



Calf delinquents

Sec.: _____ Name: _____

Experiment: Isobars & Thunderstorms
(E. Science 9-16-2c)

Purpose: To make today's isobar map and to observe a video about thunderstorms.

Materials: Science 16 video
"Thunderstorms: Natures Fury"

Methods & Results:

Part A: Isobar Map Making.

1. Pressure patterns are found on weather maps by drawing lines representing certain pressures. These lines are called **isobars** because every point on the same line has the same pressure value. Each isobar separates pressures having values higher than the isobars from pressures having lower values.

2. Use the same strategies, in lab (9-15-2d) describing isotherm map making, for today's isobar map making. The major difference is that the map is made in increments of 4 millibars (mb). Use the copy of today's pressure map to draw in the isobars.

(Staple to this lab)

3. Below the date and time on the map please record local time and date of the map.

Part B: Thunderstorms: Natures Fury

As you watch the video answer the following questions.

1. Prior to our scientific understanding of thunderstorms, how did people explain how and when they occurred?
2. Who was among the first to observe the true nature of thunderstorms?
3. Who are meteorologists?
4. What do computers allow the meteorologists to observe?
5. How large are typical thunderstorms?
6. Which layer of the atmosphere does thunderstorms and weather form?
7. What term is given to hot, less dense, air that is rising?
8. Is the warm moist air that is starting to cool able to hold the water better or worse?
9. What are three major factors, or conditions, needed for a thunderstorm?
 - a.
 - b.
 - c.

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10. What does the cold front do to the warm air mass?
11. Even if the sky appears very clear is water vapor present?
12. List the stages of a thunderstorm development.
 - a.
 - b.
 - c.
13. As more water condense and combine together what do they form?
14. As the rain falls it forms a downdraft. What is it called when the downdraft is exceedingly strong?
15. How fast have downbursts been recorded as?
16. What is the dissipation stage of a thunderstorm?
17. In the United States what is the most deadly product of any weather phenomena?
18. What happens to the buildup of opposite charges in a thunderstorm?
19. Does most lightning form from the ground up or from the air down?
20. Why does thunder occur with lightning?
21. How does hail form?
22. What is the mass of the heaviest hailstone on record?
23. What will the rotating vortex of updrafts form?
24. What is the focus of meteorologists research these days?
25. What must meteorologists do with their ideas of thunderstorms and weather?
26. What two roles do thunderstorms have with our atmosphere?
 - a.
 - b.

Discussion:

- 1a. Describe the vivid example of where the Bible vividly shows that Jesus does have control over the weather (Luke 8: 22- 25).
- 1b. What question did Jesus have of his disciples at this time?
- 1c. What main point did the disciples learn from this experience (last verse)?