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Date _____

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TERRESTRIAL BIOME CLIMATOGRAPHS



So here's the time to connect the dots ... figuratively and literally. We just finished the first third of this topic by learning about climate and re-living the glory days of Earth Science. This allows for a smoother transition into our next wonderful APES journey: terrestrial biomes and aquatic life zones (can you feel the excitement brewing?) So do you remember how climate is mainly determined by the average temperatures, temperature range, and the amount of precipitation a location receives? Well of course you do (it's on the top of page 34). It just so happens that just like climate, a terrestrial biome is classified based on the average temperatures, temperature range, and the amount of precipitation a location receives. Go figure! A coincidence? I think not... The climate of a location has a ginormous (love that word) effect on the types of organisms that can inhabit an area. So let me reintroduce some of the definitions from the this topic ... Brace yourself...

Biomes are large-scale ecosystems with specific climate characteristics that are inhabited by specific types of plants (**flora**) and animals (**fauna**). Biomes are **climax communities**; biological communities that take a very long time to establish themselves to exist in a balanced state (equilibrium). Now remember, individual biomes do have very clear characteristics, but rarely are their boundaries very distinct. Most biomes blend into each other through transition zones known as **ecotones**.

A **climatograph**, climograph, climatogram, or climogram is a graphical way to illustrate the climate of a location.

To begin our journey into the realm of biomes you will create a few climatographs that represent some of the major biomes that exist of the Earth. Your ultimate goal is to be able to observe and analyze the data within a climatograph, and then be able to determine what geographic location and biome it is representative of.

Procedure:

1. You will be responsible for completing **4 climatographs** for the following 4 locations:
(Near the end of the assignment you will determine the climatograph that matches each city.)

Lima, Peru

Singapore, Malaysia

Barrow, Alaska

Nairobi, Kenya

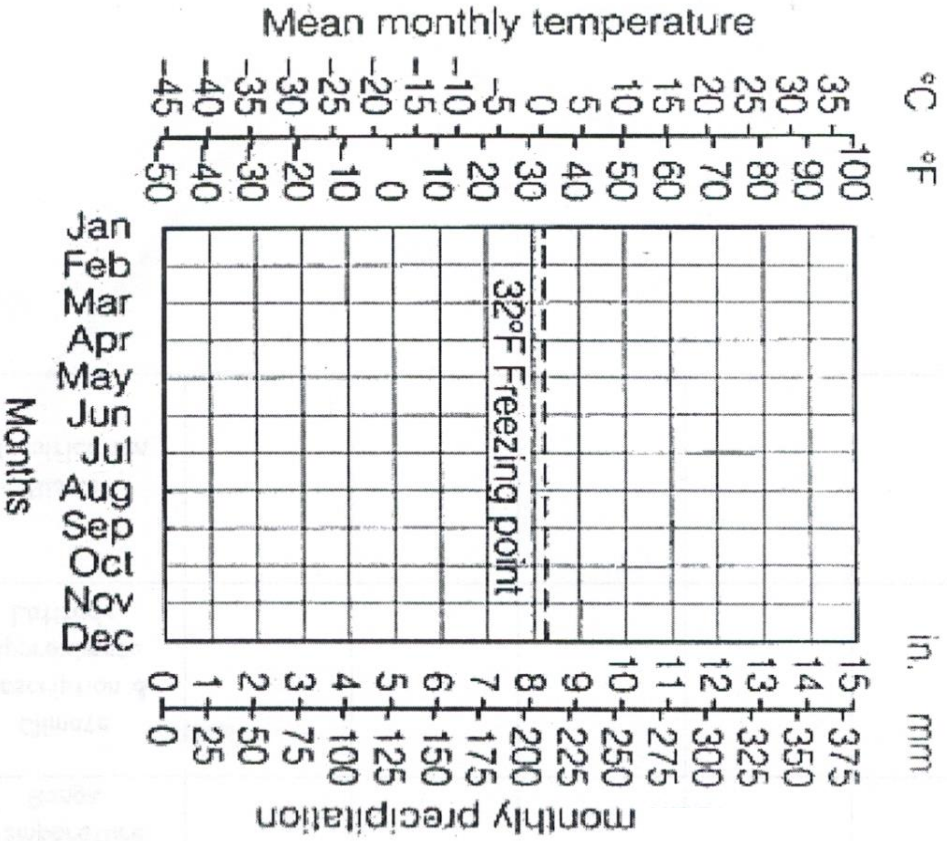
2. Average monthly temperatures have been provided in the data charts.
Use a red colored pencil to plot the data that represents these temperature values.
Connect the points with a smooth line.
3. Monthly precipitation totals have also been provided. Usually precipitation is plotted as a bar graph.
In this activity, use a blue colored pencil to plot the points and then connect with a smooth line.
After connecting the points plotted, shade under the line with the same color blue.

Steps 4-10 will be completed on the Data Chart shown below.

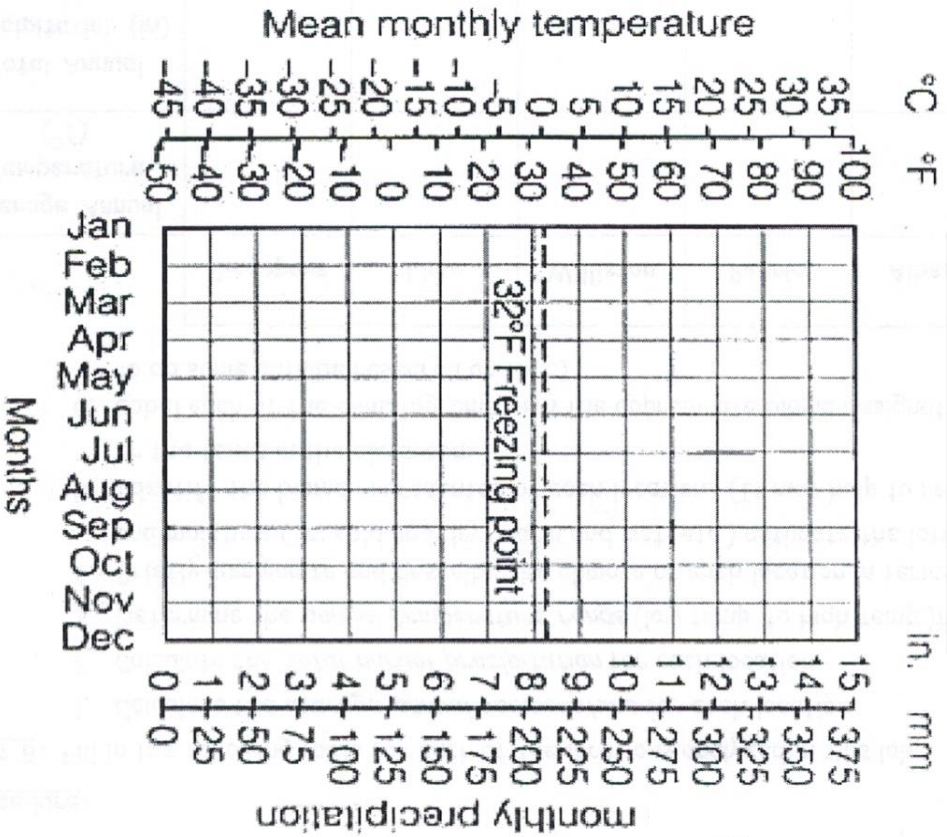
4. Calculate the average annual temperature for each location.
5. Calculate the total annual precipitation for each location.
6. Determine the annual temperature range – represent on chart as low temperature to high temperature (do not subtract low from high).
7. Briefly summarize the general temperature and moisture conditions of each location.
Use words like hot, cold, moderate, average, wet, dry
8. Indicate the city that each climatograph represents.
9. Research to find the latitudes of each of the locations.
10. Determine the type of the biome that each location would be classified as.

	Climatograph 1	Climatograph 2	Climatograph 3	Climatograph 4
Average Annual Temperature (°F)	80.3	10.0	66.3	65.7
Total Annual Precipitation (inches)	93.4	4.1	34.4	0.4
Annual Temperature Range	79.0→81.3	-17.5→39.7	62.1→69.3	59.5→73.4
General Climate Description	hot and wet	cold and dry	warmer temperate short wet & long dry seasons	warm and dry
City and Country	Singapore, Malaysia	Barrow, Alaska	Nairobi, Kenya	Lima, Peru
Latitude	1°N	71°N	1°S	12°S
Biome Classification	tropical rainforest jungle	arctic tundra polar grassland	savanna tropical grassland	rainshadow desert

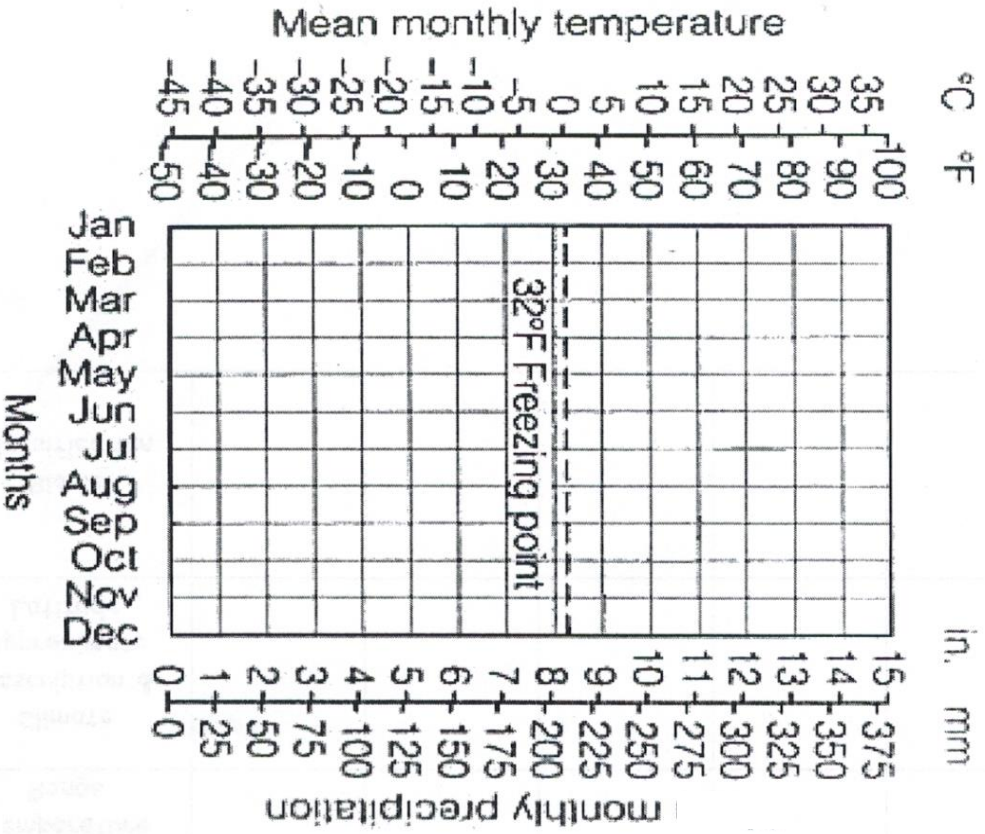
Climatograph 1



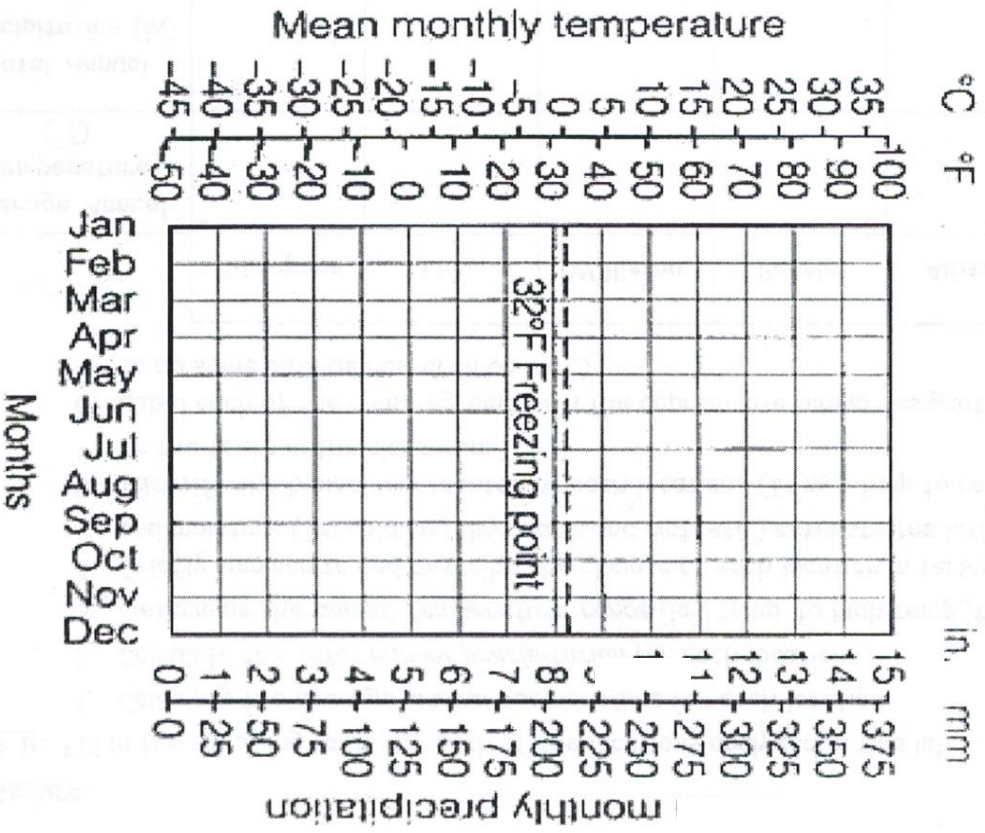
Climatograph 2



Climatograph 3



Climatograph 4



Data Charts:

Climatograph 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°F)	79.0	79.9	80.4	81.0	81.3	81.1	80.8	80.4	80.4	80.6	79.9	79.0
Precipitation (inches)	9.8	6.5	7.1	7.3	6.5	6.5	7.1	6.4	6.5	7.7	10.3	11.7

Climatograph 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°F)	-13.9	-17.5	-14.3	-0.4	19.8	34.5	39.7	38.1	30.9	14.7	-0.4	-11.2
Precipitation (inches)	0.1	0.1	0.1	0.2	0.1	0.3	0.9	1.0	0.6	0.4	0.2	0.1

Climatograph 3

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°F)	67.5	68.4	69.3	68.4	66.4	64.0	62.1	63.0	65.5	67.6	66.7	66.6
Precipitation (inches)	1.9	2.0	3.6	7.5	5.7	1.4	0.6	0.8	0.8	2.0	5.0	3.1

Climatograph 4

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temperature (°F)	72.0	73.4	72.5	69.6	65.3	61.5	60.3	59.5	60.3	62.1	64.4	67.3
Precipitation (inches)	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0