

SUGGESTED REFERENCES

- Gibbons, Gail.
Deserts.
Holiday House, 1999
- Fowler, Allan.
It Could Still Be a Desert (Rookie Read-About Science)
Children's Press, 1997
- Webster, Donovan.
China's Unknown Gobi: Alashan
National Geographic, July 1996
- *National Geographic Magazine*
http://magma.nationalgeographic.com/ngm/data/2002/01/01/html/ft_20020101.4.html
- Brune, Jeff. *Alaska's Cold Desert.*
Bureau of Land Management Education
http://www.blm.gov/education/00_resources/articles/alaskas_cold_desert/index.html

NATIONAL SCIENCE EDUCATION STANDARDS

K - 4
Life Science
Characteristics of Organisms
Organisms and Environments

K - 4
Science in Personal and Social Perspectives
Changes in Environments

5 - 8
Life Science
Diversity of Adaptations and Organisms

*Source: *National Science Education Standards, 1996, National Academy Press*

CREDITS

The producers thank the Australian Broadcasting Corporation, Content Sales, for materials used in this program.

EDUCATOR ADVISORY PANEL

Fred Barch, M.S.
Rose-Marie Botting, M.S.

Debra A. Murnan, B.A.
John A. Murnan III, M.S.

PRODUCTION CREDITS

WRITER/PRODUCER:
ASSOCIATE PRODUCER:
EDITOR:
NARRATORS:

Megan Chaney
Patricia Norman
Jon Glassman
Cyrilla Baer Pond & Joshua Forman

SCIENCE SCREEN REPORT FOR KIDS®

Science Brought To Life In The Classroom

SCIENCE SCREEN REPORT FOR KIDS is a proud participant in the Presidential Awards for Excellence in Mathematics and Science Teaching. For more information visit
www.nsf.gov/pa

1000 Clint Moore Road, Suite 211, Boca Raton, FL 33487
tel: 1.800.232.2133 email: info@ssrvideo.com
www.ssrvideo.com

COPYRIGHT © 2005 Allegro Productions, Inc. All rights reserved.

SCIENCE SCREEN REPORT FOR KIDS

VOLUME 15 ISSUE 4 EXPLORING DESERT BIOMES



Accreditation Board
for Engineering
and
Technology



Presidential Awards
for Excellence in
Mathematics
and
Science Teaching



Junior Engineering
Technical Society
www.jets.org

SYNOPSIS

Deserts are some of the harshest environments in the world. They can be found just about anywhere water is scarce. They can be found in tropical rainforests and even in cold and snowy Antarctica. When most people think of deserts they immediately think of scorching heat. However, it takes more than heat alone to create a desert. Each desert is unique, but all share commonalities - they are dry, windy, arid lands with little annual rainfall.

In this edition of SCIENCE SCREEN REPORT FOR KIDS, we will explore the unique and fascinating land of the desert. We will uncover how they were formed and how some organisms have adapted to living in such challenging conditions.

CURRICULUM UNITS

- BIOLOGY
- ECOLOGY
- ENVIRONMENTAL SCIENCE

RUNNING TIME

17:48

BACKGROUND

Deserts cover nearly one-third of the Earth's land surface. These vast areas of windy, dry land receive very little annual rainfall, yet life has adapted to these conditions.

Many factors go into the formation of deserts. The most relevant are location and climate. Location affects the type of climate and weather patterns a desert will receive. Deserts closest to the equator will consist of some of the hottest temperatures whereas those in the Polar Regions will be cold and snowy. Most importantly, location determines the amount of rain a region will receive each year.

With such harsh conditions, it is hard to believe that life can thrive in deserts. Over time, plants and animals that make their home in the desert have learned to adapt to these conditions. For example, during the short time while food and water are plenty, animals are busy reproducing. One species, the kangaroo, needs very little water to survive. In fact, they are capable of going months without drinking! These marsupials sleep during the day and come out to eat in the evening when temperatures drop.

Each biome has its own food chain, and the desert is no exception. Plants and seedlings are at the bottom of the food web - which relies on the rain. When the rain is plentiful, the food web is alive and well. Insects such as termites eat plants, and the lizards eat termites. Spiders and centipedes feed upon the termites, and snakes feed upon them. The food web is what allows these species to survive.

Deserts were formed naturally as the years went by. Over time, landscapes have changed and animal and plant life have adapted. But what happens when desert lands are disturbed by human activity?

An increase in population and grazing of livestock are contributing to the problem. This deterioration of soil, known as desertification, is the result of land mismanagement. Scientists and ecologists are researching the deterioration of productive lands and are finding that desertification may be reversible if land is managed correctly. With a combination of balance between development of the lands and respect for the surrounding environment, deserts can continue to thrive.

ADVANCED ORGANIZERS

Prior to showing this video students should have some understanding of the following Benchmarks for Science Literacy, Oxford University Press, which are excerpted and, in some cases, abbreviated below. Refer to the Benchmarks for more information.

Benchmark 4: The Physical Setting

Section B - The Earth

Know by the end of Grade 2

- Some events in nature have a repeating pattern. The weather changes some from day to day, but things such as temperature and rain (or snow) tend to be high, low, or medium in the same months every year.

Know by the end of Grade 5

- Air is a substance that surrounds us, takes up space, and whose movement we feel as wind.

Section C - Processes that shape the Earth

Know by the end of Grade 2

- Change is something that happens to many things.

Benchmark 5: The Living Environment

Section A - Diversity of Life

Know by the end of Grade 2

- Plants and animals have features that help them live in different environments.
- Some animals and plants are alike in the way they look and in the things they do, and others are very different from one another.

Section D - Interdependence of Life

Know by the end of Grade 2

- Animals eat plants or other animals for food and may also use plants (or even other animals) for shelter and nesting.
- Living things are found almost everywhere in the world. There are somewhat different kinds in different places.

Know by the end of Grade 5

- For any particular environment, some kinds of plants and animals survive well, some survive less well, and some can not survive at all.
- Changes in an organism's habitat are sometimes beneficial to it and sometimes harmful.

*Benchmarks can be found at www.project2061.org/tools/benchol/bolintro.htm

CRITICAL THINKING EXERCISES

- Create a name poem about the desert. A name poem tells about the word. It uses the letters of the word for the first letter of each line.
- Draw a desert food web and label the animals in the food chain.
- Bring in a cactus and discuss how this plant survives with limited water intake. Have students research various cactus species and select one to write about and illustrate. Be careful, they are prickly!
- Compare and contrast two desert dwellers (birds, mammals, or reptiles) using a Venn Diagram.
- Discuss desert weather patterns and discuss how they differ from weather patterns in your area. How does the weather affect plants and animals native to your area?
- Research the water cycle. Explain the role the water cycle plays in deserts.
- Have students work cooperatively in groups to discuss desertification and develop a plan to help manage and restore desert lands. Share individual group projects with the class.
- Show students how important water is for plants to grow and survive. Put seeds in a container with moist soil and water as needed. Place seeds in another container with moist soil and don't water. What happens?

VOCABULARY

- Adapt** To make suitable to or fit for a specific use or situation.
- Atmosphere** The air or climate in a specific place.
- Continents** One of the principal land masses of the earth, usually regarded as including Africa, Antarctica, Asia, Australia, Europe, North America, and South America.
- Desertification** A change to desert land either by climate or destructive land use.
- Environment** The combination of external physical conditions that affect and influence the growth, development, and survival of organisms.
- Evaporate** When water changes into vapor.
- Food Chain** A community of organisms where each member is eaten in turn by another member.
- Marsupial** Nonplacental mammals of which the females have a pouch containing the teats where the young are fed and carried.
- Meteorologists** One who reports and forecasts weather conditions.
- Precipitation** Any form of water, such as rain, snow, sleet, or hail, that falls to the earth's surface.
- Rain shadow effect** mountain ranges and weather combined create deserts on the backsides of mountains.
- Satellite** An object launched to orbit Earth or another celestial body.
- Species** A class of individuals or objects grouped by virtue of their common attributes and assigned a common name.

CAREER POSSIBILITIES

- BIOLOGIST
- ENVIRONMENTAL SCIENTIST
- ECOLOGIST
- METEOROLOGIST