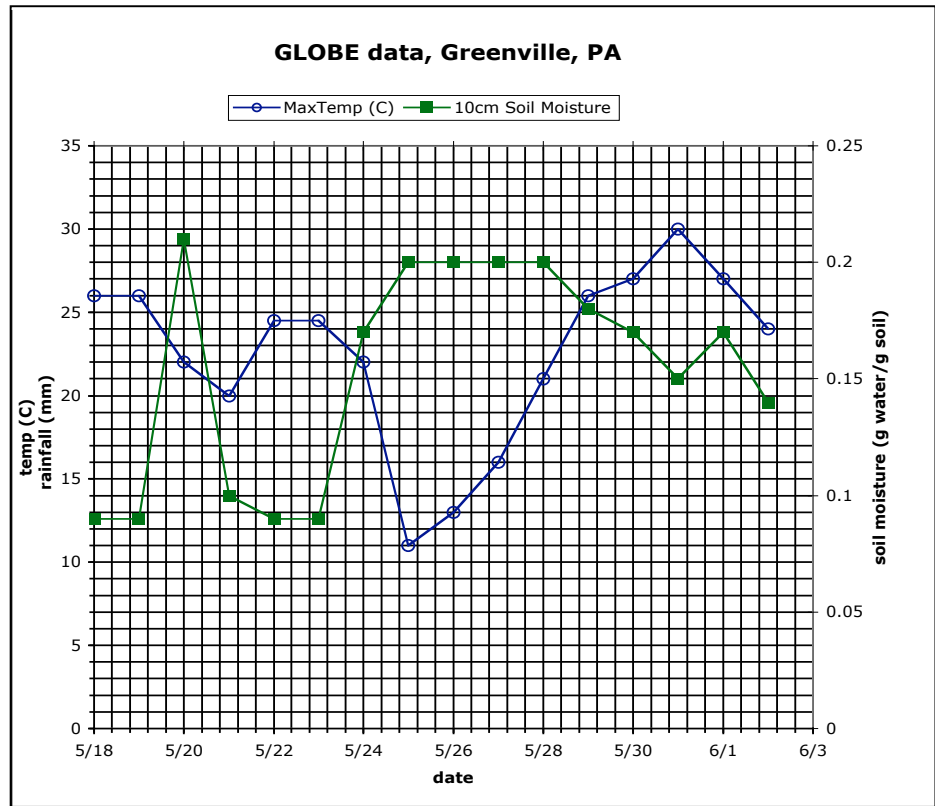


Earth Systems Assessment

Name _____

Part 1- Graphing and interpreting data



1. The graph above, shows the maximum air temperature and soil moisture at 10 cm depth during a 16 day period. The data to the right were used to make the graph. Do you think the graph shows a relationship between max air temperature and soil moisture? Explain.

Date	MaxTemp (C)	10cm Soil Moisture	Rainfall (mm)
5/18	26	0.09	0
5/19	26	0.09	10
5/20	22	0.21	0
5/21	20	0.1	0
5/22	24.5	0.09	0.4
5/23	24.5	0.09	0.1
5/24	22	0.17	33.8
5/25	11	0.2	1.6
5/26	13	0.2	1.6
5/27	16	0.2	0.8
5/28	21	0.2	0
5/29	26	0.18	0
5/30	27	0.17	0
5/31	30	0.15	0
6/1	27	0.17	2.8
6/2	24	0.14	0.4

2. Now plot the rainfall data for each of the 16 days on the same graph.

3. Looking at your graph, describe the relationship of the rainfall data to max air temperature and soil moisture.

4. Think about the time of year (refer to the dates) when these data were collected. While you don't necessarily know what it's like in Greenville, Pennsylvania, what might be some other factors affecting soil moisture that aren't shown in the graph?

Part 2- Drawing connections between local and global processes.

5. Today Earth system scientists are studying reservoirs and flows and trying to understand their impact on the Earth's environment. Here is an example. There is a fixed amount of water on Earth. That water is divided up into smaller parts called reservoirs. Earth's largest reservoir of water is in the ocean. Another reservoir is the water that is frozen in ice caps and glaciers. What are the other two major reservoirs of water on Earth that you have been investigating? (where else can you find water?)

6. Flow refers to the movement of water from one reservoir into another. Think about the graph and your answer to question #4.

a. Which reservoir do you think gains water in the spring? In other words, to which reservoirs does that spring soil moisture flow?

b. Which reservoir do you think gains water in the summer?

Part 3- Flows at Various Scales

Although you have studied data for just one location, the movement of water between reservoirs happens all over the Earth. During the Ice Ages, the reservoir of frozen water in glaciers, ice caps, and sea ice all increased, while other reservoirs, such as water in the oceans, decreased. Sea level was lower during the Ice Ages than it is now.

7. How do you think Earth's water reservoirs might change if Earth became a lot warmer than it is today?

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8. What else do you think would change if the water reservoirs changed due to a warmer Earth?

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