

Name _____ Date _____ Hour _____

Geographic Influences on Local Climate

A. Overview: You will investigate a climatic concept that affects the temperature of an area. There are many variables that affect the temperature and rainfall of an area, you will research an explanation for one specific variable.

Method:

1. You will be assigned a climatic pattern to investigate.
 - a. #1 - LATITUDE
 - b. #2 - ALTITUDE (Elevation)
 - c. #3 - LARGE BODIES OF WATER
2. Collect data from the Chart for Regional Climate information.
3. Choose data from various cities for comparison. The cities on the chart have been numbered to match the numbers of the variables. Only use the cities with the same number you have been assigned.
4. The variables have been isolated for you. For example, if you are comparing cities to see how latitude affects average monthly temperature, the cities should be of similar elevation and far from the ocean. If you are comparing cities to see how elevation affects average monthly temperature, they all should be at roughly the same latitude.
5. Most of the topics can be presented with a graph that has the months on the horizontal axis.

B. Approaching a question: How does average monthly temperature vary with latitude?

6. An effective way to answer the question above is to create a graph that plots several lines, each representing a location with a specific latitude. The graph should have months on the horizontal axis and average monthly temperature on the vertical axis.
7. It is important to select locations to compare that are different only in their latitude. Doing this allows you to minimize the influence of **confounding variables**. For example, comparing Spokane, Washington to San Francisco, California would not be meaningful because of other important differences.

Questions:

- What differences exist between Spokane and San Francisco that will influence average monthly temperature besides latitude?
- What differences exist between Spokane and Denver Colorado that will influence average monthly temperature besides latitude?

C. Researching YOUR variable

8. What is the variable that affects climate assigned to you? _____
9. Select 4 locations to compare that would reveal differences that are most significantly influenced by your variable. Fill in the data table below.

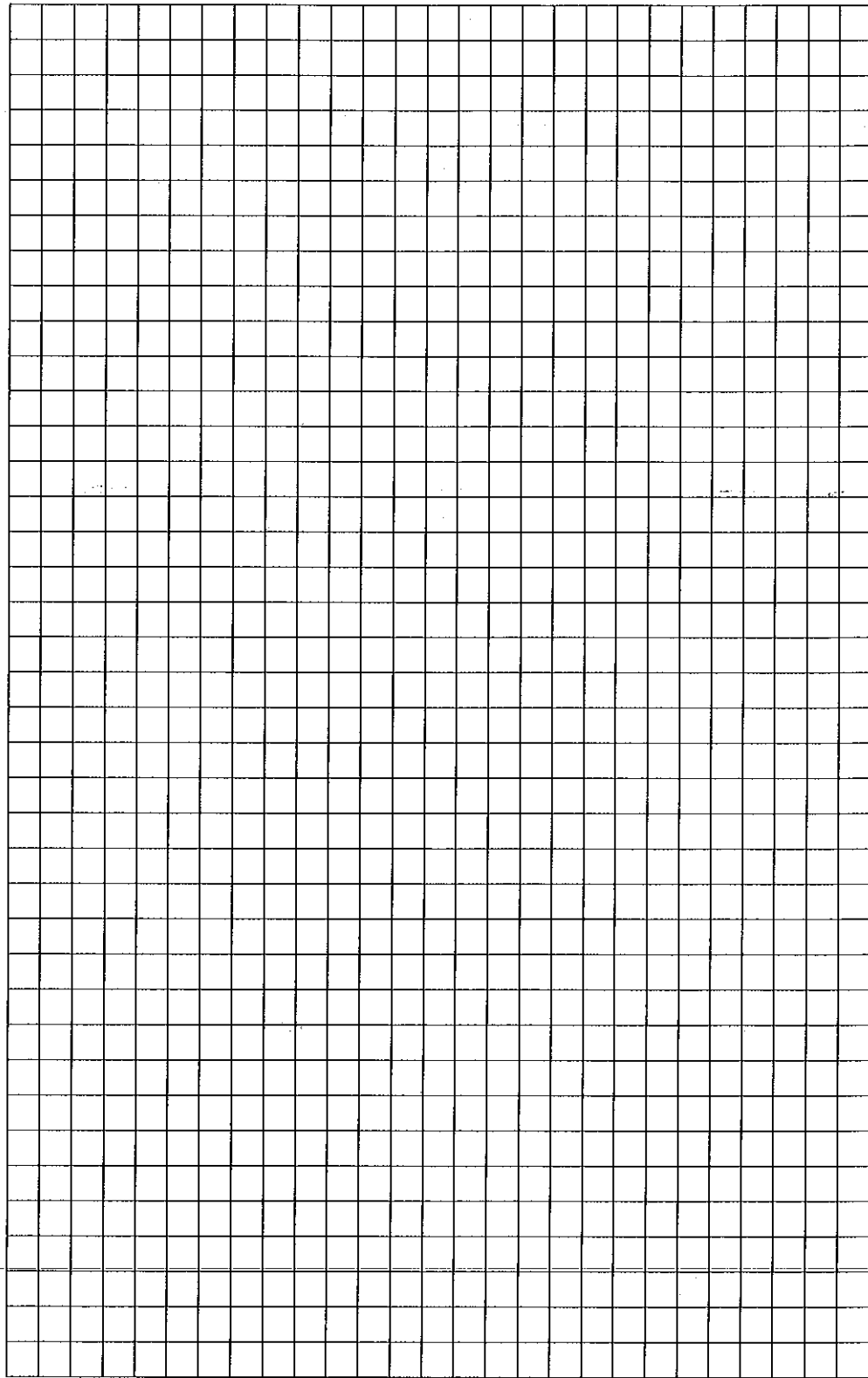
Locations	Longitude	Latitude	Elevation
A.			
B.			
C.			
D.			

Temperature Data for each Location - Complete the table using the information in the chart.

Month of the Year	Location A Temperatures	Location B Temperatures	Location C Temperatures	Location D Temperatures
January				
February				
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				

D. Graphing the data

10. Create a LINE graph that shows your 4 locations plotted on a Time vs. Temperature graph. (Months of the Year is the Time.)
11. You will need a key to show each of the 4 locations on the graph. Use colored pencils for the different location lines.
12. Double check that your graph includes a title, labels/units on the x and y axes, and proper scale.



Follow Up Questions:

13. Looking at your graph, do you notice any patterns? Describe the patterns.

14. What is the general effect that your variable has on climate? Does your data support this idea? Explain.