

Scorching Hot or Freezing Cold
Field Program
Teacher's Version
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Grade: Second

Subject: Weather in the Mojave Desert

Theme: By measuring and recording the weather conditions in the Mojave Desert on a daily basis trends can be identified. These trends affect humans and other desert animals.

Goal: Students will gain experience observing, recording, and describing the effects of weather.

Objectives: Students will be able to record the daily temperature.
Students will observe and record changing conditions.
Students will describe the weather at different times of the year.
Students will describe at least one way changing weather conditions affect humans and animals.

Curriculum: Science 1.1, Science, 3.2, Science 3.3, Science 3.4, Science 6.2

Materials: Temperature recording worksheet
Weather condition recording calendar
thermometers

Background:

An area is designated a desert based on the amount of precipitation and the rate of evaporation in an area. Red Rock Canyon National Conservation Area is located within the Mojave Desert. The area receives approximately 6 inches of rain per year (the Las Vegas valley receives approximately 4 inches per year). The rate of evaporation exceeds 6 inches per year.

This dry environment of the Mojave Desert is classified as a rain shadow desert. A rain shadow desert is created when mountain ranges lie parallel to moist, coastal areas. Winds moving inland cool as air is forced to rise over the mountains. Clouds form and carried moisture falls on slopes facing the winds. When the winds move over the crest and down the far side, they are very dry. Descending air also makes it hard for additional clouds and precipitation to form. Without another source of moisture, rain shadow deserts are formed on the far side of these mountain ranges.

The Mojave Desert lies East of the Sierra Nevada range in California. Moisture and winds from the Pacific Ocean move east and the moisture falls on the mountains. This results in dry wind and air descending on the Vegas area including Red Rock Canyon.

Key Points: Weather is important in our lives.
Weather in the desert is extreme.
Rain Shadow Desert condition causes extremes.
Weather changes daily, but conditions like temperature and rain (or snow) tend to be high, low or medium in the same months every year.
Humans plan activities based on weather.
Meteorologists use many specialized instruments.

Vocabulary: anemometer: device to measure wind speed
meteorologist: someone who studies the science of weather and weather forecasting.
psychrometer: a device used to measure the amount of moisture in the air.
rain gauge: an instrument used to measure the amount of rain that has fallen in a 24 hour period.
thermometer: an instrument used to measure the temperature.

Activities: Pre-site visit: There are two activities that students can do before they visit Red Rock. It is best if both of the activities can be done for the entire month that your group will be at Red Rock. One activity is measuring the daily temperature. The other is making observations about weather conditions.

On a daily basis have the students measure the temperature and record it on the chart provided.

On a daily basis the students can also make observations about weather conditions. They should note/draw if it is sunny, cloudy, rainy, etc. on the calendar provided. Before beginning this activity fill in the month and days on the calendar. Then photocopy each form for every student.

Do both of these activities for the entire month that your group is visiting Red Rock Canyon. Included in this packet is a calendar and a spread sheet for the temperature readings. Make sure each student has a copy of each. The option is available for your group to be our official AJunior Meteorologists of the Month®. You must register with the Park Rangers in advance for this option. If you choose to do this you will need to fax or call in your temperature readings on a daily basis. The teacher can either do this or a student. We will display the data in the Visitor Center for the month. When your students visit Red Rock Canyon they will get a chance to see the display and hopefully take pride in their work. The visitor center has thermometers you can check out for the month. Depending on the

time of year, a ranger may be available to visit your class and teach them how to read a thermometer. Just ask us.

At the visitor center: While at the visitor center the students will be doing a number of activities. Topics include a discussion about why the weather is like it is in Las Vegas and learning how to read a thermometer. Students will also learn how wind, moisture, and rain are measured. Students will get a chance to explore the weather station we have at Red Rock Canyon. We will also do an activity, which looks at weather patterns at different times of the year. We will explore the idea of how this affects humans and other animals at Red Rock Canyon.

Post-site activity: This activity is designed to help students visualize trends in the weather while working on their math and graphing skills. If you did the pre-site activity all your students should have a calendar with a picture in each square. At the end of the month cut the calendar into its individual days. Glue the days that show similar weather in columns to produce a bar graph. Remind the students that bar graphs have titles and both axes are labeled. If you choose to send the completed graphs to us we will display them in the visitor center.

Conclusion: The Mojave Desert is characterized by extreme temperatures, little rain, and strong winds. Weather is important to our lives and to the animals and plants that live at Red Rock Canyon.

References: Mojave Desert Discovery Book
Red Rock Canyon Home Page-
www.redrockcanyon.blm.gov
National Weather Service-
www.nws.noaa.gov
National Weather Service Western Region-
www.wrh.noaa.gov
Nate Tannenbaum-s Weather (local weather forecast)-
www.kvbc.com
Remote Automatic Weather Station (RAWS) (Current readings from our
weather station at the Visitor Center)-
www.boi.noaa.gov/FWXEXP/RAWS/SUMMARY/alphabet.NV.html

Recording Today's Weather

Month and Year: _____

Where did you measure the temperature: _____

What time did you measure the temperature: _____

Date of Month	Temperature	Date of Month	Temperature
1		17	
2		18	
3		19	
4		20	
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15		31	
16			

