

Lightning in the Peaks: Synthesis Essay

⚠ This is a preview of the published version of the quiz

Started: May 18 at 4:45pm

Quiz Instructions

An important part of climate science is looking at **multiple pieces** of information. In your case study in Stage C you explored **temperature, dewpoint, instability of an air parcel, and wind direction** (both at the surface and the way storms move). One example alone is not enough to make proper judgments on understanding the cause of lightning clusters. Each aspect must be taken with caution and related to each other. Look for patterns and relationships. While this case study has been simplified (climatologists use a lot of statistics and statistical tests) and there are many other factors one could (and would) look at, be sure to keep in mind to use all the information at your disposal.

This essay tasks you with explaining your thinking about some of the basic concepts explored in this lab. Please follow the instructions below in what to include in your paragraphs. Make them beefy. In other words, do not just write one or two general sentences in each paragraph. Try to include evidence and reasoning. More detailed answers earn the most points.

Paragraph 1: Briefly explain your understanding of changes throughout the year in temperature, moisture, and precipitation in the Flagstaff – San Francisco Peaks area. Focus on the difference between the Monsoon season (July-August-September) and the rest of the year

Paragraph 2: Briefly explain your understanding of atmospheric stability and how thunderstorms develop (their different stages) and at which stage would you expect the most lightning.

Paragraph 3: Briefly explain how mountains impact weather, particularly with respect to cloud and storm formation. What major concepts lead to mountain thunderstorms?

Paragraph 4: This is where you get your chance to explain the distribution of lightning that you see in the geovisualization. Feel free to refer to specific locations (e.g. Fast Traveling locations) as examples of your thinking. We understand that this is all new to you. We understand that you are not a climatologist, but just in a 100-level class. We will take that into account.

Question 1

4 pts

An important part of climate science is looking at **multiple pieces** of information. To start this case study, we'll look **temperature, dewpoint, rainfall, and wind direction** (both at the surface and the way storms move). One piece alone is not enough to make proper judgments on understanding the climate of a location. Each aspect must be taken with caution and related to each other. Look for patterns and relationships. While this case study has been simplified (climatologists use a lot of statistics and statistical tests) and there are many other factors one could (and would) look at, be sure to keep in mind to use all the information at your disposal.

This essay tasks you with explaining your thinking about some of the basic concepts explored in this lab. Please follow the instructions below in what to include in your paragraphs. Make sure your ideas are well thought out. Do not just write one or two general sentences in each paragraph. Try to include evidence and reasoning. Detailed answers earn full points.

Paragraph 1: Briefly explain your understanding of changes throughout the year in temperature, moisture, and precipitation in the Flagstaff – San Francisco Peaks area. Focus on the difference between the Monsoon season (July-August-September) and the rest of the year

Paragraph 2: Briefly explain your understanding of atmospheric stability and how thunderstorms develop (their different stages) and at which stage would you expect the most lightning.




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