

LESSON: Utah's Meteorologists

INSTRUCTOR: Lori Dautre

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DISTRICT: Weber County

GRADE LEVEL: 2

CORE CURRICULUM

Science Standard 2: Earth and Space Science

Objective 3: Observe, describe and measure seasonal weather patterns and local variations.

Intended Learning Outcomes:

5. Students will understand and use basic concepts and skills.

Lesson Objective: 1.3.1 and 2 Compare and contrast the seasonal weather patterns during the school year. Analyze and interpret data such as temperature in different locations and different times.

INTRODUCTION

Background Information: Weather is the condition of the air that surrounds Earth. Meteorologists can predict the weather by using certain tools: a thermometer, which measures the temperature; a wind vane, which measures the wind speed; and a barometer, which measures air pressure.

Storms come from clouds, and they display themselves in many: rain (water falling from the sky), hail (ice chunks), snow (ice crystals), sleet (a mixture of rain and snow), tornados (violently destructive windstorms), and hurricanes (severe tropical storms that include heavy rain and wind).

Research Information:

Johnson, D., Johnson, R. (1999). Making Cooperative Learning Work. *Theory into Practice*, Vol. 38, # no. 2. Building Community though Cooperative Learning. (Spring 1999), pp. 67-73.

Formal cooperative learning is when students work together for one class period or several weeks to achieve shared learning goals and complete specific tasks and assignments. Informal cooperative learning is when students work together temporarily to achieve a joint learning goal. These groups may last only a few minutes. Cooperative learning teaches interdependence, individual accountability, face-to-face interaction, social skills, and group processing.

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Winn, J.A. (1994). Promises and Challenges of Scaffolded Instruction. *Learning Disability Quarterly*, Vol. 17, No. 1 (Winter 1994) pp. 89-104

Scaffolded instruction includes challenging students to engage in tasks that they are unable to complete independently, and providing the support needed to enable students to successfully carry them out.

INVITATION TO LEARN

Using clothing from different seasons, allow the students help you sort the clothing as they see fit. After sorting the clothes a few times, ask: "How could we sort the clothing for different seasons, weather, or climate depending on where you live."

INSTRUCTIONAL PROCEDURES

Local Weather:

1. Bring in a weather report from a newspaper or the Internet depicting the weather for the local areas around Utah.
2. Ask: "Would what you wear change if you lived in another area of Utah?"
3. As a class, pick a city in Utah in which to compare the area they live in.
4. Make a Venn diagram comparing the different ways people would dress. Discuss the differences and similarities.
5. Have the students record the Venn diagram and findings in their meteorologist otebooks.

The Weather of Two Cities:

1. To show the dynamics of the weather, record the temperature, cloud cover, precipitation of Logan and St. George for one week. Log onto www.ksl.com >Weather tab > St. George and Logan to collect data. This activity is best to do during the spring and winter months.
2. Discuss the difference in the weather. Talk about what could affect the changes in weather. Usually higher elevations receive more moisture and are colder. Lower elevations usually remain drier and warmer.
3. Have each class member build a mountain and a valley to show the differences in the climate:
 - a. Provide each student a piece of poster board 9"x11".
 - b. Cut the corner of the poster board out to look like Utah.

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- c. Provide each student a brown 5" circle with a dot in the middle.
 - d. Instruct the students to cut the circle to the middle point, fold into a cone, and glue the sides of the cone together.
 - e. Cut half-inch slits on the bottom of the cone and glue it to the poster board.
 - f. The cone represents the mountain, while the poster board represents the valley.
 - g. Have them label the top of the cone "mountain" Logan and the bottom of the poster board "valley" St. George.
4. Have the students pick one of the weather days recorded for Logan and St. George and decorate their mountain and valley to match the weather of that day using paint, clay, pipe cleaners, cotton, paper punch confetti, paper scarps, etc.
 5. Group students together by the day tracked they chose to make their model resemble. Allow groups to present all models to the class. Allow time for the students to record results in their meteorologist notebook.

Vacations in Utah:

1. Ask the students to bring in any hand-drawn pictures, photographs, or postcards from vacations in Utah.
2. Sort the pictures into categories selected by the students.
3. Ask: "How would we sort these pictures if we were to sort by seasons?"
4. Discuss the ways different areas look in the same season due to each area's climate (i.e. desert verses mountains).
5. Discuss how climate and season affect the types of vacations you take.
6. In their meteorologist notebook, have them record their ideal and worst vacation spot and what the weather would be.

Weather of the United States:

Once you have compared your local weather to other Utah areas, compare it to neighboring states. Provide each student with a paper. Discuss how the weather is different, the same, and what you would wear if you lived in other states. For example, a warm winter day in Utah may be a cold winter day in Evanston, WY. Taking the class on the Internet, check <http://www.worldweather.com>.

1. Compare the weather at home to cities in neighboring states. On their "United States Weather Tracker" paper, have the students record in one of the boxes the name of the city, the temperature, and the climate. Then in the adjacent box have the students draw a picture of themselves and what they would be wearing.
2. Using the Internet, show the students five other cities. Try to choose at least one city on

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- the east coast and one on the west coast to show the contrasts of the weather. Some fun cities could include Hawaii in the winter or Alaska in the spring. Have the students record each city on their "United States Weather Tracker" paper as they did in Step 1.
3. Staple each student's "United States Weather Tracker" paper to his/her meteorologist notebook.

Weather Around the world

1. After you have researching the United States, assign students to take home the "Global Weather Tracker" note and explain the assignment to parents.
2. Instruct students to find the weather in other countries
3. Once all of the students have returned their "Global Weather Tracking" place a large world map at the front of your class.
4. Instruct the students cut their "Global Weather Tracking" papers into city strips.
5. Instruct the students come up to the large world map one at a time or in small groups. Have students explain their findings of global weather to the class.
6. As the students finish each city strip, instruct them to tape their strip to the map.
7. Looking at each of the cities mentioned by the students, discuss what clothing would be appropriate for the temperatures and climates on each city strips.
8. Discuss how the weather may affect the activities in other countries compared to what activities the weather here at home affects what activities we can do.
9. Have the students choose where they would like to go in the world on a vacation. In their meteorologist notebook, have them record how the weather would affect what activities they would be doing in that countries.

LESSON MATERIALS

- "My Meteorologist Notebook " for each student
- One piece of poster board 9"x11" for each student
- Copy of a circle with a dot in the middle copied on brown art paper
- "United States Weather Tracker" paper
- "Global Weather Tracker" paper
- Map of Utah
- Map of the United States
- Map of the world

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1. Compare your local area to another country they have studied in their "My Meteorologist Notebook."
2. Ask: "How are they similar and different in temperature, climate, and precipitation?"
3. Determine understanding according to their answer.

POSSIBLE EXTENTIONS/ADAPTATIONS/INTEGRATION**Where Would You Travel?**

1. Compare two different vacation spots brought in by the class, or from your own trips.
2. Discuss the differences in temperature, climate, and precipitation.
3. After comparing, take a poll on where the students would like to go if they could go.
4. Instruct the students to draw where their ideal vacation would be in their "My Meteorologist Notebook."
5. Instruct the students to share their "My Meteorologist Notebook" with the class or a partner.
6. Repeat activity steps 1-3.
7. Next, instruct the students to draw where they would not like to vacation. Have them explain their reasoning, and what it would look like on their vacation.

How Does the Weather Affect Different Areas?

Repeat "The Weather of Two Cities" activity during different season. Using the season chosen in this activity discussion, refer to their "My Meteorologist Notebook" to show the difference in the same place during a different season.

What Does the Weather Do to Your Outfit?

1. Have the students draw what they would dress like in the fall, winter, spring and summer where you live in their "My Meteorologist Notebook."
2. Instruct students to choose one city from their "United States Weather Tracker."
3. Now have the students draw what it would look like in their chosen city during the fall, winter, spring, and summer.

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| RESOURCES: BOOKS, MEDIA, ARTICLES, WEB SITES, AND ORGANIZATIONS |
| BOOKS |
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| MEDIA |
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| ARTICLES |
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| WEB SITES |
| Retrieved from the World Wide Web on January 8, 2010: http://www.worldweather.com http://ksl.com/weather |
| ORGANIZATIONS |
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| FAMILY CONNECTIONS |
| Have students and their families find the ideal vacation spot during the season they are in. Have them explain why it would be ideal for them, and what the weather would be in that particular spot of the world. Have them return to class and share their findings. |
| LESSON AND ACTIVITY [TIME SCHEDULE] |
| <ul style="list-style-type: none"> • Each lesson is 55 minutes. • Each activity is 30 minutes. • Total lesson and activity time is 85 minutes. |

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1. Divide the participants into small groups (3-4 people).
2. Instruct groups to sort the postcards of Utah vacations they brought with them into two different piles. Each group will be sorted according to attributes decided by the group.
3. Instruct each group to discuss why they sorted them that way. They may make any changes to their sorts at this time.
4. Provide each group with a large Post-it chart. Instruct each group to make a Venn diagram showing how the two groups are similar and different.
5. Share each group's Venn diagram with the class.
6. Have them write findings in their notebooks, journals, or participant handbook.
7. Repeat 1- 3 with other postcards, or pictures from outside of Utah.
8. Compare the Venn diagrams from each activity.

Build a Mountain:

Have the participants make a mountain diagram following the directions found under "Build a Mountain" in the lesson.

ACTIVITY MATERIALS

- Postcards or pictures of vacation spots in Utah and outside of Utah provided by students
- White board markers for the Venn Diagram
- Participant notebooks or handbook
- 9"x11" poster
- 5" circle for them to trace
- Brown art paper
- Large Post-it note charts

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Prizes:

Lakeshore catalog:

1. SF-215 World map \$3.75 each (8-10) per person pg. #201
2. SF-210 USA map \$3.85 each (8-10) per person pg. #201

Black Lines

Dear Parents,

We have been studying how weather is different in other areas than where we live. We have looked at other states in class today to see how our weather is different from theirs. Our assignment today is to go online to www.worldweather.com and compare our weather to that of another continent. Please record your findings on the Global Weather Tracker paper provided, and return to class on the date due. Thanks for your help with this.

Global Weather Tracker

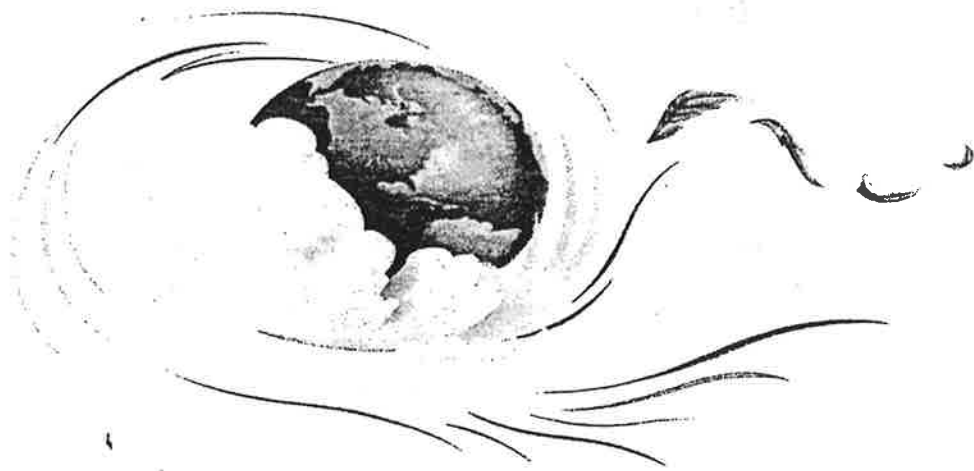
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|-----------------------------------|--|
| City: Temperature: Climate: | A drawing of what I would be wearing in this city: |
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| City: Temperature: Climate: | A drawing of what I would be wearing in this city: |

United States Weather Tracker

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|-----------------------------------|--|
| City: Temperature: Climate: | A drawing of what I would be wearing in this city: |
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My Meteorologist Notebook

By: _____



My Meteorologist Research Findings

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Circle for Mountain

