

Assignment #11

name:

MICROBURSTS

Go to <http://formontana.net> and then click on picture # 79.

1. Explain what a downburst is.
2. Explain what happened near Froid Montana on at 9 pm on June 16, 2010.
3. Find Froid on your Montana highway map. List two nearby towns.
4. How often do microbursts happen in eastern Montana, and why don't we hear about them?
5. Water molecules can be found in three phases; solid (ice), liquid, or gas (vapor). Since molecules that are vapor are moving the fastest, they need the most energy. Water molecules in the form of ice are moving slowest, and need the least energy. Whenever, water molecules change from one phase to another they either release energy or absorb energy, depending on whether they will be slowing down or speeding up. Circle one.
 - A. In order for sweat (mostly liquid water) to evaporate (change into vapor), the water molecules absorb heat from your skin, making your skin feel cooler.
 - B. In order for sweat (mostly liquid water) to evaporate (change into vapor), the water molecules release heat to your skin, making your skin feel warmer.
6. Clouds often form as air is forced up the slope of a mountain. During cloud formation water vapor changes to cloud crystals (tiny pieces of ice). If these crystals grow too large they begin to fall as snow. As these water molecules change from vapor to solid (fast to slow), do they absorb heat, or give off heat?
7. Will the phase change described in #6 make the air surrounding air warmer, or cooler?
8. With some thunderstorms the rain evaporates before it reaches the ground. Why does this make the surrounding air colder?
9. Why would this colder air slam into the ground?

10. What is the difference between a downburst and a microburst?
11. **Watch the 42-second “Microburst Demonstration” video.** What is the point of this demonstration?
12. In the video, what is the source of the cold blue water?
13. What does the cold blue water represent?
14. Cold water is heavier (more dense) than warmer water, and cold air is heavier than warmer air. Explain why.
15. Every time you open the fridge, the air inside of the fridge comes out. Where does it go? (THINK!)
16. During a microburst, where is the air coming from?
17. This type of storm was discovered by Ted Fujita, the man who came up with the scale for rating tornadoes based on the damage they cause. Explain how Fujita came to realize that there was such a thing as downbursts (and microbursts).
18. What is the point of the photo near the bottom of the web page?