

2025 MCAS Sample Student Work and Scoring Guide

Grade 5 Science and Technology/Engineering Question 7: Constructed-Response

Reporting Category: Earth and Space Science

Practice Category: Mathematics and Data

Standard: [3.ESS.2.2](#) Obtain and summarize information about the climate of different regions of the world to illustrate that typical weather conditions over a year vary by region.

Item Description: Analyze climate data to compare the temperatures in two cities and describe two ways the climate in one city is different from the climate in the other city.

This item can be found in the released item sets on the [MCAS Resource Center](#).

Scoring Guide

Select a score point in the table below to view the sample student response.

Score*	Description
3A	The response demonstrates a thorough understanding of interpreting climate data of different regions. The response correctly compares the low temperatures in both cities in January to the low temperatures in both cities in July and uses climate data from the graphs to support the answer. The response also clearly describes two ways July and August in Boston are different from July and August in Phoenix and uses climate data from the graphs to support the answer.
3B	
2	The response demonstrates a partial understanding of interpreting climate data of different regions.
1	The response demonstrates a minimal understanding of interpreting climate data of different regions.
0	The response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.

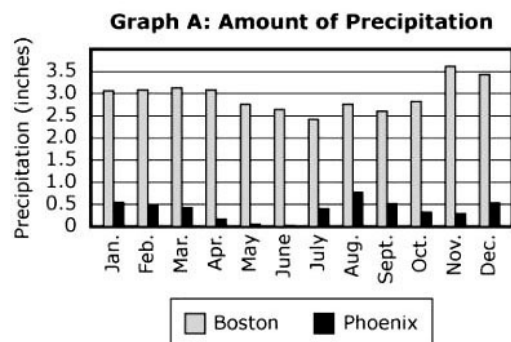
*Letters are used to distinguish between sample student responses that earned the same score (e.g., 3A and 3B).

Score Point 3A

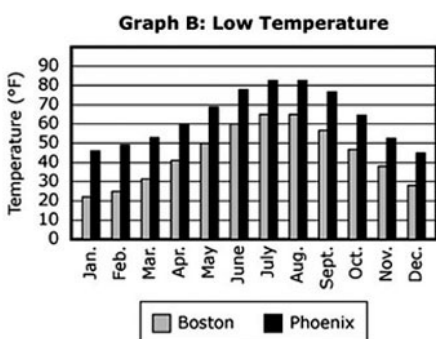
A group of students compared the climates of Boston, Massachusetts, and Phoenix, Arizona. The students created graphs showing the monthly averages for the amount of precipitation, low temperature, and hours of sunshine for each city.

Precipitation Data

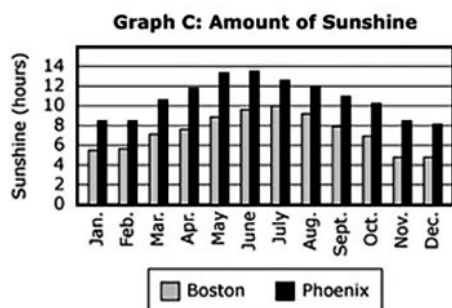
Graph A shows the average amount of precipitation for each month in Boston and in Phoenix.

**Temperature Data**

Graph B shows the average low temperature for each month in Boston and in Phoenix.

**Sunshine Data**

Graph C shows the average hours of sunshine per day for each month in Boston and in Phoenix.



This question has two parts.

The students compared the climates of Boston and Phoenix in summer and winter.

Part A

Compare the low temperatures in both cities in January to the low temperatures in both cities in July. Use climate data from the graphs to support your answer.

The low temperature in Phoenix in January was about 47 degrees Fahrenheit, while Boston was at about 21 degrees in January. Boston was about 67 degrees Fahrenheit in July, while Phoenix was about 82 in July. So I know that Phoenix is a much warmer place than Boston, as well as July is a much warmer month than January.

Part B

Describe **two** ways July and August in Boston are different from July and August in Phoenix. Use climate data from the graphs to support your answer.

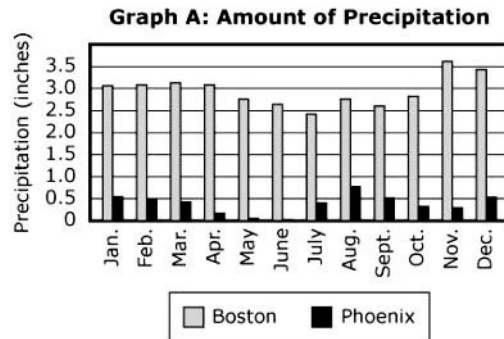
They are different because, in Phoenix, there is barely any precipitation in July there is only 0.4 inches, and in August there is only about 0.8 inches! But in Boston the precipitation is much higher, in July it is 2.4 inches, and in August it is about 2.8 inches of precipitation! Also, in Phoenix the hours of sun is longer than the hours of sun in Boston. For example, the hours of sun in July, in Phoenix are about 12.5 and in August they are about 12 hours of sunshine. But in Boston there are only about 10 hours of sunshine in July, and only about 9 in August! Those are two differences.

Score Point 3B

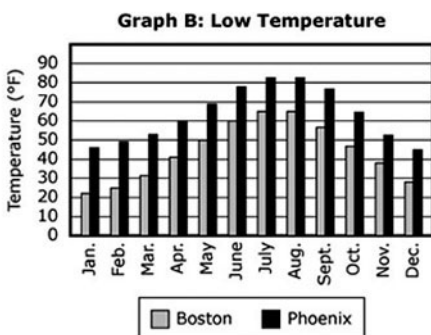
A group of students compared the climates of Boston, Massachusetts, and Phoenix, Arizona. The students created graphs showing the monthly averages for the amount of precipitation, low temperature, and hours of sunshine for each city.

Precipitation Data

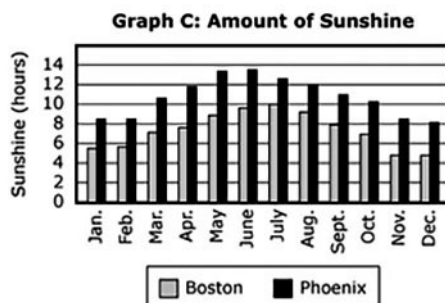
Graph A shows the average amount of precipitation for each month in Boston and in Phoenix.

**Temperature Data**

Graph B shows the average low temperature for each month in Boston and in Phoenix.

**Sunshine Data**

Graph C shows the average hours of sunshine per day for each month in Boston and in Phoenix.



This question has two parts.

The students compared the climates of Boston and Phoenix in summer and winter.

Part A

Compare the low temperatures in both cities in January to the low temperatures in both cities in July. Use climate data from the graphs to support your answer.

Phoenix had a low temperature of 45 degrees in January, according to graph B, and a low of 82 degrees in July. Boston had a low temperature of 22 degrees in January, and a low of 65 degrees in July. The low temperatures in Phoenix are much higher than in Boston, meaning the climate is warmer in Phoenix than Boston.

Part B

Describe **two** ways July and August in Boston are different from July and August in Phoenix. Use climate data from the graphs to support your answer.

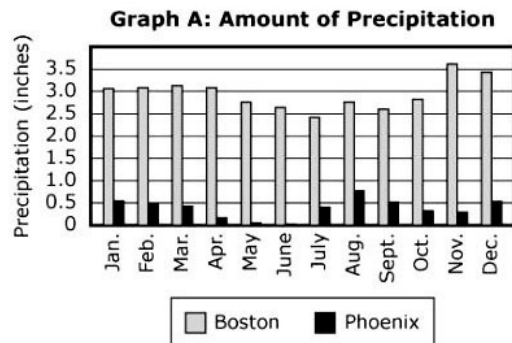
July and August are different in Phoenix and Boston. For example, Graph A shows in July it rained less than 0.5 inches in Phoenix. During August, in Phoenix it rained 0.8 inches. But in Boston, it rained almost 2.5 inches during July, and 2.7 inches during August. Graph B shows the low temperature in Phoenix was 82 degrees in July, and August. In Boston, the low temperature was 65 degrees in July and August. Phoenix is much warmer and gets less rainfall than Boston.

Score Point 2

A group of students compared the climates of Boston, Massachusetts, and Phoenix, Arizona. The students created graphs showing the monthly averages for the amount of precipitation, low temperature, and hours of sunshine for each city.

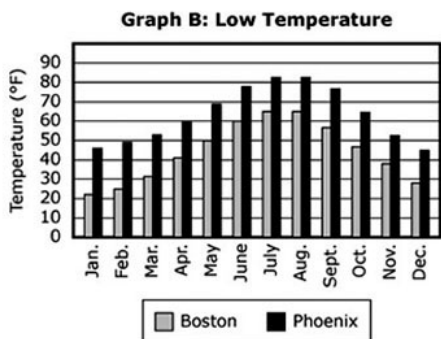
Precipitation Data

Graph A shows the average amount of precipitation for each month in Boston and in Phoenix.



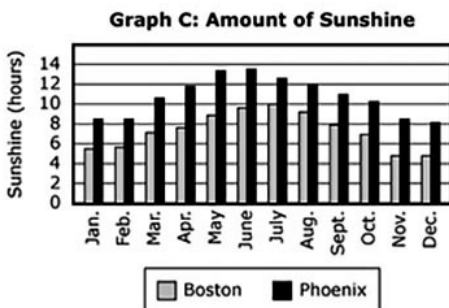
Temperature Data

Graph B shows the average low temperature for each month in Boston and in Phoenix.



Sunshine Data

Graph C shows the average hours of sunshine per day for each month in Boston and in Phoenix.



This question has two parts.

The students compared the climates of Boston and Phoenix in summer and winter.

Part A

Compare the low temperatures in both cities in January to the low temperatures in both cities in July. Use climate data from the graphs to support your answer.

Phoenix's low temperatures in January is 45 degrees, and Boston's is 22 degrees. In July, Phoenix's low temperature is 83 degrees, and Boston's is 65 degrees. Phoenix is hotter than Boston.

Part B

Describe **two** ways July and August in Boston are different from July and August in Phoenix. Use climate data from the graphs to support your answer.

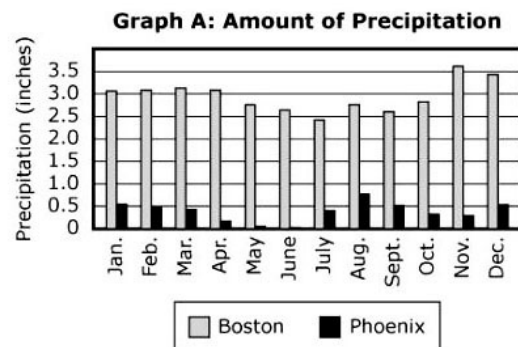
For one thing, the heat difference is huge. Phoenix is so much hotter than Boston. And secondly, Boston has much more precipitation than Phoenix. Phoenix has almost no inches.

Score Point 1

A group of students compared the climates of Boston, Massachusetts, and Phoenix, Arizona. The students created graphs showing the monthly averages for the amount of precipitation, low temperature, and hours of sunshine for each city.

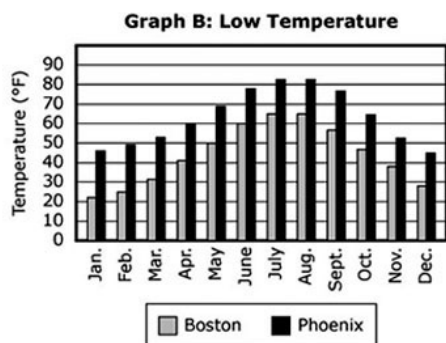
Precipitation Data

Graph A shows the average amount of precipitation for each month in Boston and in Phoenix.



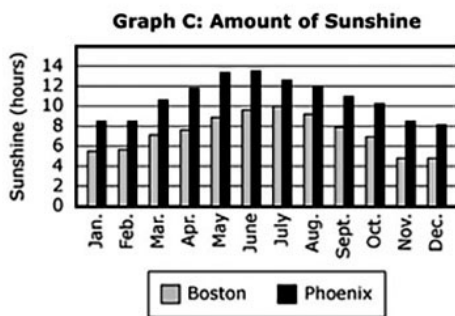
Temperature Data

Graph B shows the average low temperature for each month in Boston and in Phoenix.



Sunshine Data

Graph C shows the average hours of sunshine per day for each month in Boston and in Phoenix.



This question has two parts.

The students compared the climates of Boston and Phoenix in summer and winter.

Part A

Compare the low temperatures in both cities in January to the low temperatures in both cities in July. Use climate data from the graphs to support your answer.

January in Boston is about, 20 degrees Fahrenheit, but in Phoenix it's about, 45 degrees Fahrenheit. Phoenix has a higher temperature in January than in Boston. July in Boston is about, 65 degrees Fahrenheit, but in Phoenix it's about 81 degrees Fahrenheit. Therefore, it's warmer in Phoenix than in Boston.

Part B

Describe **two** ways July and August in Boston are different from July and August in Phoenix. Use climate data from the graphs to support your answer.

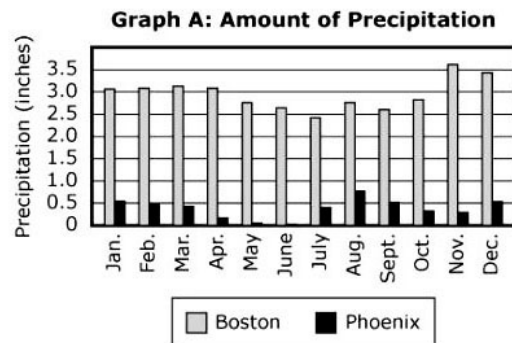
August in Boston is about, the same temperature in July, and August in Phoenix is about the same temperature in July as well.

Score Point 0

A group of students compared the climates of Boston, Massachusetts, and Phoenix, Arizona. The students created graphs showing the monthly averages for the amount of precipitation, low temperature, and hours of sunshine for each city.

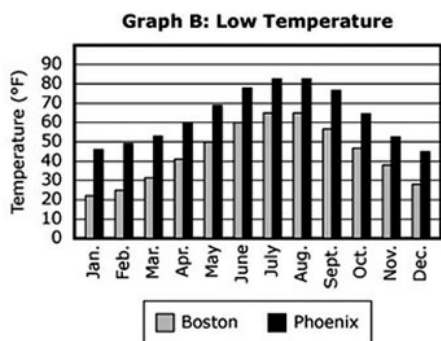
Precipitation Data

Graph A shows the average amount of precipitation for each month in Boston and in Phoenix.



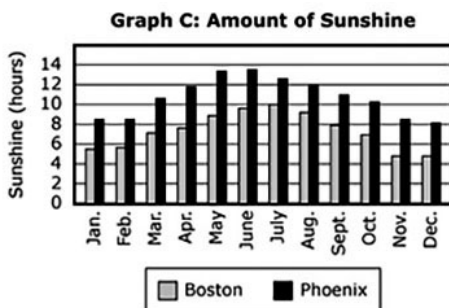
Temperature Data

Graph B shows the average low temperature for each month in Boston and in Phoenix.



Sunshine Data

Graph C shows the average hours of sunshine per day for each month in Boston and in Phoenix.



This question has two parts.

The students compared the climates of Boston and Phoenix in summer and winter.

Part A

Compare the low temperatures in both cities in January to the low temperatures in both cities in July. Use climate data from the graphs to support your answer.

the lowest in boston is 10 degrees the lowest in phoneix is 45 degrees.

Part B

Describe **two** ways July and August in Boston are different from July and August in Phoenix. Use climate data from the graphs to support your answer.

In boston its around the 70s but in phoneix its around the 80s or the 90s!