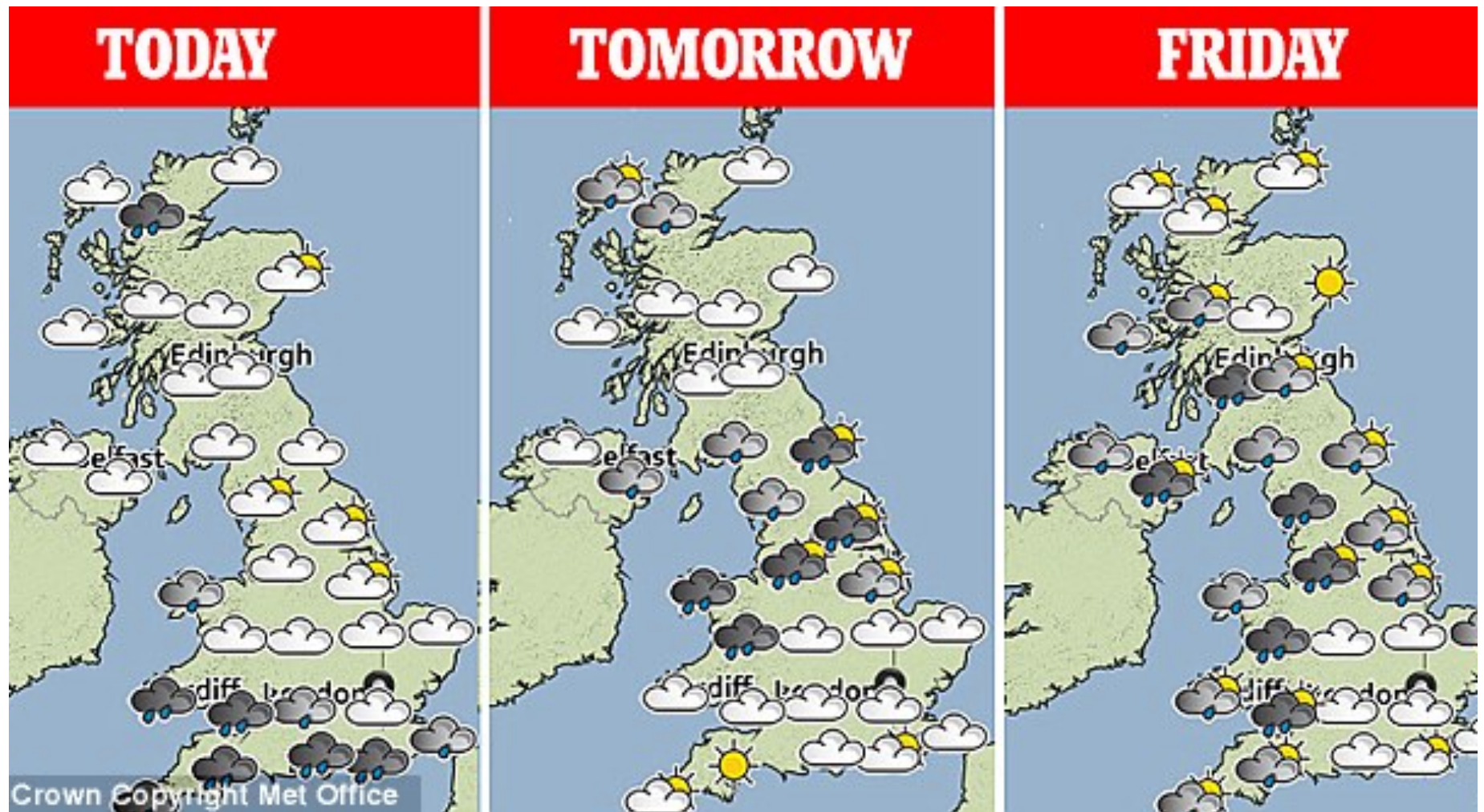


Weather and Climate

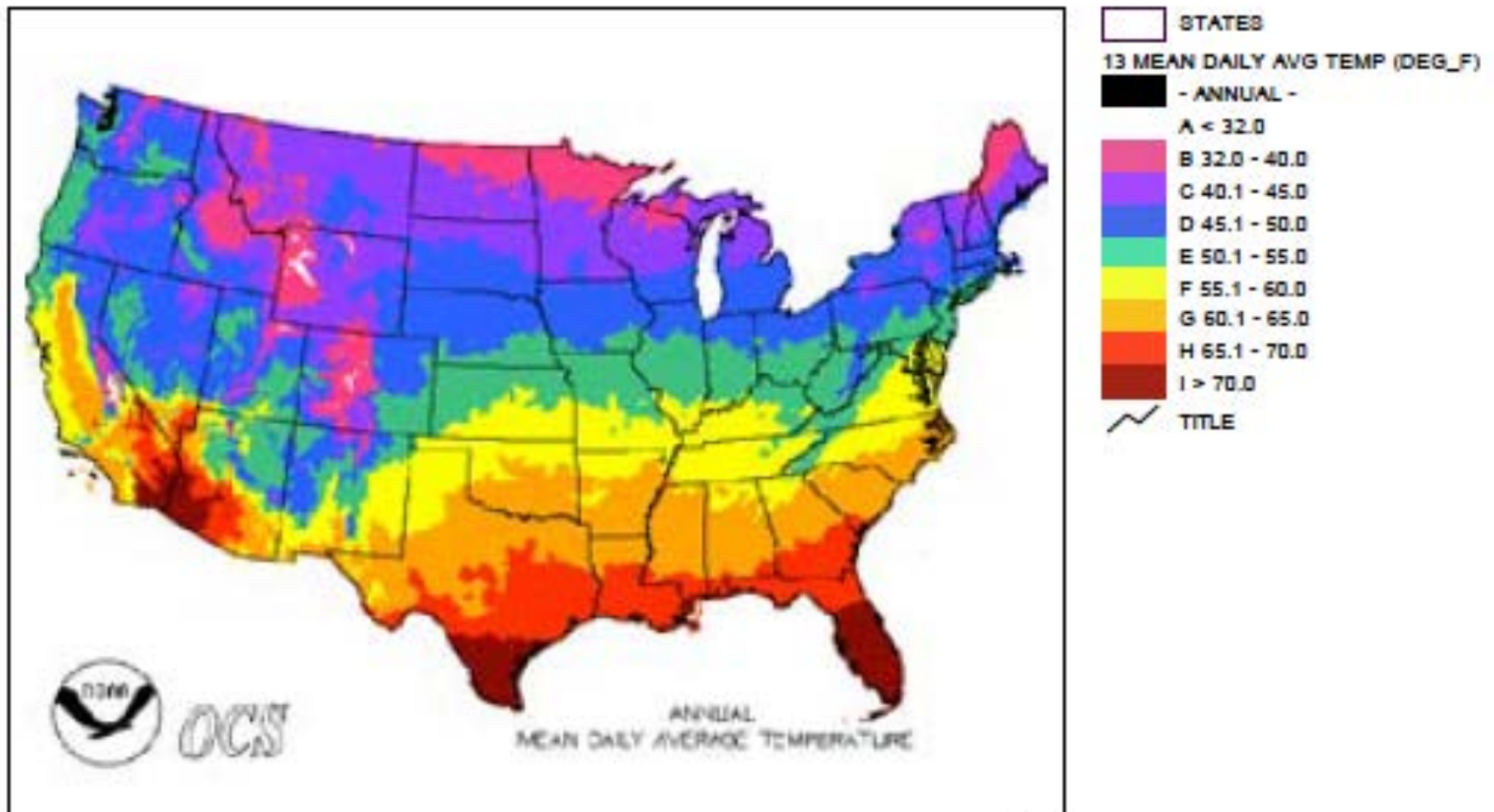
- The terms “weather” and “climate” :
 - a) mean the same thing
 - b) are related to each other but also very different
 - c) are completely different from each other
- Write a sentence to say whether you think a), b), or c) is true
- Write another sentence or two to explain why you chose a), b) or c).
- On your handout, for each of the following six images, write whether you think it is an example of weather, climate, or both.

Example 1: Weather, Climate or Both?



Example 2: Weather, Climate or Both?

Average daily temperature in the continental United States from 1961-1990



Example 3: Weather, Climate or Both?

I was very, very lucky! My family won a trip to San Francisco in July. That is summer when it is usually hot in the United States. However, we read that San Francisco can be very foggy and cold in July.

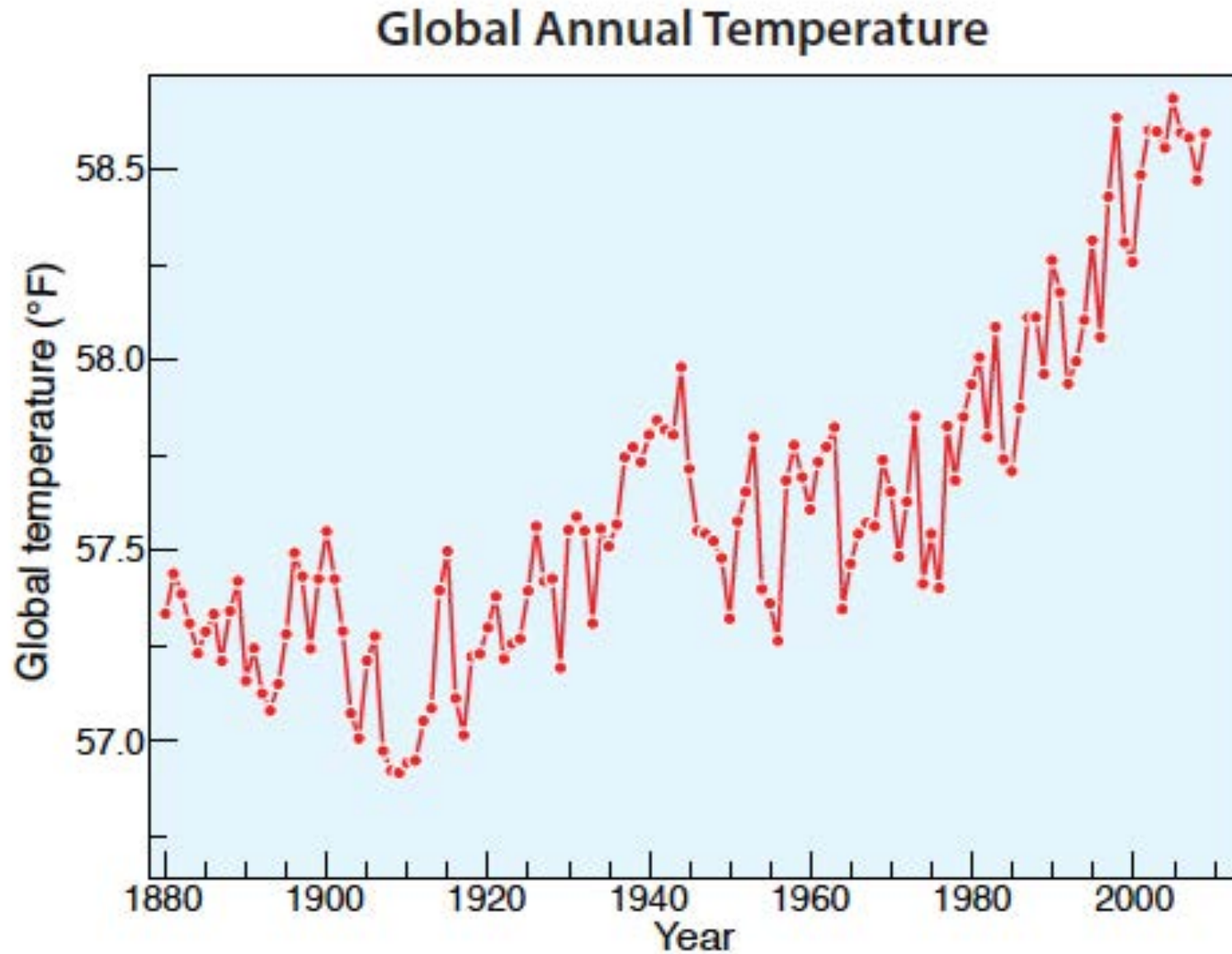
We are going to take some extra clothes so we can stay warm during our lucky trip.

Example 4: Weather, Climate or Both?



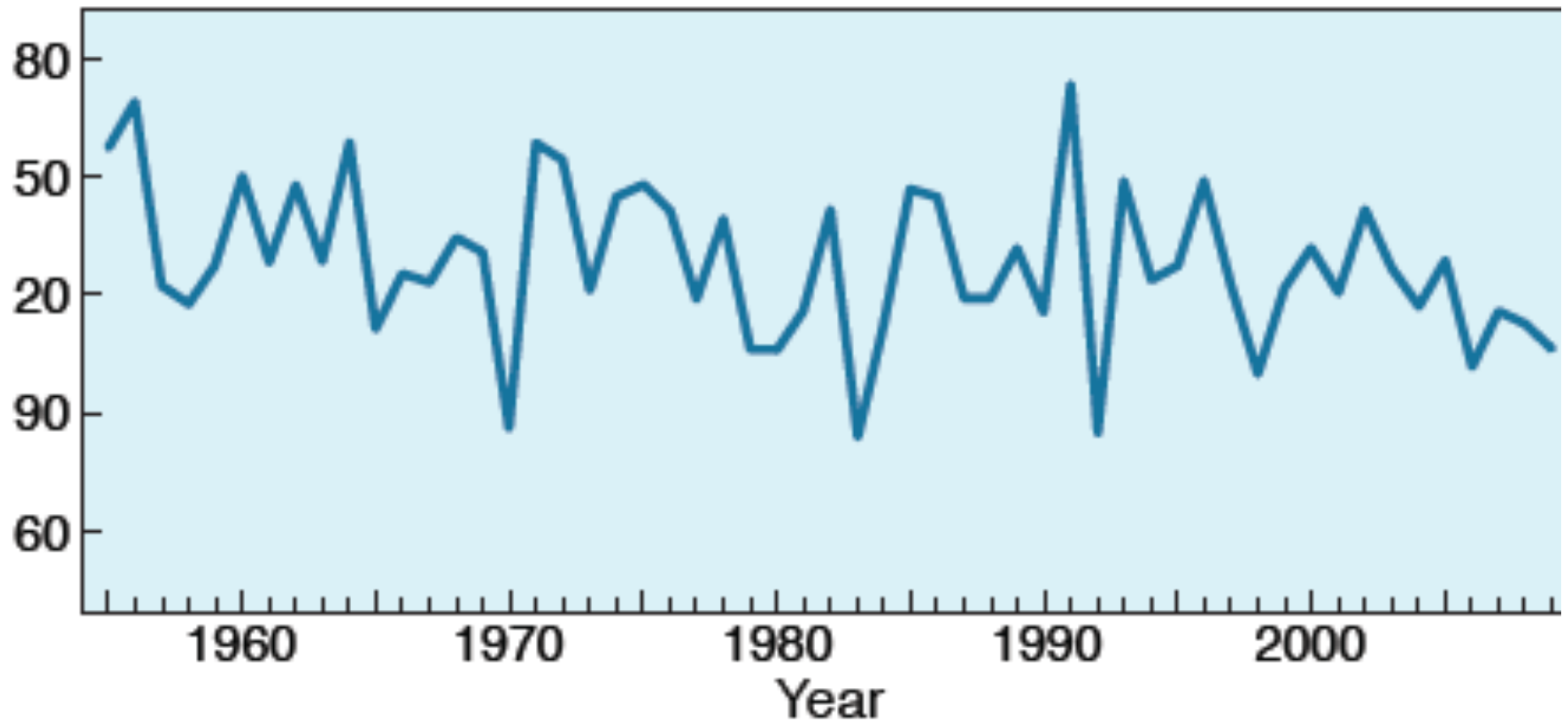
It looks like it will rain most of the day.
I think I will take an umbrella when I go outside.

Example 5: Weather, Climate or Both?



Example 6: Weather, Climate or Both?

Majuro Annual Rainfall



Weather and Climate

- The terms “weather” and “climate” :
 - **b) are related to each other but also very different**
- Example 1 shows Weather conditions
- Example 2 shows a Climate pattern
- Example 3 describes a Climate pattern
- Example 4 shows weather conditions
- Example 5 shows a Climate pattern
- Example 6 shows a Climate pattern

Definitions of Weather and Climate

- **Weather** consists of the short-term (minutes, days, weeks) changes in the atmosphere. Most people think of weather in terms of temperature, precipitation, cloudiness, brightness, humidity, and wind.
- **Climate** is the long-term pattern of weather in a particular area or even for the planet as a whole. When scientists talk about climate, they are looking at averages of precipitation, temperature, humidity, sunshine, wind, and other phenomena such as fog, frost, and hail storms.

Definitions of Weather and Climate

- **Climate is what you expect**, like a sunny day in the dry season. Climate data also teaches us that we can also expect some rainy days during the dry season.
- **Weather is what you get**, such as a sunny day with no rain during the wet season.

RMI Weather Conditions and Climate Patterns

- What kinds of weather conditions and climate patterns do you associate with the Marshall Islands?
 - Temperatures
 - Precipitation
 - Wind
 - Humidity
 - Extreme Weather
 - Seasons
 - Changes from year to year

Visual Features in Books

- **Visual Features** are things we can see in books such as drawings, graphs, photos, tables of information, and lists.
- With a partner, look through the whole booklet to find at least three different kinds of visual features.
- Be prepared to share the visual features you have found.

Visual Features Activity

- Different groups (A, B, C, D and E) will each examine a different visual feature in the island climate change booklet.
- Each group will follow its directions for their assigned feature, and will create a chart to describe their Visual Feature to the whole class.
- Each group will share their chart with the whole class.

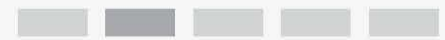
Interact With A Visual Feature

- BEFORE READING: Look at your assigned visual feature. Write at least one question that you have about it.
- AFTER READING: What are one or two big ideas that the graph or other visual feature explains?
- Do you still have any questions about the visual feature?
- What would be hard for your students to understand about the visual feature?
- Prepare your chart to share with the whole class.

Tropical Pacific Island Climates

- Warm days and nights all year
- High humidity
- Wet season and dry season
- Lots of variability in annual amounts of rain
- Breezy with winds often blowing from the east
- Variability in wind speed and direction
- Extreme weather events can include drought, tropical storms and cyclones (hurricanes)
- Strongly influenced by ENSO

Impacts of Climate Change in the Pacific Region



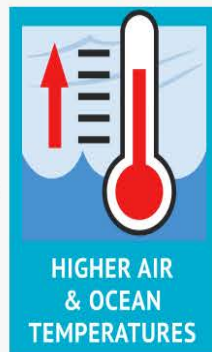
Burning Fossil Fuels



More CO₂ in Atmosphere

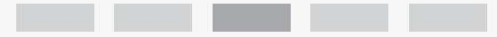


More CO₂ in Ocean



Click on a climate change impact to learn more.





Damages to Ecosystems

Climate Change Impacts

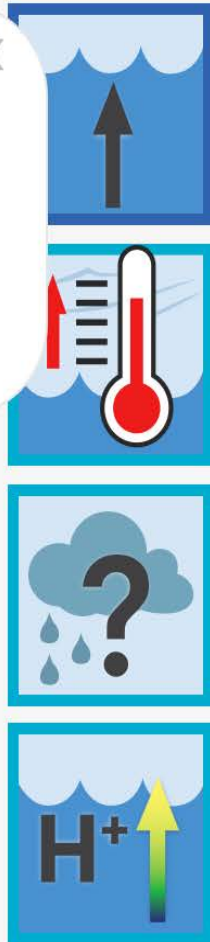
Click on a climate change impact to see which ecosystem services it affects.

Ecosystem Services

Click on an ecosystem service to explore more about that service.

Higher sea levels can cause stronger pounding from waves and more flooding during high tides and storm events. Strong waves and floods damage marine and coastal ecosystems.

X



CULTURAL
VALUES &
TRADITIONS



FOOD &
RESOURCES



INCOME
FROM FISHING
& TOURISM



Information about Pacific Island Climate Change Impacts

- Your island climate change booklet has information about different kinds of climate change impacts.
- Another resource that PCEP developed is a computer interactive titled *Impacts of Climate Change in the Pacific Region*. Go to: www.pbslearningmedia.org and put that title name in the Search box.

Explore an Island Environment

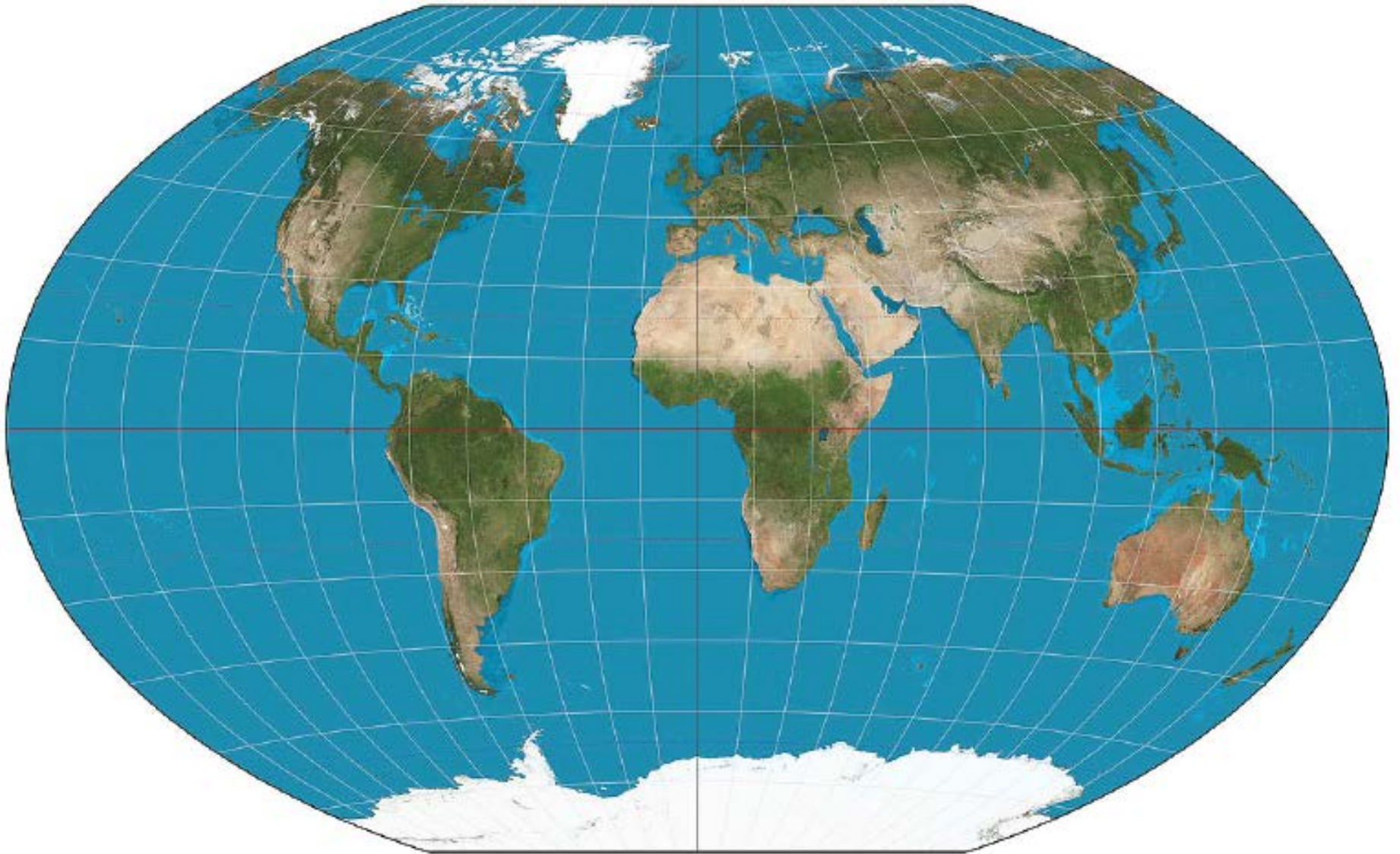
- Analyze the text and visual features about your assigned island environment.
- Be prepared to share information with the whole class about:
 - Its general location on the island
 - Its main physical features
 - The organisms that live in that environment
- Describe which of the four main climate impacts is likely to negatively affect that environment

Session 1.4

Temperatures around the World



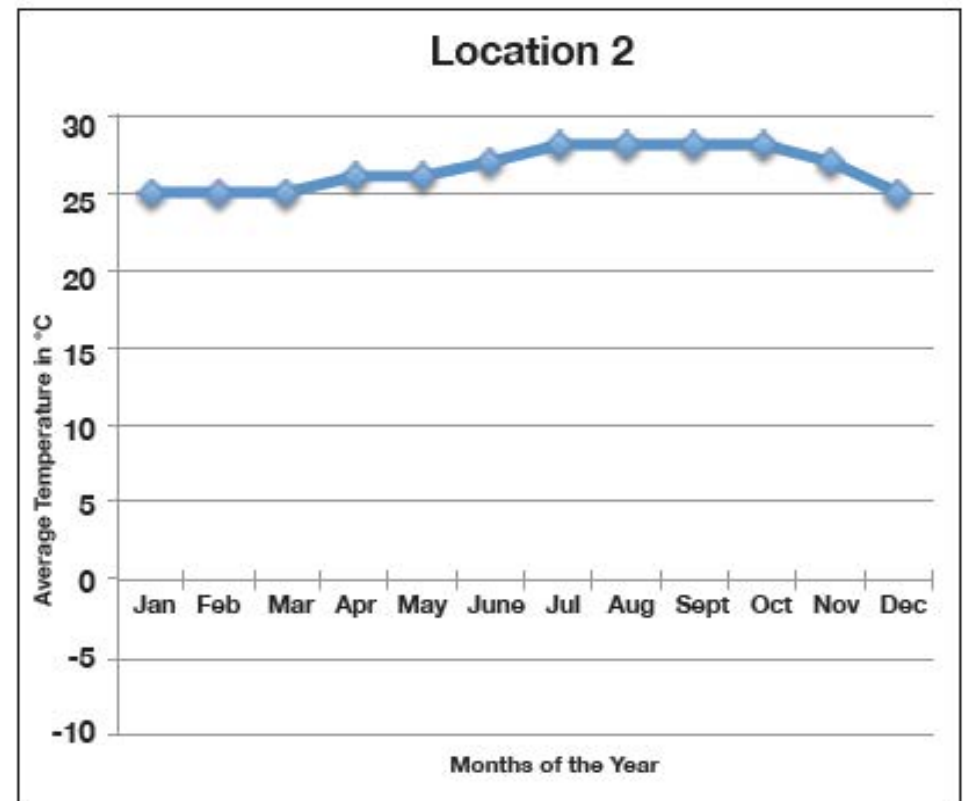
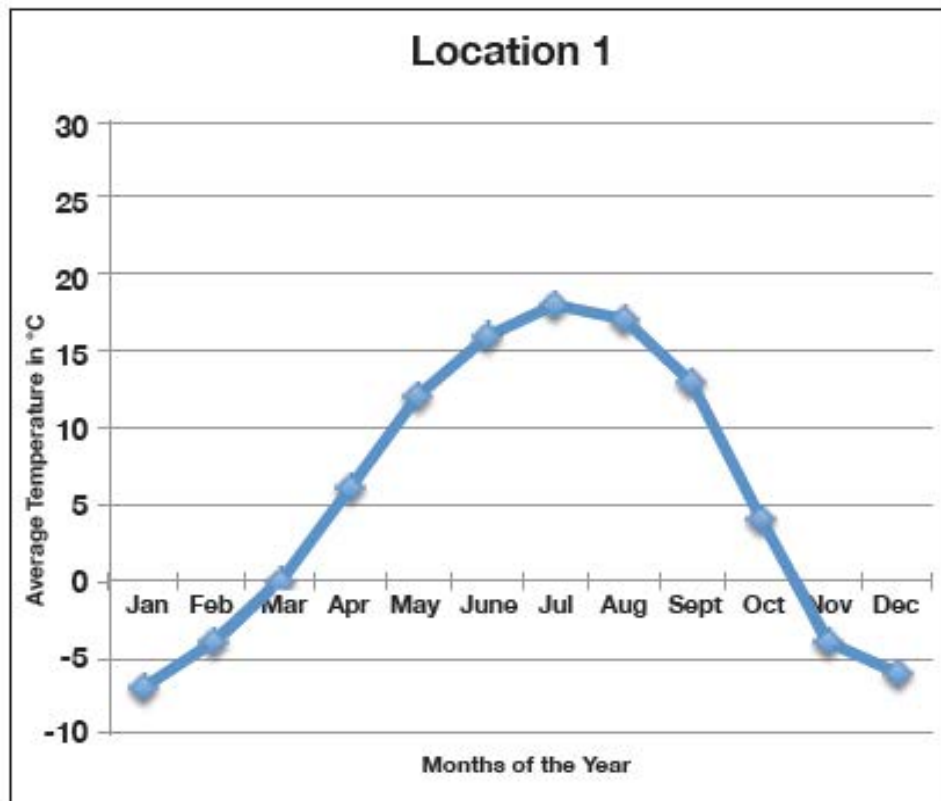
World Map



example: Mystery Locations

Which average temperatures are for Hawaii? Alaska?

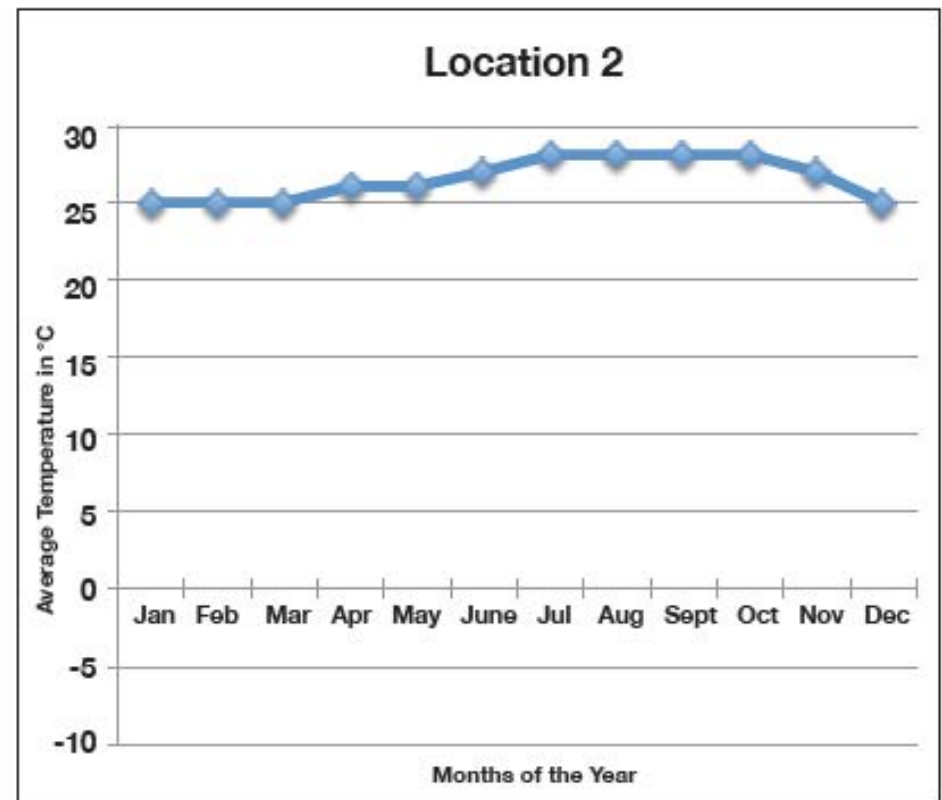
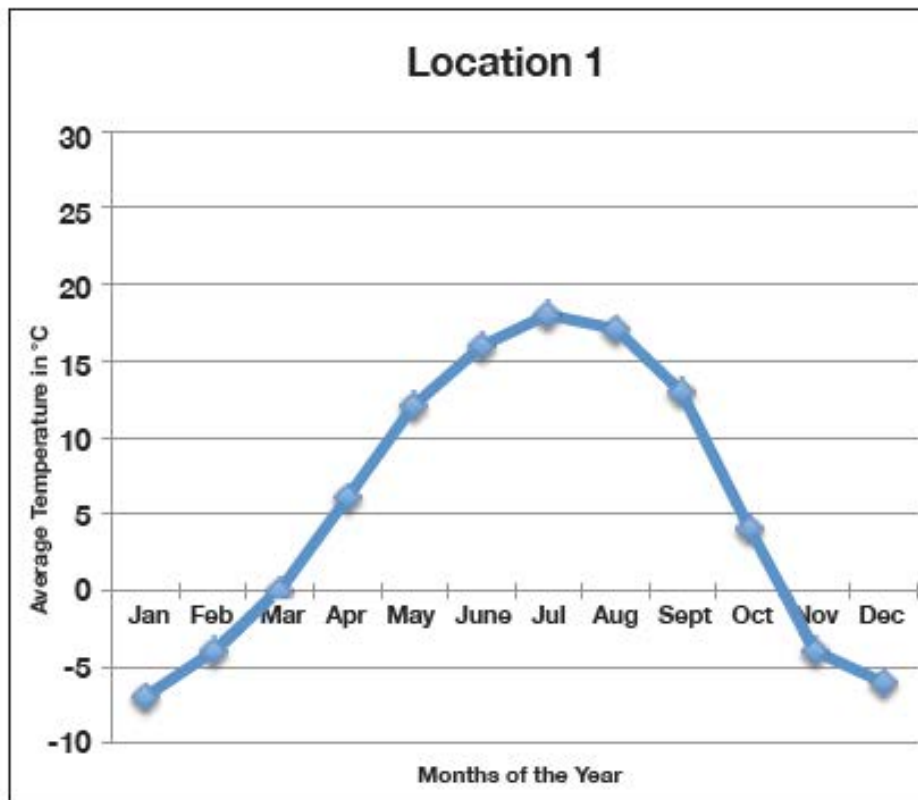
What is your evidence?



What's wrong with this explanation?

Explanation #1:

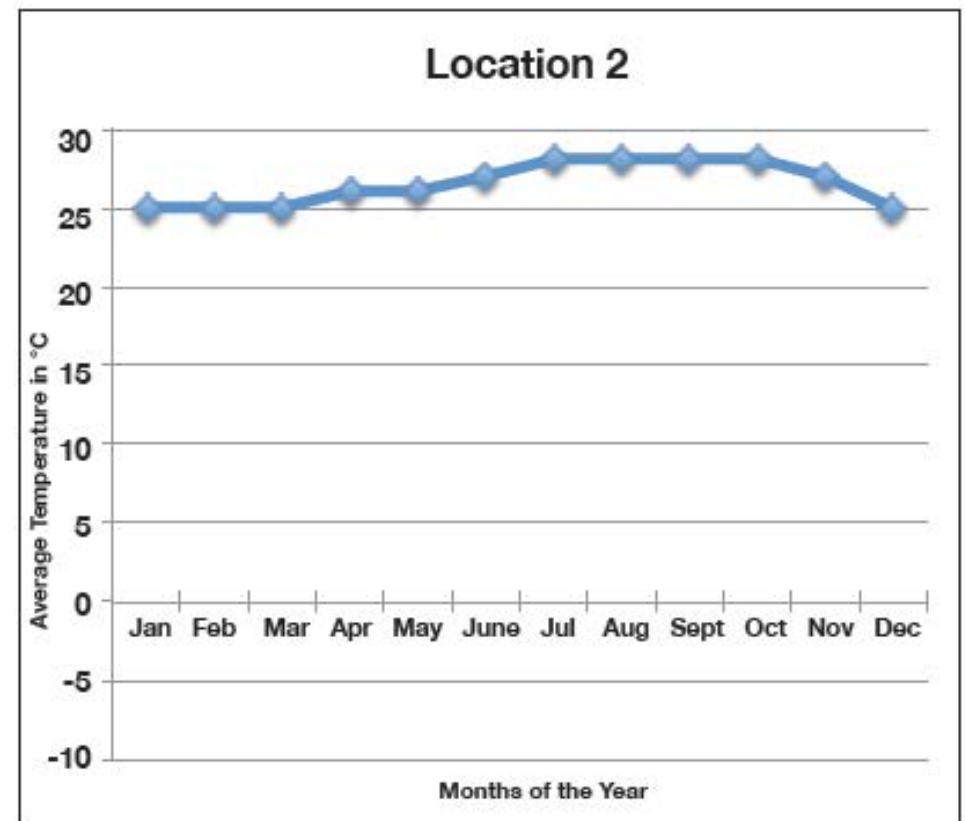
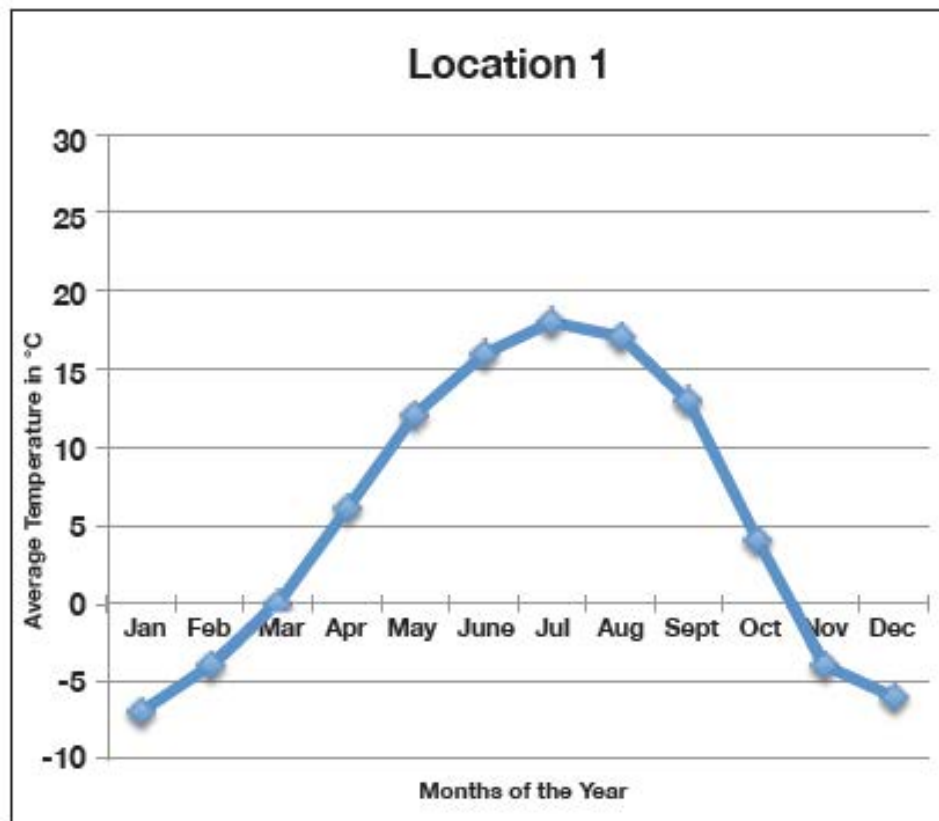
“I think Location 1 is Alaska. I don't know why. I just think that!”



What's wrong with this explanation?

Explanation #2:

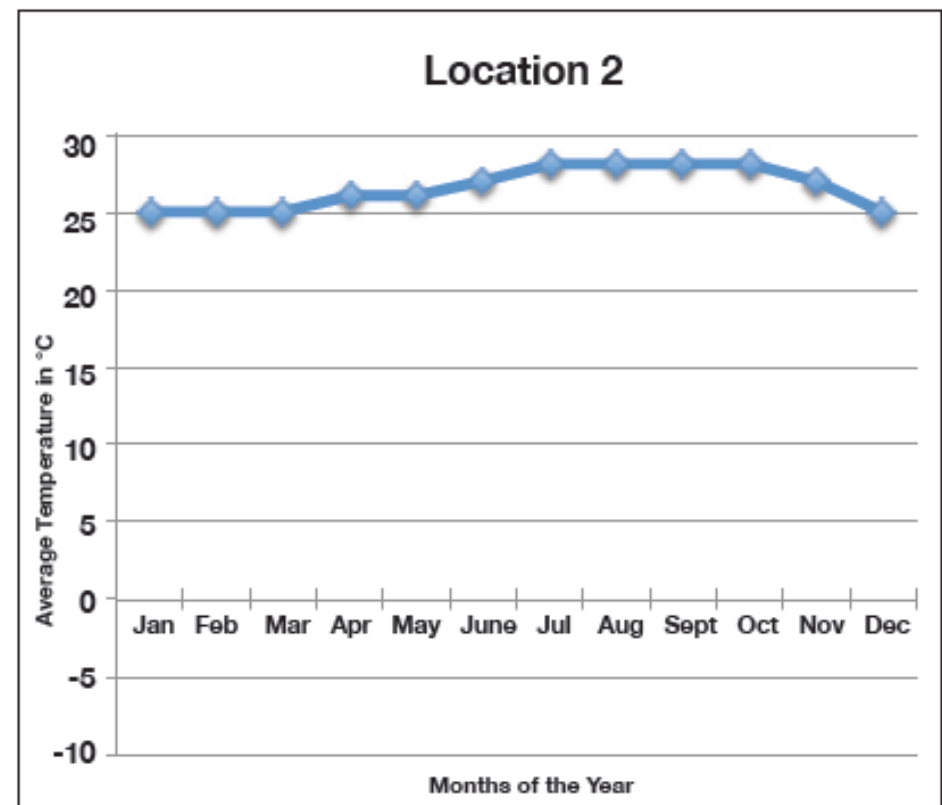
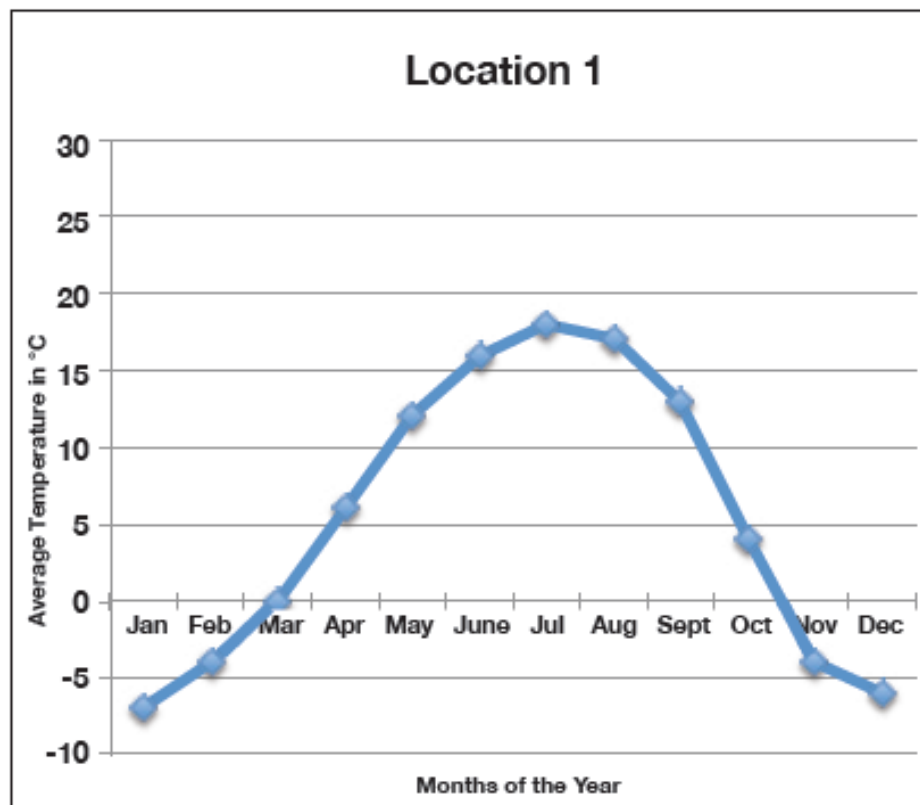
“The second one is Hawaii, because of the evidence.”



What's wrong with this explanation?

Explanation #3:

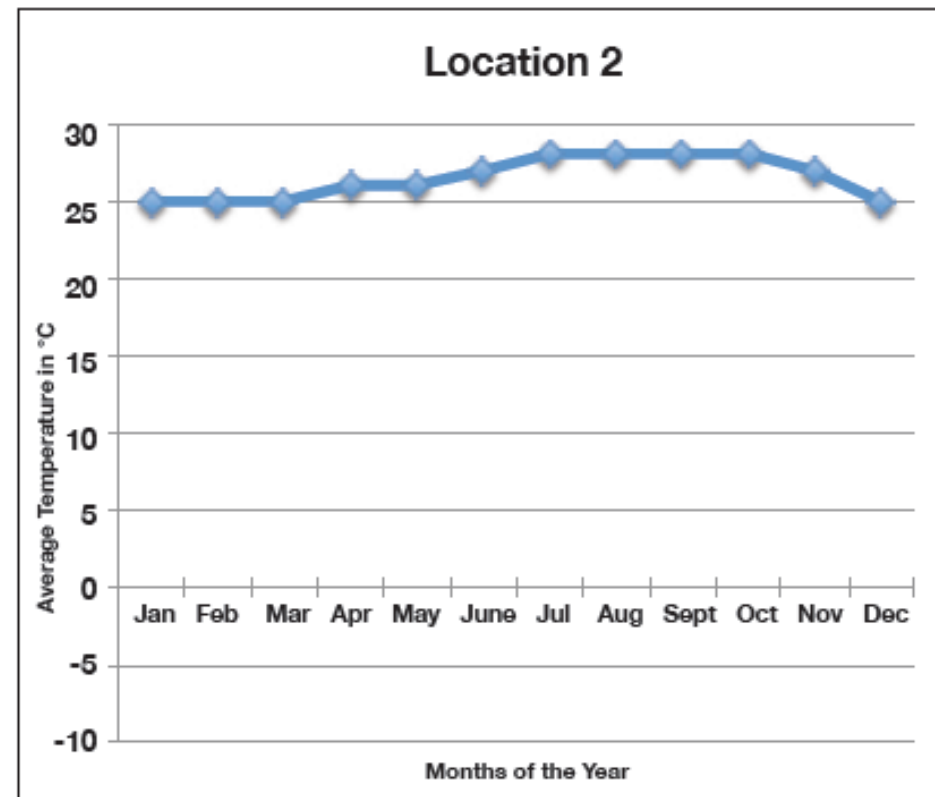
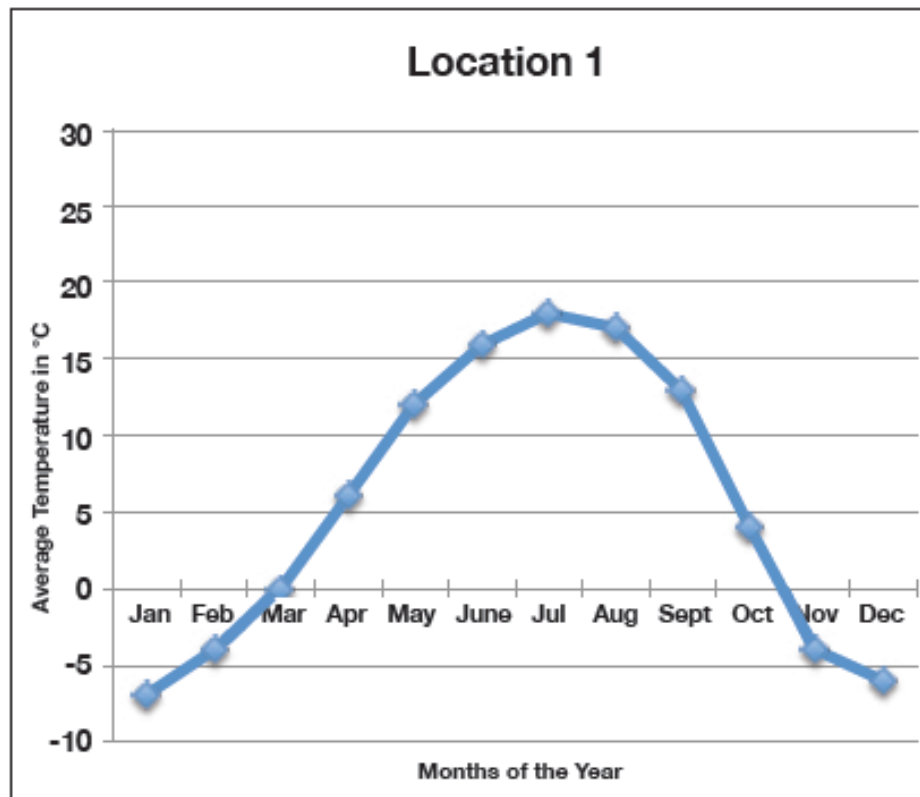
“I went to Hawaii once, and it was really warm there that week. I haven't been to Alaska, but my grandma has, and she said it was really cold. Also, when I've seen pictures of Alaska, it looks cold. That's why the first one is Alaska, and the second one is Hawaii.”



What's wrong with this explanation?

Explanation #4:

“On the world map, Alaska is near the North Pole, which means days are long in summer and short in winter. There would be a bigger difference between summer and winter temperatures. The graph shows a huge difference from winter to summer at the first location. That's why I think Location 1 is Alaska.”



What makes a good scientific explanation?

- The evidence supports the explanation.
- The evidence is based on carefully collected data and information, not just one casual observation.
- The evidence is from a reliable source.

*Key
Concept*

1.4



The ocean warms cold air and cools warm air. The ocean keeps temperatures more even all over the planet.