Extra Credit Assignment

name: _____

Here's the deal. If you complete this assignment and hand it in before the end of the semester, the score that you earn will replace the lowest score that you have on a second quarter assignment. If you need a pass so that you can go to the library during your study hall, request one from Benson. WORK ALONE!

1. Go to www.formontana.net and select picture #91. Explain what "rock flour" is and tell how it is formed.

2. Why does rock flour stay suspended in the lake water during the summer, rather than sinking to the bottom?

3. Why does it finally settle to the bottom during the winter?

4. Explain what "varves" are.

5. What is the difference between the type of sediment deposited during the summer and the type deposited during the winter?

6. Go back to www.formontana.net and select picture #29. All the glaciers in Glacier Park melted during a warmer period after the last ice age. When was this warm period?

7. All of the glaciers present in Glacier Park today, formed and grew during the Little Ice Age. When was this cold period?

8. Go back to www.formontana.net and select picture #107. These photos are of an outcropping between Helena and Great Falls. How are these varves similar to tree rings?

9. Why were alternating layers of sand and clay deposited here, i.e., why isn't all sand or all clay?

10. In order for varves to form, what two conditions must be met.

11. Which color was formed during the winter, the lighter, or the darker layer?

12. Go back to www.formontana.net and select picture #42. What is the yellow stuff on the lake?

13. What is contained in each grain of pollen?

14. Where do many of the pollen grains that land on the lake end up?

15. How do scientist get the layers from the bottom of a lake out of the lake, so they can analyze them?

16. How do pollen grains embedded in the layers of sediment help scientists learn about past climates at this lake?

17. Go back to www.formontana.net and select picture #111. What is the focus of the Paleoecology Lab at Montana State?

18. What is charcoal and what does it tell scientists about the past?

19. How is ash from ancient volcanoes especially helpful in determining the age of the sediments?

20. Select the link, “layer of ash from the eruption of Mt. Mazama ”. How many centimeters thick was the ash in the core sample shown in the photo (count them)?

21. Go back to the previous web page. What types of materials in the core sample can be dated using Carbon-14 dating (radiocarbon dating)?

22. Use the Internet to find out what the term “proxy” (a.k.a. climate proxy) means. IN YOUR OWN WORDS, write a definition in the space below.

23. List five types of climate proxies in the space below. (Use the Internet.)

24. Explain how microscopic shells found in mud on the bottom of an ocean provide clues about past climates. (Use the Internet)

25. Explain how tree rings can provide clues about past El Ninos. (Use the Internet)