Hottest, Coldest, Highest, Deepest

Science Standard II:
Students will understand that the elements of weather can be observed, measured, and recorded to make predictions and determine simple weather patterns.

Objective 2:
Interpret recorded weather data for simple patterns.

Intended Learning Outcomes:
3. Understand Science Concepts and Principles
4. Communicate Effectively Using Science Language and Reasoning

Content Connections:
Math; Science; Social Studies; Reading

Science Standard II

Objective 2

Connections

Background Information

The state of Utah is unique in the type of landforms that people come from all over the world to see. There are the mountain regions in the north, the breathtaking canyons in the south, the deserts in the west, and the plateau regions to the east. Utah's position on Earth (where we are relative to the ocean and equator) combine with the landscape to provide a variety of weather and climate patterns.

Our climate also varies extremely throughout the state on any given day. One person may be golfing in sunny St. George while another person is skiing at Park City on the same day.

It is important to be able to compare the temperature, rainfall, and other data of different locations throughout the state. Discuss why these variations exist.

Information can be found through reference books and the Internet to make comparisons of weather data in Utah and other places in the world.

Invitation to Learn

What do you think are the coldest and hottest places in Utah? What is the coldest or hottest place in the world? How cold or hot do you think it gets?

Instructional Procedures

1. Students make a K-W-L chart in their journal.
2. Have students list the highest, coldest, hottest, rainiest, and driest places in the world that they know of in the "K" section.
3. Ask them to write some questions they would like answered in the "W" section that relate to Utah (e.g., What is the coldest place in Utah?).

Materials

- ❑ *Hottest, Coldest, Highest, Deepest*
- ❑ Weather extremes data
- ❑ A science journal

4. Read the book *Hottest, Coldest, Highest, Deepest* aloud.
5. Have students list what they learned in the "L" section of the chart.
6. Share data about weather records for the state of Utah (see *Records for Utah Weather Extremes* p. 3-10). Additional information is available in reference books or the Internet. List records of temperature, wind speed, precipitation, etc.
7. Have them fill in the "L" section with what they learned about Utah's weather in general and their area in particular.

Possible Extensions/Adaptations/Integration

- Students may also look up information about another state or country (such as Japan) to see what weather extremes they experience.
- Have students write and illustrate their own book about extremes in weather, landforms, elevation, etc. from what they learn about another location.
- Have students record the temperature each day for a week to see what the highest and lowest temperatures are at the school.
- It may be necessary to have students sit up close to see the pictures in the book.
- Students can work in groups to complete the K-W-L activity sheet.

Assessment Suggestions

- Use the K-W-L chart for assessment purposes.
- Assign the learners to create their own illustrated book.
- Give a written quiz with multiple choice or fill-ins where students list the hottest, coldest, etc., places.

Additional Resources

Students can access web sites on weather
http://www.brainpop.com
http://www.ksl.com
http://weather.gov/om/reachout/kidspage.html
http://www.wrh.noaa.gov/saltlake

There are videos available on weather through district media centers. DK Vision has a video called *Eyewitness Weather* that is good (http://www.dk.com).

Books

Hottest, Coldest, Highest, Deepest, by Steve Jenkins; ISBN 0395899990

Utah's Weather Guide, by Dan Pope and Clayton Brough. 1997 News4Utah

Can It Rain Cats and Dogs?, by Melvin and Gilda Berger (Scholastic); ISBN 0-439-08573-X

The Wind Blew, by Pat Hutchins (Scholastic); ISBN 0-590-46632-1

Looking At Clouds, by Susan Ring (Newbridge); ISBN 1-58273-027-X

Cloudy With a Chance of Meatballs, by Judith Barrett (Scholastic); ISBN 0-590-30384-8

Magic School Bus-Inside A Hurricane, by Joana Cole (Scholastic); ISBN 0-590-44687-8

Weather Words, by Gail Gibbons (Scholastic); ISBN 0-590-44408-5

Weather, by ValerieWyatt (Kids Can Press); ISBN 1-55074-815-7

The Tornado Desk, by Jacalyn S. Leavitt (Talon Printing)

Family Connections

- Keep track of the weather elements at home for several weeks. Record the highest, lowest temperatures, rainfall, etc.
- Share the book *Hottest, Coldest, Highest, Deepest* and the K-W-L chart with family members.
- Watch the local weather forecast on television or find it in the newspaper. Look for the highest and lowest temperatures for the state and country.

Utah Weather Extremes

Temperature

HIGHEST	117 F (JUL 5 1985)	ST. GEORGE
LOWEST	-69 F (FEB 1 1985)	PETER SINK

Precipitation (inches)

GREATEST IN 5 MINS	1.03 (AUG 11 1975)	BRYCE CANYON
GREATEST IN 10 MINS	1.03 (AUG 11 1975)	BRYCE CANYON
GREATEST IN 15 MINS	1.53 (SEP 3 1983)	WEST VALLEY
GREATEST IN 30 MINS	2.10 (AUG 8 1941)	OGDEN CANYON
GREATEST IN 1 HOUR	5.00 (AUG 16 1958)	MORGAN
GREATEST IN 3 HRS	5.00 (AUG 16 1958)	MORGAN
GREATEST IN 6 HRS	5.50 (SEP 7 1991)	NORTH OGDEN
GREATEST IN 12 HRS	6.00 (SEP 5 1970)	BUG POINT
GREATEST IN 24 HRS	8.40 (SEP 7-8 1991)	NORTH OGDEN
GREATEST WATER YR	98.37 (OCT 1983-SEP 1984)	ALTA
GREATEST WATER MONTH	25.45 (DEC 1983)	ALTA
DRIEST WATER YEAR	0.71 (OCT 1952-SEP 1953)	CALLAO

Snow (inches)

GREATEST IN 24-HOURS		
	55.5 (JAN 5-6 1994)	ALTA (MOUNTAINS)
	34.0 (FEB 9 1953)	KANOSH (VALLEYS)
GREATEST STORM	105.0 (JAN 24-30 1965)	ALTA
GREATEST MONTH	244.5 (DEC 1983)	ALTA
GREATEST SEASON	743.5 (NOV 1983-APR 1984)	ALTA
GREATEST YEAR	808.5 (SEP 1983-JUN 1984)	ALTA

Barometric Pressure/Sea Level (inches)

HIGHEST	31.13 (DEC 9 1956)	MILFORD
LOWEST	29.00 (APR 15 2002)	SALT LAKE CITY

Wind (peak gust)

HIGH-ELEVATION (MOUNTAIN) LOCATION (ABOVE 8,000')
124 MPH
SNOWBIRD RESORT HIDDEN PEAK 11,000' NOVEMBER 8, 1986

MID-ELEVATION (BENCH) LOCATION (5,000-8,000')
120 MPH
BOUNTIFUL BENCH 5,004' NOVEMBER 11, 1978

LOW-ELEVATION (VALLEY) LOCATION (BELOW 5,000')
113 MPH
BRIGHAM CITY AIRPORT 4226' APRIL 23, 1999

UPDATED 8/7/02

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Last Update: March 19, 2004