Web quest: Glaciers

Name _____

Procedure 1. Use the first link below to learn about ice cores and Antarctica by answering the questions that follow.

http://www.pbs.org/wgbh/nova/warnings/stories to make a webquest on ice core changes.

1. Initial Page: Ice cores reveal the past. Each layer of ice is _____ and records events such as _____ and _____.

2. Click on the icon for Ice Core Timeline. Choose "***Air Pollution***". Use the graphs to identify the levels of the following pollutants in 1900 and then in 2000:

Methane_____ Carbon Dioxide _____ Nitrates _____

3. In that time the world population rose from _____ people to _____ people.

4. Choose "***Global Warming***". How many years do these ice occurs cover? _____ What relationship between CO2, methane and warming does this graph indicate?

_____

What was the warmest period of the past 160, 000 years? _____

5. Choose "***Sea Storminess***". What may have happened to the Vikings?

_____

6. Choose "***Antarctic Almanac***" from the menu on the left of the webpage. What percent of the world's total ice does Antarctica contain? _____

7. How thick is the thickest ice? _____

8. What does the weight of the ice do to the shape of the earth? _____

9. Scroll down to "***Land***". What is the name of the mountain chain? _____ What is the annual mean temperature of Antarctica? _____

10. Scroll to "***Water***". How much precipitation does Antarctica receive per year? _____

11. What is the circumpolar current? _____

12. What would happen to world sealevels if the West Antarctic Ice Sheet were to melt?

_____ If the East sheet melted also? _____

13. Scroll to "***Vocabulary***". What is the Katabatic? _____

_____

14. Go back to top of page and choose '***Water World'*** from menu. Review the first 3 pictures that show the northeast US 20,000 years ago, if the West sheet melted and if the East sheet melted. Briefly describe the change in sealevel and find the approximate location of Montgomery, NY. How would our situation be different in each?

20,000 years ago: _____

_____

West sheet melt: _____

_____

East sheet melt: _____

_____

Procedure 2. Go to the webpage below and answer the following questions about glacial loss.

http://nsidc.org/data/docs/noaa/g00472_glacier_photos/index.html#repeat_photography

Enlarge the picture of the Muir Glacier.

Identify the dates photographs were taken. _____

Describe the ice loss and the features revealed by the retreat of the ice.

_____

_____

Procedure 3. View the pictures shown on each of the web pages and answer the simple questions about them.

1. http://epod.usra.edu/blog/2001/02/watching-a-glacier-move.html this EPOD picture shows movement of part of the Antarctic Ice Sheet. What are the speeds of the middle _____ and edges of the glacial ice sheet? _____

2. http://epod.usra.edu/blog/2002/04/collapse-of-the-larsen-b.html What happened to the Larsen B ice shelf? _____ . Include the date of the occurrence._____

3. http://epod.usra.edu/blog/2013/11/two-different-valleys-at-glacier-bay-alaska.html

In your own words, describe what the photograph shows.

_____

_____ _____

4. http://epod.usra.edu/blog/2003/01/snows-of-kilimanjaro.html What has happened to the "Snows of Kilimanjaro" in the past few decades? _____

What is the prediction for the glacial snows? _____

Procedure 4. How the global ice cover changes.

Go to http://www.nrmsc.usgs.gov/research/glacier_model.htm from the USGS site and watch the animation that shows both past glacial positions and predicts future positions. Summarize the change. Scroll down to the diagram of the Terrain and then to the diagram that indicates sun strength. Go back to the animation. Is there a connection among terrain height, sun strength and glacier position?

_____

_____

_____

Procedure 5:

Pick 3 from the list of glaciers on North America below and fill out the following information for the ones you chose:

Hubbard, South Cascade, Bering, Mendenhall, Malaspina, Juneau, Grinnell, Portage, Harding Icefield, Crowfoot, Wapta Icefield, Matanuska, Bacon, Guyot, LeConte

Glacier Name: Location: Approximate Length: Terminus(Where does it end) : Status: Is it advancing or retreating

Special features:

Where did it get its name:

Glacier Name:

Location:

Approximate Length:

Terminus(Where does it end) :

Status: Is it advancing or retreating

Special features:

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Glacier Name:

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