species, like the teddy-bear cholla, have microscopic barbs which are very painful if they



Barrel cactus

become imbedded in the skin. Pliers or tweezers are often required to remove the spine. Keep a safe distance from cacti on trails. Watch for loose clothing that might snag on the plant as you walk by.

Datura or Jimson weed — Flowers are funnel-shaped and white with a purplish tinge in the throat. This plant is hazardous to touch and can be lethal if any part is eaten. Datura, like any other wildflower, should not be picked.



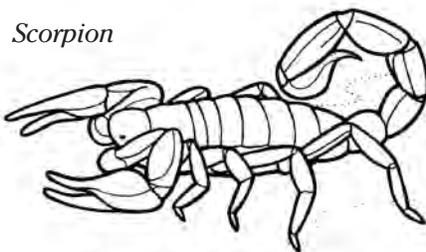
Datura

Animals:

Tarantula — This large hairy spider is not harmful to humans; rather it is beneficial because it feeds on many insects. It is most active in the fall when males are hunting for mates.

Hospitals recommend that bite or sting victims of the following should seek professional help as soon as possible:

Scorpion — While more than twenty species are known to exist in the



Scorpion

Southwest, only one is deadly — the sculptured scorpion (found only in Arizona and New Mexico). This straw-colored, slender-tailed scorpion is only two inches in length. A scorpion's stinger is located at the extremity of the "tail." Poison is injected beneath the skin, making surface treatments ineffective.

Black widow spider — This is a common spider found as frequently in homes as in desert wilderness. A black widow's venom is more potent than that of a rattlesnake, and it acts quickly on the nervous system of humans. The black widow is usually found in shady and protected areas like rock and wood piles and seats of pit toilets.

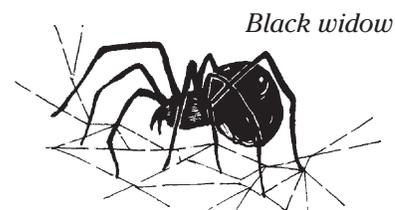
Brown recluse spider — Earlier in this century, the black widow was considered the only United States spider dangerous to man. But now, the brown recluse has joined ranks. Its bite can go unnoticed for two to eight hours. The first symptom is usually the deterioration of the flesh around the bite. Sometimes called the

fiddleback spider because of the violin-shaped spot on its "head," it is found in open fields, rocky bluffs, outhouses, garages, and piles of sacking or clothing.

Rattlesnake — One feature to most easily identify a rattlesnake is its triangular head, which appears distinct from the rest of its body. Those found in the Mojave Desert include: Mojave Desert sidewinder, Mojave green, red diamond, southern Pacific, speckled, and western diamondback.

If bitten, seek professional help immediately. Stay calm, restrict movement and, if possible, keep the bite site below the level of the heart. As with other forms of poison, the physical condition and size of a person affects how serious a bite will be. For this reason, children are more susceptible. Wear clothing that will protect from a bite while hiking or walking in the desert. Watch where you put your hands and feet. The best prevention against snakebite is giving the snake a wide circumference.

A rattlesnake will try to remain hidden from a human rather than strike. Snakes hibernate during the winter. During the summer, they search for food at night (lizards, young rabbits, rodents) and coil up in shady spots during the day. If you do see a rattlesnake consider yourself lucky!



Black widow

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Activity 1 Is This Hiker Ready?

OBJECTIVES: Name the necessary items to take on a desert hike. Explain why each item is necessary.

MATERIALS: Backpack, clothes to layer, first aid kit, hat, map, packaged food, sturdy shoes, sunblock, sunglasses, unnecessary items (such as a radio, toys, bikini, gum, etc.), water bottle, Discovery Activity Page #1, crayons or colored markers.

SUBJECTS: Art, health, language arts.

SKILLS: Analysis, discussion, drawing, listening, listing, public speaking, writing.

METHOD: In this activity, your group will prepare one hiker for a day in the desert by gathering the necessary items for safety.

1. Choose one student from your group to be the “hiker.” With all the materials set out on a table (both necessary and unnecessary), call on one volunteer at a time to give an item to the hiker and tell why they think it is necessary. The volunteer can help dress the hiker with the piece of clothing, rub on sunscreen, or pack the item in the hiker’s backpack.

2. When the group feels the hiker is prepared, talk about the items left on the table and why they are unnecessary. What other things might be unnecessary? Has the hiker forgotten anything?

VARIATION: As you start a discussion on desert safety, arrange to have a hiker wander into the classroom. This hiker is obviously unprepared — sandals, shorts, tank top, a tiny fanny pack with only a small water container. Ask the students if the hiker looks prepared. The answer

should be a resounding “No!” As students name items they think the hiker needs, bring them out from a hidden location and “prepare” the hiker. Discuss why each item is necessary. Some fun can be added by producing oversized sunglasses or a giant sombrero.

3. To review information several days later, pass out copies of the activity page. Have your students draw items they need for a hike inside the outline of the backpack.

4. When everyone is finished, allow volunteers to bring their backpacks to the front of the class and discuss what they have drawn. After doing this with several students, decide if anyone has forgotten anything.

EXTENDING THE EXPERIENCE: Ask students to bring in newspaper articles about actual desert rescues and/or emergencies. Local newspaper offices and libraries might be good sources of clippings. What went wrong? What might have been done to prevent the situation from occurring or to cause a different outcome?

Activity 2 A Hike In The Desert

OBJECTIVES: List two natural history facts about the desert.

MATERIALS: Any props used, index cards, necessary items for hiking.

SUBJECTS: Language arts, physical education, science.

SKILLS: Discussion, listening, observation, public speaking, reading, research.

METHOD: As you study deserts with your class, you should take your students and venture out into the field for hands-on research, experiments, and activities. This can be an enjoyable and rewarding experience for everyone, if you understand the basics of desert safety explained thus far and take a few simple precautions.

Discuss desert safety with your students and allow them to participate and be responsible for preparing themselves to go out. Perhaps each student can carry a small backpack with some necessary items. This will make each student aware of necessary safety items and give them a feeling of responsibility for themselves. If you choose this approach, be sure to examine each bag before you leave school, checking for the necessities and removing superfluous items that simply add weight to the student’s pack. If you want the students to be unencumbered by packs, you must be responsible for bringing enough water for everyone, usually one gallon per person per day.

You, as the teacher, must also make preparations that the students cannot help with, such as packing a first aid kit and leaving exact instructions with someone (probably the school office) about where you are going, what route you are taking, and when you plan to be back. Also, arrange to have enough chaperones accompany you on the trip. You know best the personality of your students and how they are likely to respond to the activity, but generally one adult per six to eight students is adequate. Plan to visit the area yourself ahead of time to familiarize yourself with the area and plan your hike.

Everyone needs to be aware of harmful plants and animals. If your students will be scrambling up and along rocks, warn them to always look before placing a hand, foot, or seat. Many critters, including snakes, frequent

rocky areas and should be avoided as a courtesy to the animal and as a safety precaution for yourself. Also, talk to the students about the dangers of cacti and other prickly plants. Cacti are fun to look at but not fun to touch.

Whatever preparations you make, be sure to discuss them with the students so they can benefit from the information too. The goal is to teach students responsible desert preparedness without instilling an unnecessary paranoia.

1. Begin with a discussion of the above information. Working with your students, select a location for a desert outing. This could even be a walk in an area close to school.

2. Get together the necessary items for each student to carry. It would be good to do Activity 1 with your class first.

3. Decide if your hike will just be walking with little or no information or if you will have information stops at predetermined locations. A good way to involve students in this is to plan a “Pass Along Hike.”

Pass Along Hike: Determine locations of interest ahead of time and collect brief information about each site. This could be identification of plants, animals, or animal signs; pointing out interesting geology; or safety reminders, such as the possible presence of snakes in and around rock piles. Write this information on index cards. Walk in a single file until you reach your first stop. The corresponding information card is given to the first student in line, who quickly reads the card and shares the information with each student who passes. The information giver then joins the end of the line. This process is repeated at each stop. Review at the end of the hike to see what is remembered about each stop. This

is also a good time to add additional information.

EXTENDING THE EXPERIENCE: Plan a walk in an area near the school. Select students to be “experts” at each stop. Have students research information for their stops. Invite other classes to take your class’ nature walk. If an appropriate outdoor area is not available near the school, this activity can be done in the classroom. Pictures and objects, such as a tortoise shell or rock, can be used. Remember, these objects cannot be removed from National Park Service areas.

Activity 3

Animals People Love To Hate

OBJECTIVES: Name two animals generally feared by people. Name positive attributes of these animals.

MATERIALS: *How Poison Came Into the World* (on page 6); pictures of poisonous, feared animals; scissors; three twelve-inch black or brown pipecleaners per student.

SUBJECTS: Art, language arts, science.

SKILLS: Analysis, discussion, evaluation, listening, research, writing.

METHOD:

1. Pass out pictures of poisonous animals or animals people fear face down. Have students flip cards over and share first words/reactions.

2. Discuss and list which animals your students dislike or are afraid of. Why have they developed these feelings?

3. Then say the animals on their cards have just died. Each student must write a eulogy, saying as many good things as

Fun Facts — QUICK FIRST AID REFERENCE

Scorpion, black widow spider, and brown recluse spider bites

— Seek professional help. Individual reactions vary.

Rattlesnake bites — Seek professional help immediately. Keep victim calm and restrict movement. Keep bite site below level of heart.

Heatstroke — Symptoms: red, flushed victim; hot, dry skin; extremely high body temperature.

Life-threatening. Cool victim quickly. Seek professional help immediately.

Heat exhaustion — Symptoms: pale, clammy skin; profuse perspiration, extreme weakness. Give water. Have victim rest. Medical help is needed for severe cases.

Hypothermia — Symptoms: staggering, slurred speech, uncontrolled shivering. Replace wet or cold garments with dry, warm clothing. Wrap victim with persons who are warm in blankets or a sleeping bag. Give hot liquids to conscious victim.

possible. Encourage students to research information for their eulogies.

4. Humans have made stereotypical assumptions about some animals that are not always accurate. The appearance and behavior of animals did not evolve to appeal to humans. They came about to ensure survival.

It is important to respect all animals

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and to know which may harm us if we get too close. Native Americans incorporated these animals into myths and legends to help explain them. Read *How Poison Came Into the World* to your students.

How does each animal in the story intend to use its poison? Why do animals have painful bites, stings, and other defenses? What would happen to them if they didn't have these defenses?

EXTENDING THE EXPERIENCE: Using pipecleaners, have each student construct a tarantula. Cut two pipecleaners in half. To make four pairs of legs, bend each short piece of pipecleaner into a letter **M**. To make feet, bend the ends of each **M** outward. Stack the four pairs of legs so that the four middles are together. Wrap the long pipecleaner around and around the middles to make the body. Spread the legs so the spider can stand on them. From a tarantula's viewpoint, have the students write stories about an encounter with a human.



How Poison Came Into the World

(Choctaw Indians-Southeast)

Back when the world was new, there was a certain plant that grew in the shallow water of the bayous. It grew in the places where the Choctaw people would come to bathe or swim. This vine was very poisonous, and whenever the people touched this vine, they would become very sick and die.

This vine liked the Choctaw people and felt sorry for them. It did not want to cause them so much suffering. It could not show itself to them, because it was its nature to grow beneath the surface. So it decided to give its poison away. It called together the chiefs of the small people of the swamps — the bees, wasps, and snakes. It told them that it wished to give up its poison.

These small creatures held council together about the vine's offer. Until then, they had no poison, and they were often stepped on by others. They agreed that they would share the poison.

Wasp spoke first. "I will take a small part of your poison," it said. "Then I will be able to defend my nest. But I will warn the people by buzzing close to them before I poison them. I will keep the poison in my tail."

Bee was next. "I, too, will take a small part of your poison," it said. "I will use it to defend my hive. I will warn the people away before I poison them, and even if I should have to use my poison, it will kill me to use it, so I will use it carefully."

Water Moccasin spoke. "I will take some of your poison. I will only use it if people step on me. I will hold it in my mouth, and when I open my mouth people will see how white it is and know that they should avoid me."

Last of all, Rattlesnake spoke. "I will take a good measure of your poison," he said. "I will take all that remains. I will hold it in my mouth, too. Before I strike anyone, I will use my tail to warn them. *Intesha, intesha, intesha, intesha*. That is the sound I will make to let them know they are too close."

So it was done. The vine gave up its poison to the bee and the wasp, the water moccasin and the rattlesnake. Now the shallow waters of the bayous were safe for the Choctaw people, and where once that vine had poison, now it had flowers. From then on, only those who were foolish and did not heed the warnings of the small ones who took the vine's poison were hurt.

Discovery Activity Page #1

Is This Hiker Ready?

What would you put in the backpack?

