
SYNOPSIS:

The word “desert” may bring to mind a hot, dry, lifeless landscape. In this program, we will discover that although deserts do present some of the driest and harshest environments on earth, they are diverse and delicate ecosystems, supporting an amazing variety of life forms.

Learn why and when the world’s great deserts formed and then discover desert surprises as we visit the Sahara, the Kalahari, the Namib and the southwestern United States. We will see some of the deserts many faces and find out how desert dwelling plants and animals have adapted for life in their extreme habitats.

CURRICULUM UNITS:

Earth Science
Biology
General Science
Life Science
Geography

BACKGROUND INFORMATION AND PROGRAM OVERVIEW:

Ancient wall paintings featured at the beginning of the program are evidence that at least one of the world’s great deserts was not always so. Graphics show how climatic conditions 8,700 years ago, when glaciers were receding from the northern hemisphere, led to the formation of deserts north and south of the equator all around the world.

The program shows the great variety of desert landscapes. Some are flat, baked lakebeds. Some are

covered in boulders and mountainous rock formations and others are seas of moving sand dunes; all are arid or dry.

The scarcity of water has not, however, prevented plants and animals from making their homes in the desert. The program shows how different species cope with the dryness and extremes of temperature. The conditions can range from scorching hot during the day to freezing at night, due to the lack of insulating cloud cover.

Desert like plants, such as the saguaro cactus, store water from the infrequent rains within their great trunks and limbs. The seeds of flowering desert plants, awaiting rain in protective seed heads which pop open at the first drop, are capable of sprouting nearly overnight; and the leaves of the long lived Welwitschia direct condensation from fog to its roots.

A variety of animals that have adapted to desert environments are featured in the program, from insects and reptiles to birds and mammals. Many are nocturnal, avoiding the heat of the day. Shown are some of the interesting adaptations through which those animals that do brave the sun and daytime heat move, dissipate heat and take in sufficient water.

SUGGESTED TEACHING STRATEGIES:

After showing the video ask your class the following:
How do we know that some deserts were once green and fertile?
Name is one characteristic the world’s deserts have in common?
How do desert plants get enough water?
Why are so many desert dwelling animals nocturnal?

What are some of the ways desert animals survive both the heat and scarcity of water in the desert?

If your school is located in, or near, a desert, ask the students to talk about their personal experiences. If not, ask if any students have ever visited a desert. Ask them to describe the landscape and any plants or animals they saw. What impressions did they have about the desert?

On a map or globe, locate areas where there are major deserts. Divide the class into teams of students, each team to research and report on one of the deserts

Recall some of the adaptations in desert plants and animals. How might they be different than those of plants and animals in a rain forest or polar region?

If you live in a region where cacti naturally grow or you can examine some in a botanical garden or nursery, or if any students keep cacti as houseplants, let the class examine some close up. Which cacti structures function as leaves? Stems?

Have students use their imaginations to “invent” an animal or plant adapted for life in the desert. They should draw or describe what it looks like, what kind of desert it lives in, when it is active, how it gets water and how it fits into its ecosystem – what it eats and what eats it.

VOCABULARY:

CONDENSATION- Droplets of liquid formed as a vapor is cooled

EQUATOR- The imaginary line or region around the earth which separates the northern and southern hemispheres.

EROSION- The wearing away of rock or earth by exposure to wind, water and changing temperatures.

GLACIER- An enormous mass of ice, usually in polar regions or high mountain passes, which is formed of compacted snow and moves slowly down a slope or valley under its own weight.

NOCTURNAL- Active at night. Many animals use the cover of darkness to forage for food at night and some plants bloom only at night.

OASIS- A fertile or green area in an arid region.

RADIATION FOG- Fog caused by the condensation of warm, moist air over a cool land mass.

SAGURO- Large cactus native to the southwestern United States and Mexico, which can grow 50 feet tall, and bears white flowers and edible fruit. Water is stored in the thick trunk and upreaching limbs.

SAND DUNES- Large, drifting mounds of sand in deserts and along beaches.

WELWITSCHIA- A plant species that grows in the Namib Desert of Africa. It absorbs water from radiation fog through its leaves which may grow hundreds of feet long. Some are believed to thousands of years old.

CAREER OPPORTUNITIES:

Biologist
Botanist
Ecologist
Geographer
Geologist
Land Manager / Ranger
Naturalist

The Wonders of Ecology & Conservation



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LIFE IN THE DESERTS

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