

Influence of Global Winds on Climate

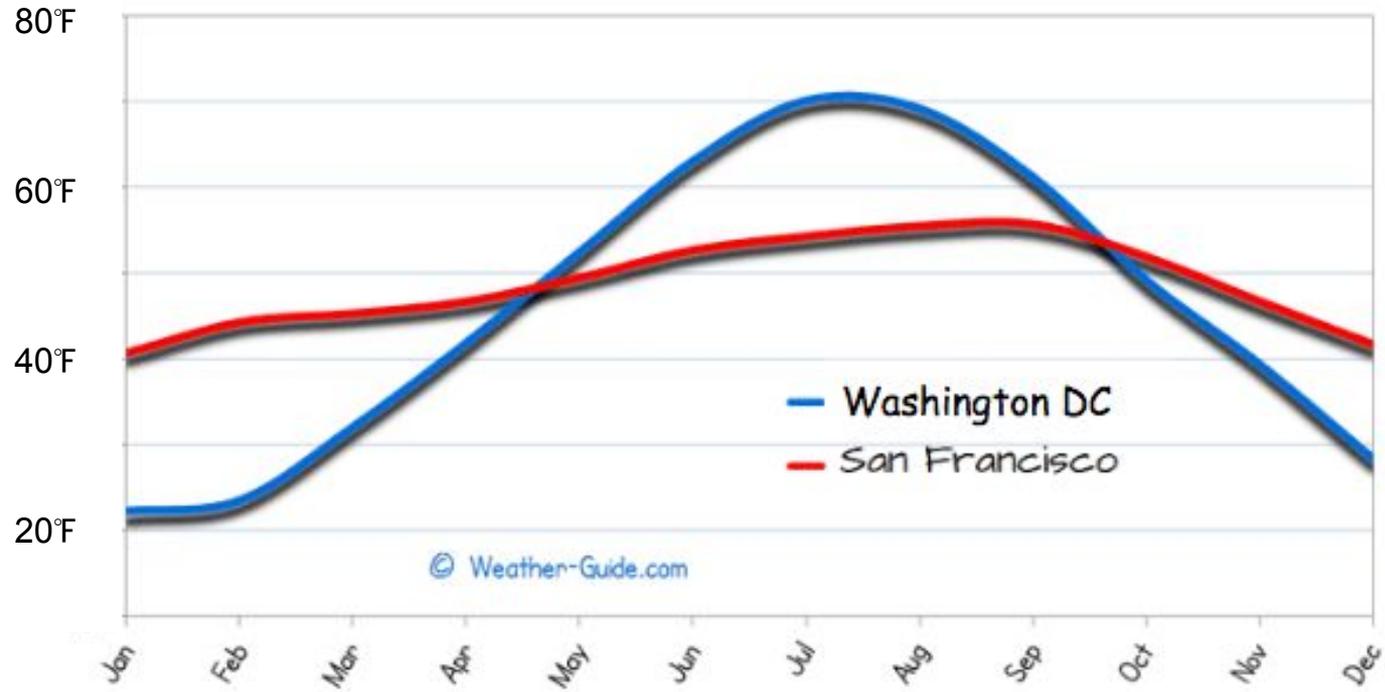
Weather & Climate Unit, Task 2

Do you think San Francisco and Washington DC have similar or different climates? Why?





How would you describe the climates in
San Francisco and Washington DC?



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San Francisco and Washington DC?

FOCUS QUESTION: SF and DC are BOTH coastal cities, and BOTH get equal amounts of solar energy (same latitude). Why do they have drastically different climates?



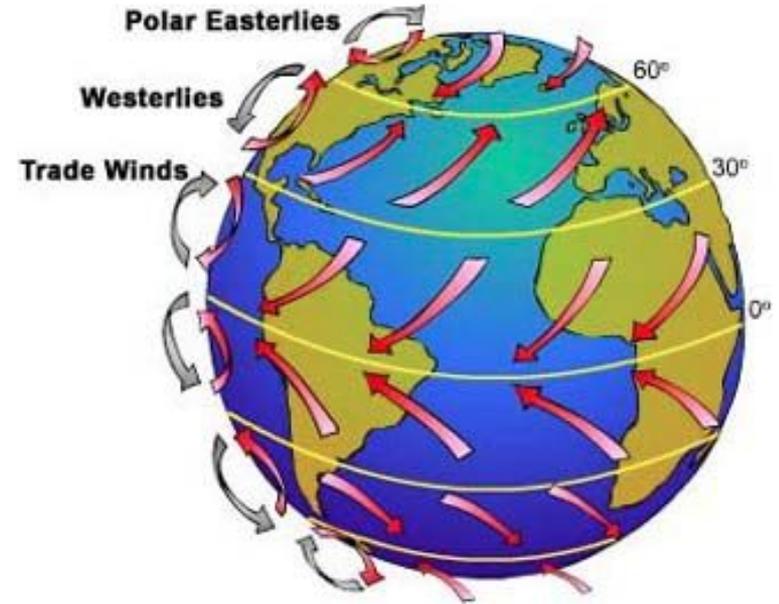
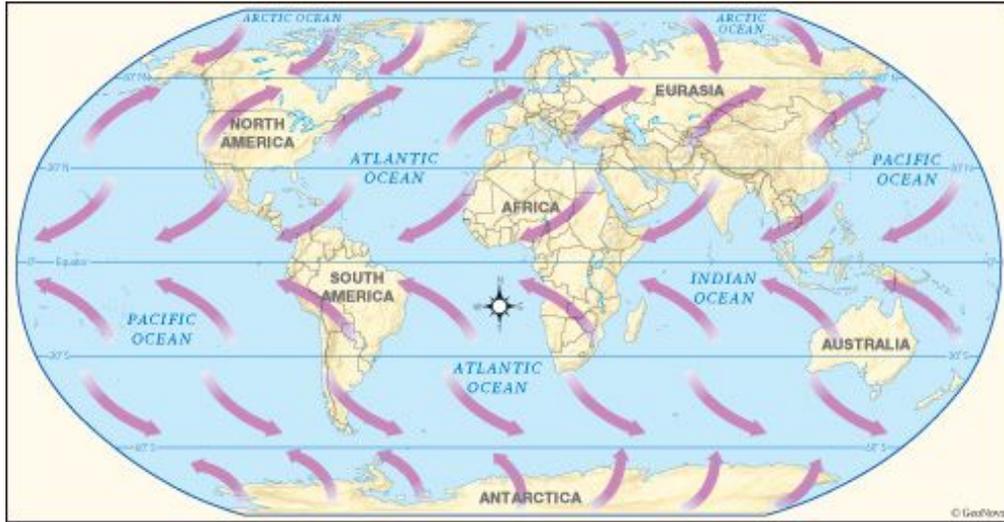
Learning Objective

Students will be able to explain why two different coastal cities with the same latitudes can have drastically different climates.

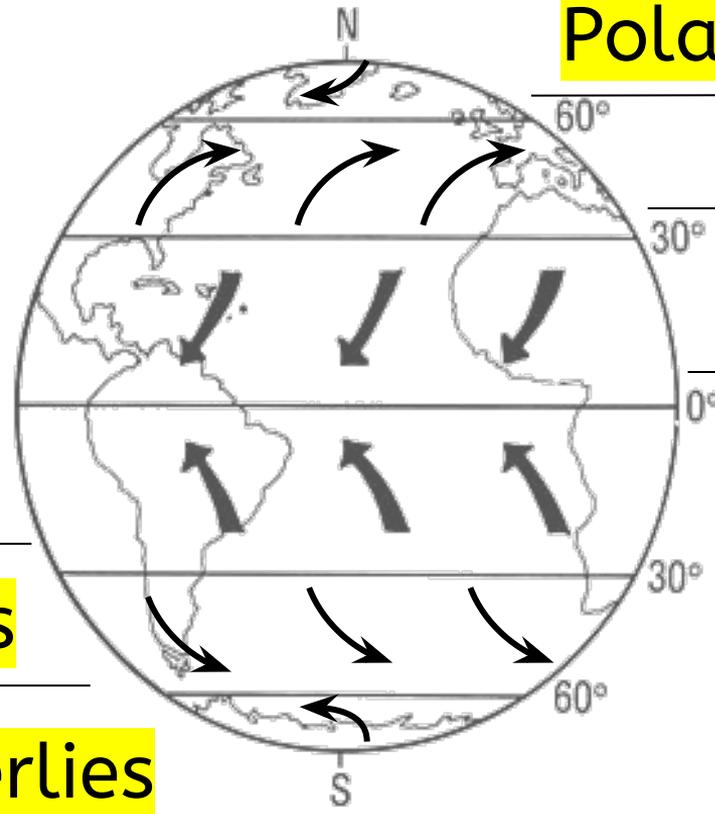
Notes:

Global Winds and Climate

Global Winds: major wind patterns that constantly blow in a steady direction across our Earth



3 Different Types of Global Winds



Polar Easterlies

Westerlies

Trade Winds

Trade Winds

Westerlies

Polar Easterlies



How does the direction of global winds affect climates?

Westerlies





Winds that travel over the **ocean** carry **air** with **stable** temperatures because water creates **mild** temperatures (water warms and cools **slowly**)

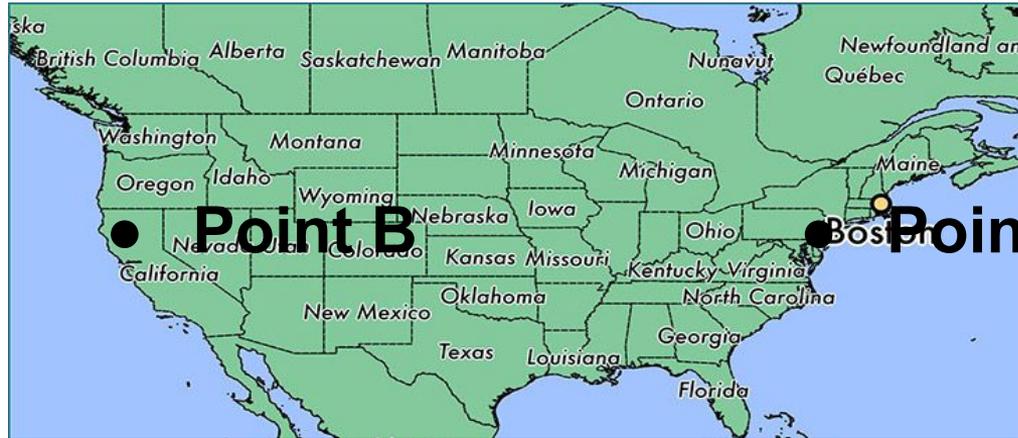
★ San Francisco receives **air** that travels over the **ocean**, so the climate in SF is **mild** and temperatures are **stable**



Winds that travel over **land** carry **air** with **extreme** temperatures because land creates **extreme** temperatures (land warms and cools **quickly**)

★ Washington DC receives **air** that travels over **land**, so the climate in DC is **extreme** and temperatures are also **extreme**

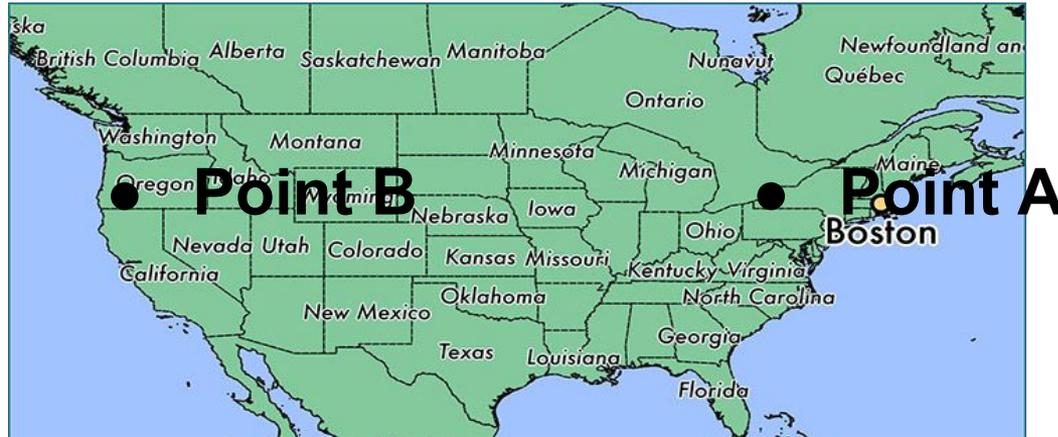
Would Point A receive wind that travels over water or wind that travels over land?



Partner B: Point A would receive wind that travels over _____ because _____.

Partner A: I agree/disagree because _____.

Which location would you expect to have more stable temperatures?

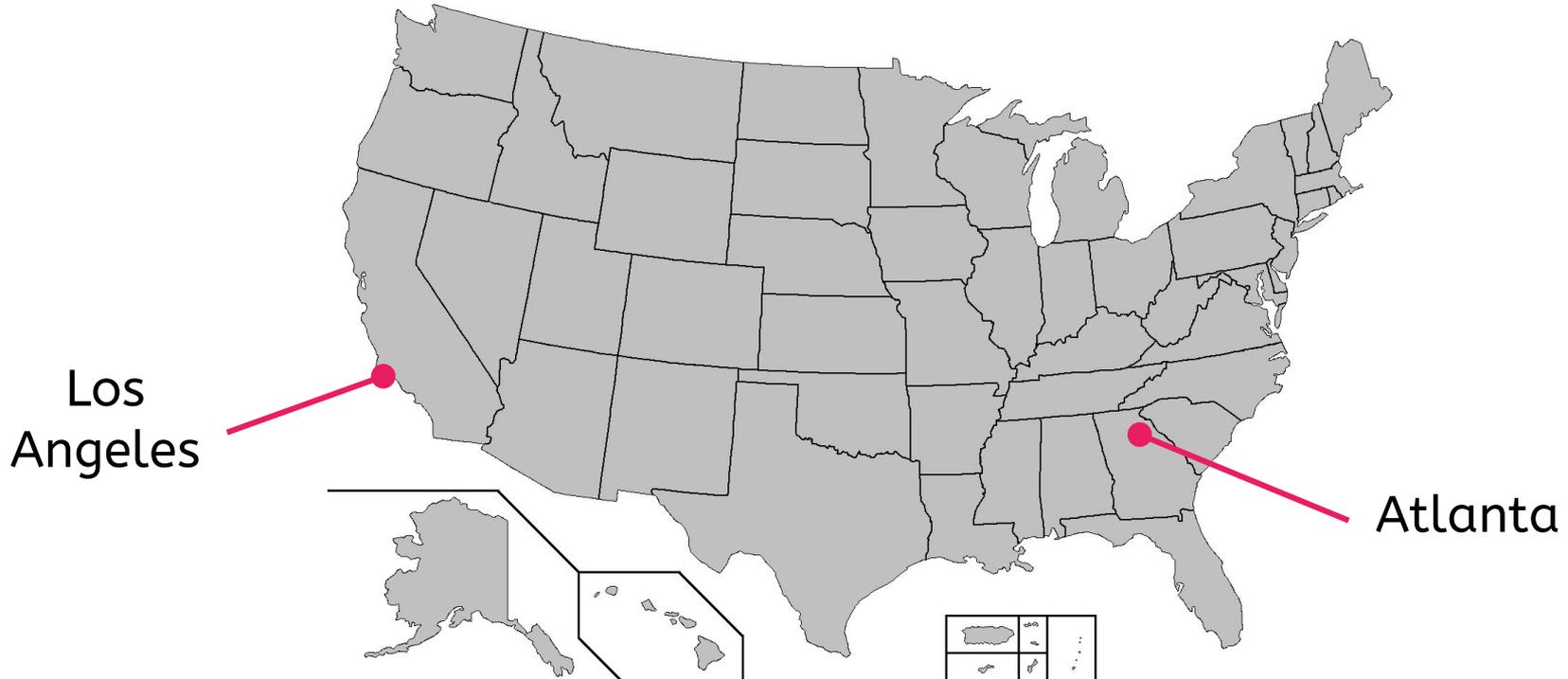


Partner B: *I would expect Point _____ to have more stable temperatures because _____.*

Partner A: *I agree/disagree because _____.*

EXIT TICKET:

Explain why Los Angeles, CA has more mild and stable temperatures compared to Atlanta, GA.



Whiteboard Norms/Rules

1. Only write the answer to the question
2. Cover your answer until your teacher says
“3, 2, 1... SHOW ME!”
3. Be prepared to share your answer

TRUE or FALSE?

The Westerlies always blow from west to east.

TRUE

TRUE or FALSE?

The Polar Easterlies blows from east to west in the winter and blows from west to east in the summer.

FALSE

Ontario, Canada is at 51°N .
What kind of wind does Ontario get?

WESTERLIES

TRUE or FALSE?

There are no major winds in the Horse Latitudes and Trade Winds zone.

FALSE

Mexico City, Mexico is at 19° N.
What kind of wind does it get?

TRADE WINDS

Nuuk, Greenland is at 64° N.
What kind of wind does it get?

POLAR EASTERLIES

Wellington, New Zealand is at 41° S.
What kind of wind does it get?

WESTERLIES

Nuuk, Greenland is at 64° N.
What kind of climate/wind does it have?

- A. Cold climate with no winds
- B. Cold climate with winds blowing from west from east
- C. Cold climate with winds blowing from east to west

C

Shimla, India is at 30° S.
What kind of climate does it have?

- A. Sunny with not much precipitation
- B. Wet and humid
- C. Dry

A

Wellington, New Zealand is at 41°S.
What kind of climate does it have?

- A. Warm and humid
- B. Dry or wet depending on the season
- C. Extremely cold

B