

WIND

Go to <http://formontana.net> and then click on picture # 62. Look at the image and read the explanation below the image.

1. Look at the photo near the bottom of the web page. What is the purpose of the big pipe shown here?
2. Explain how a dam like this makes (generates) electricity.
3. Why does the air above the island get hotter than the air over the water during the middle of sunny summer days?
4. What happens to air above the island, as it gets hotter than the surrounding air above the water?
5. **Click on the link titled “Watch the Convection Video”.** You can watch it silently if necessary. The water represents air and the middle spot is like the island. What is used to make the middle spot become warmer in the demonstration?
6. Watch the other two spots as they start to flow toward the middle spot. This flow toward the rising red spot is similar to “wind”. Why do those spots flow toward the rising spot?
7. Go back to the web page with the photo of Canyon Ferry. Explain why cooler air from the dam often blows toward Cemetery Island on sunny summer days.
8. **Click on the Hot Link titled “Land and Sea Breezes”.** During the day when air is rising from the land, is the land considered to be an area of low pressure, or an area of high pressure?
9. If an area of high pressure is centered over Montana, does this mean that the air in our area is rising, . . . or sinking?

More WIND

Go to <http://formontana.net> and then click on picture # 43.

10. How fast in miles per hour do winds have to be in order to be called “hurricane force winds”?

11. What does the word “topography” mean as it is used on this web page?

12. Find the place shown in the image on your Montana Highway Map. Follow the Yellowstone River back into the park. Where does it start?

13. If you were traveling from Bozeman toward Billings on a winter night, as you go past Livingston which way would your car tend to be blown? (toward the right, or toward the left)

14. As the cold air in the park starts to sink, why does it flow toward Livingston?

15. **Click on the link titled “Watch the Convection II Video”.** You can watch it silently if necessary. How is the cold, blue water from the melting ice cube similar to the air from Yellowstone Park in the winter?

16. Why does the cold blue water sink?

17. Go back to picture #43. Why does air from the west pile up in the Bozeman area?

18. How does this piling up of air cause some amazing west winds to frequent Livingston?

Even more WIND

Go to <http://formontana.net> and then click on picture # 28.

19. Wind generally (usually) blows from west to east in Montana. What do we call these winds?

20. Explain how mountains cause some parts of Montana to be windier than others?

21. One of the windiest areas is along the Rocky Mountain Front, which runs from Cascade to Browning. Find this area on you Montana Highway Map. List three towns located on highway 287, which runs along the Rocky Mountain Front.

22. What is one good thing about using the wind to generate electricity?

23. What is one bad thing about it?

24. What are the 3 things needed to generate electricity?

25. How do coal-fired plants provide the motion needed to generate electricity? In other words, how does burning coal produce the same kind of motion as wind does when it turns the turbine?