

March 3 Weather and Climate Stations 1-4

Station 1: Weather vs. Climate

Directions: Using your knowledge from this week, try your best to answer the question below in complete sentences.

1. Weather is:
2. Weather is similar to climate because it:
3. Weather is different from climate because it:

Station 2: Regional Climates Reading

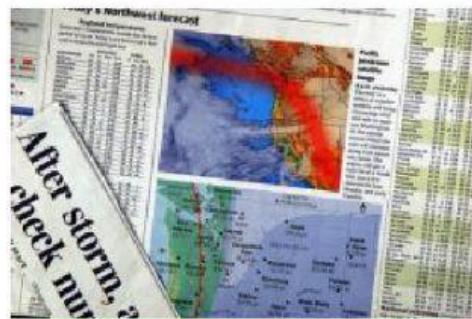
Directions: Read the text below, then fill out the chart.

What is Weather?

We understand **weather** as the daily atmospheric conditions of a specific area at a specific time. **Weather forecasts** (pictured in the image to the right) predict what the weather will be in a specific community or part of the country over the next few days.

Now Think!

How is weather different than climate? **Climate** is the average weather conditions of an area over an extended time period.



weather forecasts- predict the daily atmospheric conditions of an area.

For example, the climate for Texas in the summer is hot and humid, while the climate for Wisconsin in the winter is cold and snowy. Does that mean that the weather in Texas during the summer is always hot, and that Wisconsin is freezing and snowy every day in the winter? Of course not.

weather- the daily atmospheric conditions of a specific area at a specific time

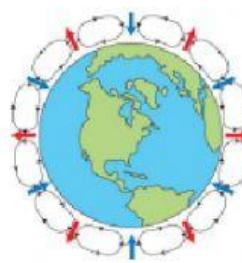
What Determines Local Weather Patterns?

Locations, types of landforms, wind patterns, and ocean conditions and currents influence local weather patterns all over the world.

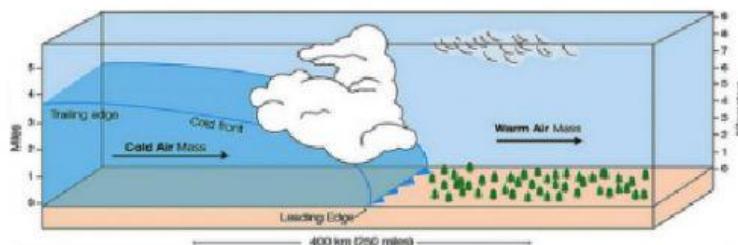
- **Landforms:** Landforms affect the amount of water in the atmosphere. A mountain, for example, has a rainy side and dry side. As air flows up the front side of the mountain, it cools, and water vapor condenses into droplets. These drops fall as rain on this side of the mountain, leaving the air dry. As the air moves over the top of the mountain, there is no moisture left in it, so the other side of the mountain receives little to no rain.
- **Wind:** The uneven heating of Earth creates global wind patterns that influence local weather. When air moves from a high pressure area to a low pressure area, wind is formed. Global wind patterns move air masses across the globe, leading to changes in weather. Cold fronts and warm fronts are one way winds change local weather.



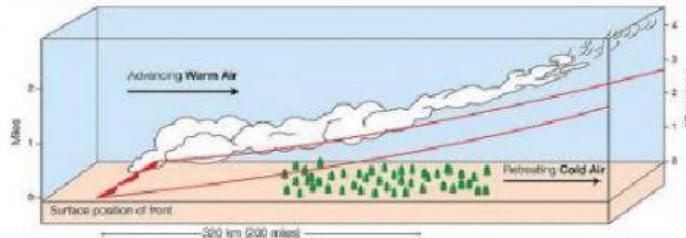
The dry side of the mountain is called a **rain shadow**.



Atmospheric convection cells, caused by the uneven heating of Earth by the Sun, lead to global wind patterns.



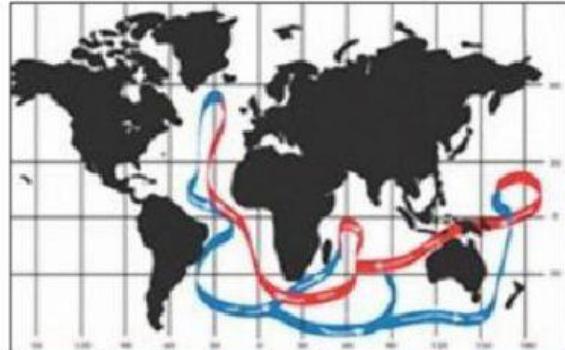
Cold fronts typically bring stormy weather with them because the cold front pushes the warmer, moist air in front of it upward, causing condensation, clouds, and potential thunderstorms.



Warm fronts typically have light rain over a broad area ahead of the front; the warm air pushes over the top of the cold air mass in front of it.

- **Ocean Currents:** Ocean currents also have an impact on weather patterns. The currents affect the surrounding coastal areas by circulating warm water (bringing energy and moisture) from the equator to the poles and cold water from the poles to the equator.

The blue arrows (in the picture to the right) represent the cold water circulating toward the equator; the red arrows represent the warm water circulating towards the poles.

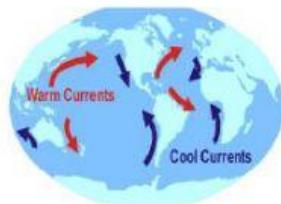


The blue lines in this image show the movement of cold ocean currents, and the red lines show the movement of warm ocean currents.

Directions: Complete the cause and effect boxes below. Explain how each cause has an effect on the environment. Then, click and drag the correct picture in the illustration box.

Cause	Effect	Illustration
Landforms: Mountainsides		
Winds: Cold Air Warm Air Low Pressure High Pressure		
Ocean Currents Equator Poles		

Picture Bank:



Station 3: The Nuts and Bolts of Weather

Directions: After reading the text from station 2, write down the important ideas (the nuts and bolts). Create a summary at the end using all of the important ideas.

Nuts and Bolts Ideas: Landforms, Water, and Weather

Nuts and Bolts Ideas: Winds, Water, and Fronts

Nuts and Bolts Ideas: Ocean Currents and Weather

Summary: Use six facts from your Nuts and Bolts above to write a summary of the Regional Climate STEMscopedia.

Station 4: Biotic vs. Abiotic Factors

Directions: Answer the question below based on the picture you see. Remember! **BIOTIC** factors are living things. **ABIOTIC** factors are non-living things.



Look at the photograph above. What biotic and abiotic factors can you identify? Describe as many as you can.

Biotic factors:

Abiotic factors:

How are the biotic and abiotic factors interacting?