Data Lens: Exploring Earth's Visual Stories

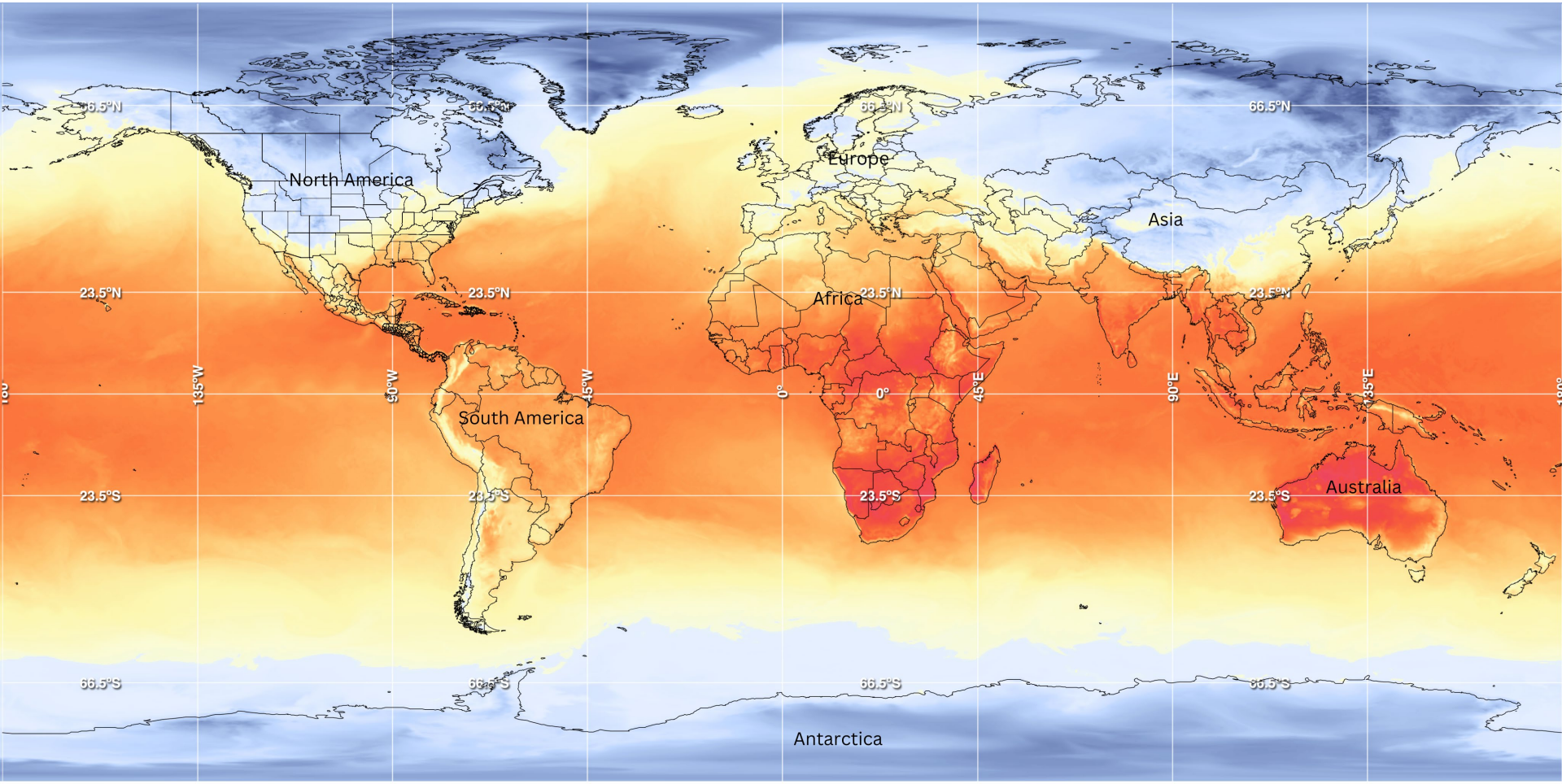
We are going to slow down and take ten minutes or so to observe a map and discuss what we discover and notice about it. There are no right or wrong answers!

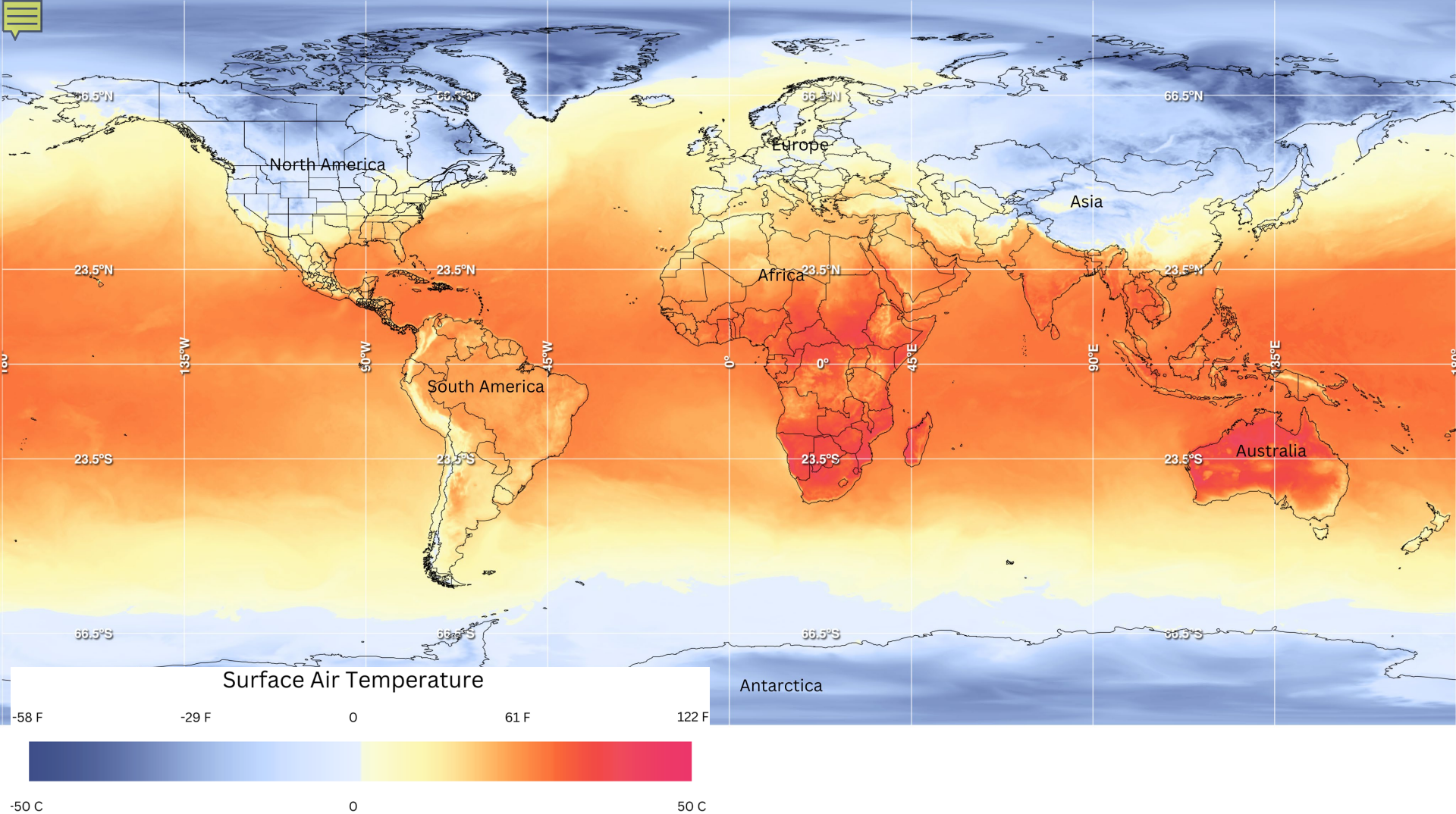
First: Ground Rules

- **Raise your hand** to share your ideas with the class.
- **All** ideas are welcome.
- Be **respectful** of others' ideas!
  - It's okay if you disagree!
  - Build off each others' ideas.

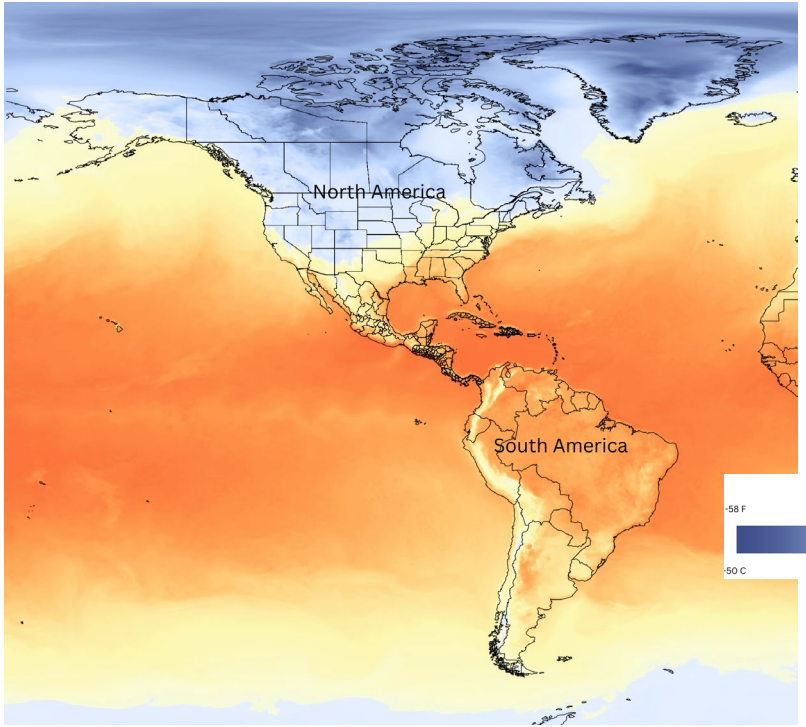
Next: One minute to quietly observe...

1) What's going on in this image?

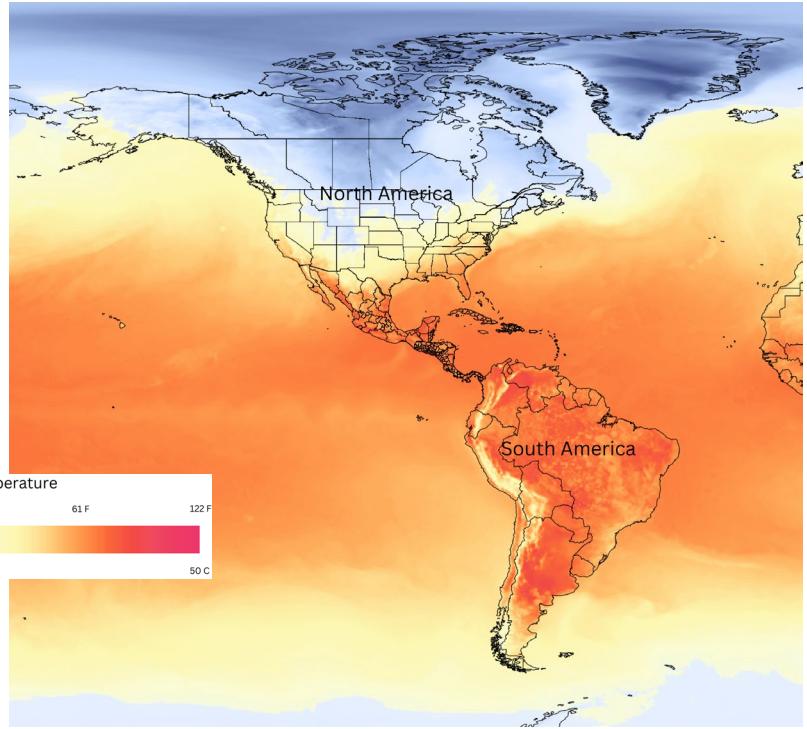


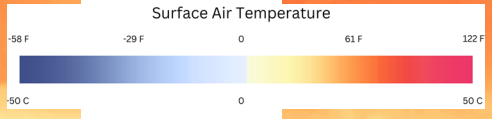

66.5°N
66.5°N
66.5°N
66.5°N
North America
Europe
Asia
23.5°N
23.5°N
23.5°N
23.5°N
Africa
135°W
90°W
45°W
0°
0°
45°E
90°E
135°E
South America
23.5°S
23.5°S
23.5°S
23.5°S
Australia
66.5°S
66.5°S
66.5°S
66.5°S
Antarctica
Surface Air Temperature
-58 F
-29 F
0
61 F
122 F
-50 C
0
50 C

2am MST 12/10/2024



2pm MST 12/10/2024





Scan the Western Hemisphere. Then, on your sheet answer the following.

2) How would you categorize the areas with bigger differences between the maps?

3) How would you categorize the areas with smaller differences between the maps?

Last Question to answer on your sheet

4) What was one comment that a classmate made that changed your thinking about the map observation?

End of Data Lens

Want to learn more about the dataset? (5 min)

Read the dataset description on the next slide. Jot down any words you don’t understand.

Want to learn a little more about climate zones? (10 min)

Do a brief partner jigsaw read and share.

Global Forecast Systems Model - Surface Temperature Forecast

Meteorologists use tools and data to predict the weather. They look at past weather patterns, real-time information like radar and satellite images, and advanced computer models that help them see what might happen in the future. These models use math equations to turn today's weather conditions into forecasts.

One of these models, called the **Global Forecast System (GFS)**, is featured in this visualization. It predicts air temperature across the planet at about 6.5 feet above the ground (the height of a typical person). The colors in the imagery tell the story:

- **Pink and orange** mean hot temperatures.
- **Yellow** is mild.
- **Blue** shows areas at or below freezing (32°F or 0°C).

This data also helps us see the **diurnal cycle**, or how temperatures change between day and night. During the day, sunlight heats up the land and air, causing temperatures to rise. At night, the lack of sunlight allows the land and air to cool. This daily cycle of warming and cooling is an important pattern we can see all over the planet.

Diurnal cycle heating and cooling is most notable far inland, away from the moderating effects of the ocean. Places near the ocean tend to fluctuate temperature less from day to night and season to season. **Climate zones** also change the expected temperature of a region throughout the year.

Source: NOAA Science On a Sphere

Reading Extension

10-20 minutes

Partner up

Student A: Read a short page about climate zones, how the information can be used and how weather satellites play a role.
Student B: Read a short page about how the ocean affects climate and weather on land.

Take 5 minutes each to share what you learned.