

## CREATING AND COMPARING CLIMOGRAPHS

### Performance Standard (17A/17B).H

Complete a climograph for two cities of approximately the same latitude in the United States, compare the locations and climates of the two cities, and explain in a short essay the differences in the two cities' climates accordingly:

- *Knowledge:* Know how to construct a climograph and determine data for cities; identify cities represented by climographs (Seattle and Minneapolis).
- *Reasoning:* Use a climograph to compare locations and climates of Seattle and Minneapolis.
- *Communication:* Produce a 100-150 word essay that is well-focused, well-organized, and well-detailed; express all ideas in a way that provides evidence of knowledge and reasoning processes.

### Procedures

1. *In order to locate, describe and explain places, regions, and features on Earth (17A) and analyze and explain characteristics and interactions of Earth's physical systems (17B)*, students should experience sufficient learning opportunities to develop the following skills:
  - Demonstrate understanding of how to display spatial information by constructing maps, graphs, diagrams, and charts to display spatial information (e.g., choropleth maps, climographs, population pyramids).
  - Analyze climographs for selected places and suggest reasons for similarities and differences in climates (e.g., use a line to represent average monthly temperatures and a vertical bar to show average monthly precipitation).
2. Have students review and discuss the assessment task and how the rubric will be used to evaluate their work.
3. Have students read and follow the instructions for completing the two climographs provided with this assessment item.
4. Ask students to identify which city is represented by each climograph by circling its name below the climograph.
5. Ask students to write a paragraph using the climographs to compare the locations and climates of Minneapolis and Seattle. Students should explain two climatic differences that result from the location of the cities.
6. Evaluate each student's work using the Social Science Rubric as follows and add the scores to determine the performance level:
  - *Knowledge:* Construction of the climograph and the determination of data for cities was complete and correct; Minneapolis (data set A) and Seattle (data set B) were identified correctly.
  - *Reasoning:* Analysis and comparisons of the two cities using the climograph was thorough and correct; data were used correctly to explain that although both cities have about the same latitude, Seattle has a warmer and wetter climate than Minneapolis because it has a coastal location, explanation of the factors related to prevailing winds, the influence of water and land control, physical geography, and the movement of storm systems was complete and accurate.
  - *Communication:* The essay was well-focused, well-organized, and well detailed; the knowledge and reasoning were accurately and effectively communicated in the essay.

### Examples of Student Work follow

### Time Requirements

- One class period

### Resources

- Instructions, data sets, and climographs provided
- Black, red and blue marking pens or pencils
- Map of United States
- Social Science Rubric

## CREATING AND COMPARING CLIMOGRAPHS WORKSHEET

### Instructions for completing the climographs

The following data sets A and B (average monthly temperatures and precipitation) are for the cities of Seattle, Washington and Minneapolis, Minnesota. Use this data to complete Climograph A and Climograph B. Make sure to display Data Set A on Climograph A and Data Set B on Climograph B. After you have completed your climographs, identify which city is represented by each climograph by circling its name below the climograph.

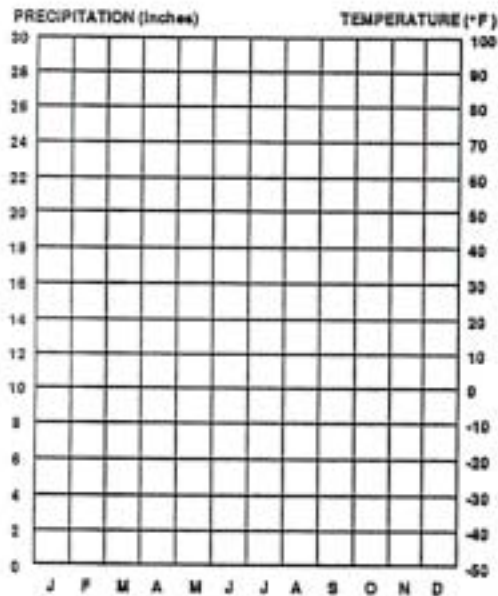
#### DATA A

Month	J	F	M	A	M	J	J	A	S	O	N	D
Temperature (°F)	11	18	29	46	59	68	73	71	61	50	33	19
Precipitation (Inches)	0.8	0.9	1.7	2.1	3.2	4.1	3.5	3.6	2.5	1.9	1.3	0.9

#### DATA B

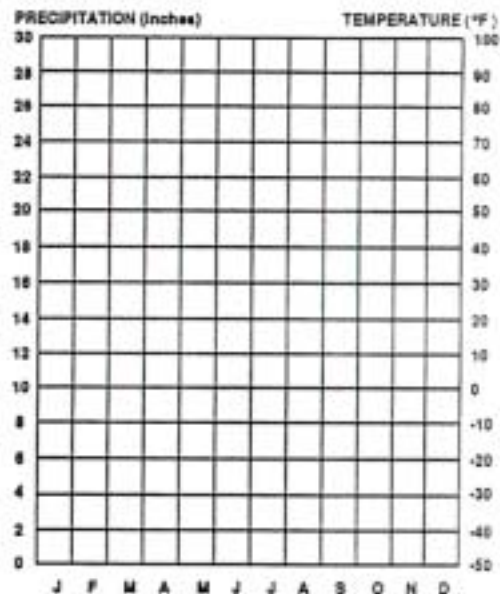
Month	J	F	M	A	M	J	J	A	S	O	N	D
Temperature (°F)	39	43	44	49	55	60	65	64	60	52	45	41
Precipitation (Inches)	6.0	4.2	3.6	2.4	1.6	1.4	0.7	1.3	2.0	3.4	5.6	6.3

**CLIMOGRAPH A**



CIRCLE ONE:  
**SEATTLE**  
**MINNEAPOLIS/ST. PAUL**

**CLIMOGRAPH B**



CIRCLE ONE:  
**SEATTLE**  
**MINNEAPOLIS/ST. PAUL**

I said that climograph A was Minneapolis/St. Paul. I said that because that is placed in a central area and that would have more of a temp. difference and not as much rain. Seattle had more rain because it was close to the border line, and it was on the west coast. The temp. rates and the rain are two big major differences between the two cities. I believe that the center cities won't get as much rain because they're not near the edge. I believe that the west cities don't have a major temp. change because they are on the edge so the weather doesn't change much. It's colder in Seattle because it's close to the edge. Minneapolis is in the center so it's warmer.

# CREATING AND COMPARING CLIMOGRAPHS WORKSHEET

"Meets" (page 2)

## Instructions for completing the climographs

The following data sets A and B (average monthly temperatures and precipitation) are for the cities of Seattle, Washington and Minneapolis, Minnesota. Use this data to complete Climograph A and Climograph B. Make sure to display Data Set A on Climograph A and Data Set B on Climograph B. After you have completed your climographs, identify which city is represented by each climograph by circling its name below the climograph.

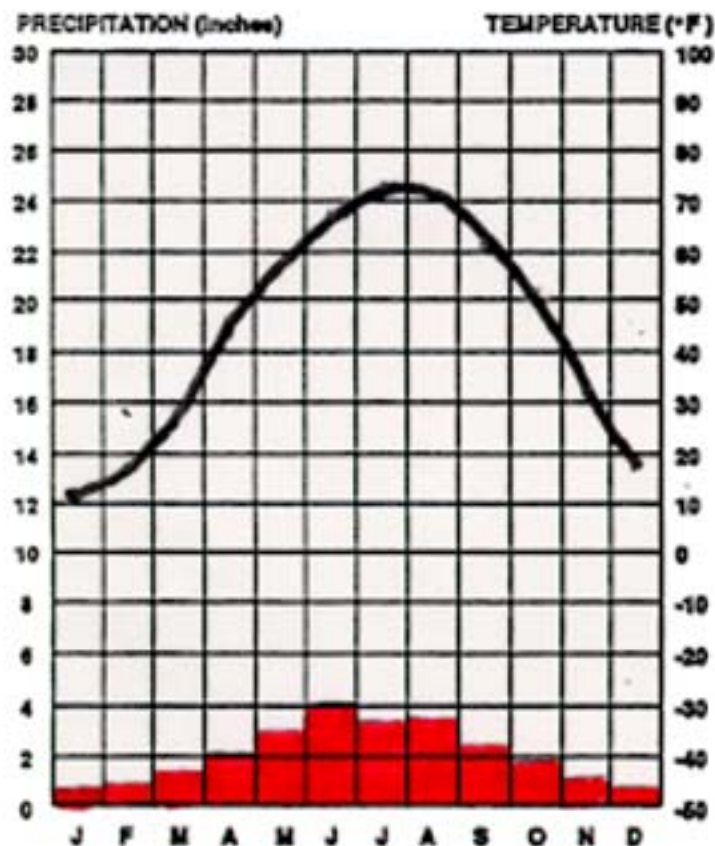
### DATA A

Month	J	F	M	A	M	J	J	A	S	O	N	D
Temperature ( $^{\circ}$ F)	11	18	29	46	59	68	73	71	61	50	33	19
Precipitation (inches)	0.8	0.9	1.7	2.1	3.2	4.1	3.5	3.6	2.5	1.9	1.3	0.9

### DATA B

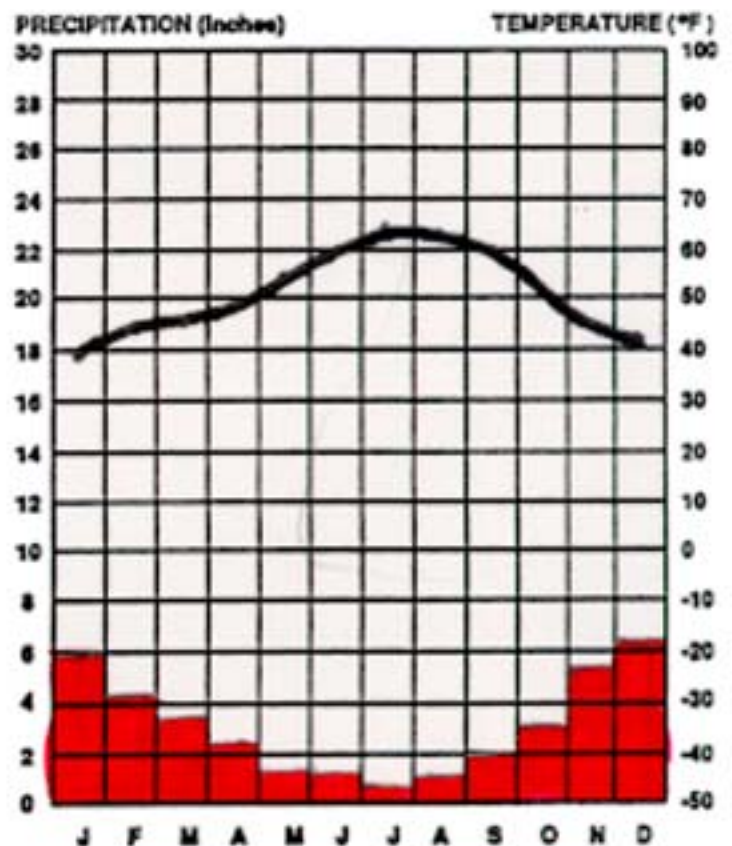
Month	J	F	M	A	M	J	J	A	S	O	N	D
Temperature ( $^{\circ}$ F)	39	43	44	49	55	60	65	64	60	52	45	41
Precipitation (inches)	6.0	4.2	3.6	2.4	1.6	1.4	0.7	1.3	2.0	3.4	5.6	6.3

### CLIMOGRAPH A



CIRCLE ONE:  
 SEATTLE  
 MINNEAPOLIS/ST. PAUL

### CLIMOGRAPH B



CIRCLE ONE:  
 SEATTLE  
 MINNEAPOLIS/ST. PAUL

Seattle, WA is slightly farther North than Minneapolis/St. Paul, MN.

However, Seattle is right next to a body of water, the Puget Sound. And ~~Minneapolis~~ Minneapolis/St. Paul is "land-locked". Because of these differences, their temperatures and precipitation levels differ.

Warm air currents ~~to~~ make Seattle generally warm year-round. In Minneapolis/St. Paul is land-locked, they have no ~~water~~ air currents from water, so they're ~~climate~~ temperatures are temperate year-round. They also have somewhat wetter summers than Seattle. But since Seattle is next to a body of water, its "rainy season" is in the winter, instead of in the summer like Minneapolis, MN.

# CREATING AND COMPARING CLIMOGRAPHS WORKSHEET

"Exceeds" (page 2)

## Instructions for completing the climographs

The following data sets A and B (average monthly temperatures and precipitation) are for the cities of Seattle, Washington and Minneapolis, Minnesota. Use this data to complete Climograph A and Climograph B. Make sure to display Data Set A on Climograph A and Data Set B on Climograph B. After you have completed your climographs, identify which city is represented by each climograph by circling its name below the climograph.

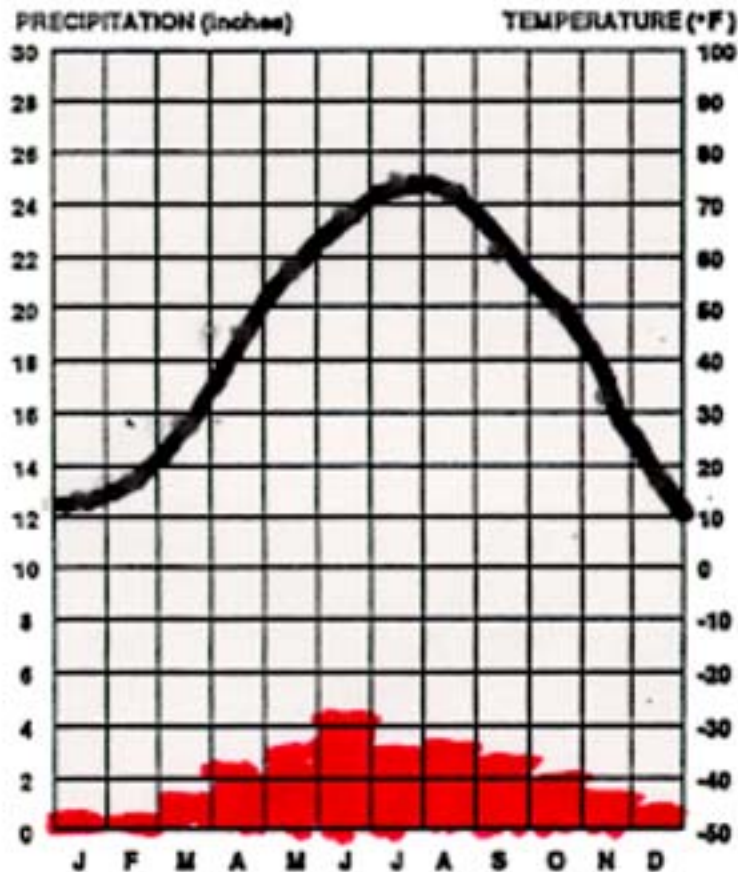
### DATA A

Month	J	F	M	A	M	J	J	A	S	O	N	D
Temperature ( $^{\circ}$ F)	11	18	29	46	59	68	73	71	61	50	33	19
Precipitation (Inches)	0.8	0.9	1.7	2.1	3.2	4.1	3.5	3.6	2.5	1.9	1.3	0.9

### DATA B

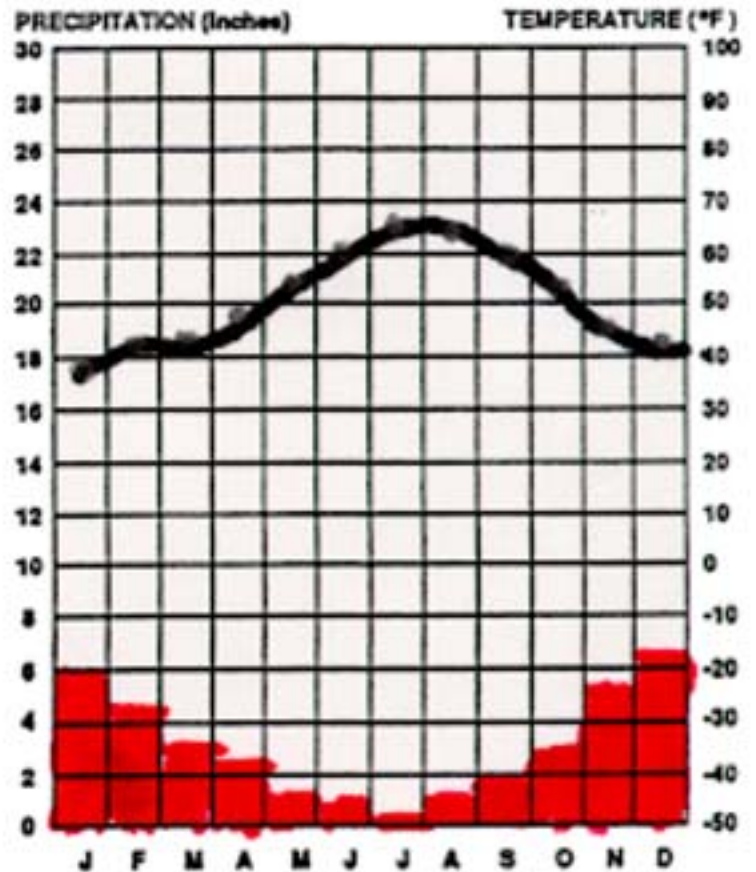
Month	J	F	M	A	M	J	J	A	S	O	N	D
Temperature ( $^{\circ}$ F)	39	43	44	49	55	60	65	64	60	52	45	41
Precipitation (Inches)	6.0	4.2	3.6	2.4	1.6	1.4	0.7	1.3	2.0	3.4	5.6	6.3

### CLIMOGRAPH A



CIRCLE ONE:  
 SEATTLE  
 MINNEAPOLIS/ST. PAUL

### CLIMOGRAPH B



CIRCLE ONE:  
 SEATTLE  
 MINNEAPOLIS/ST. PAUL