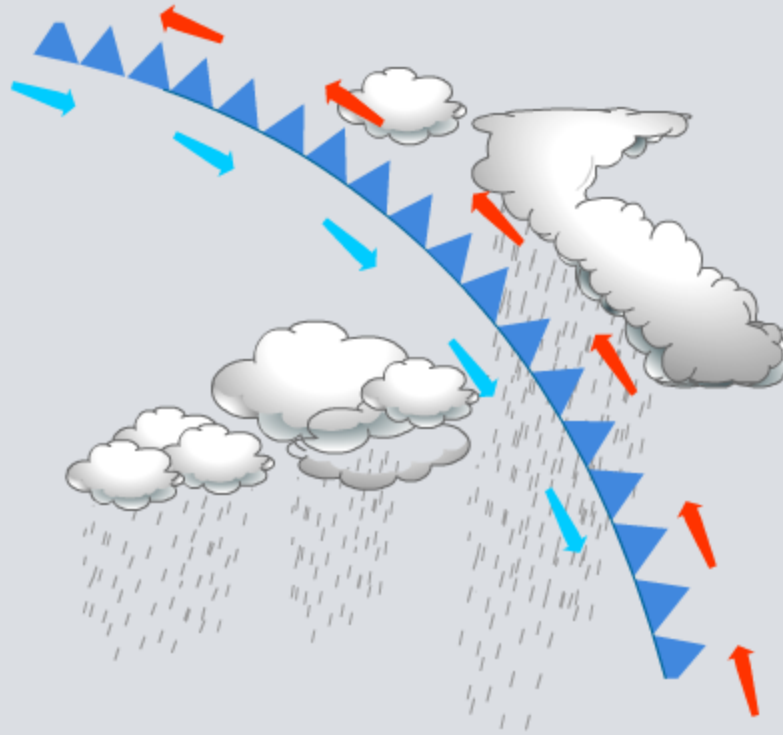


What is Weather?



What is weather?

Weather is the state of the atmosphere at any given place at any given time.

Elements of weather include:

Temperature

Precipitation

Humidity

Air pressure



Wind speed

Cloud cover



Wind direction

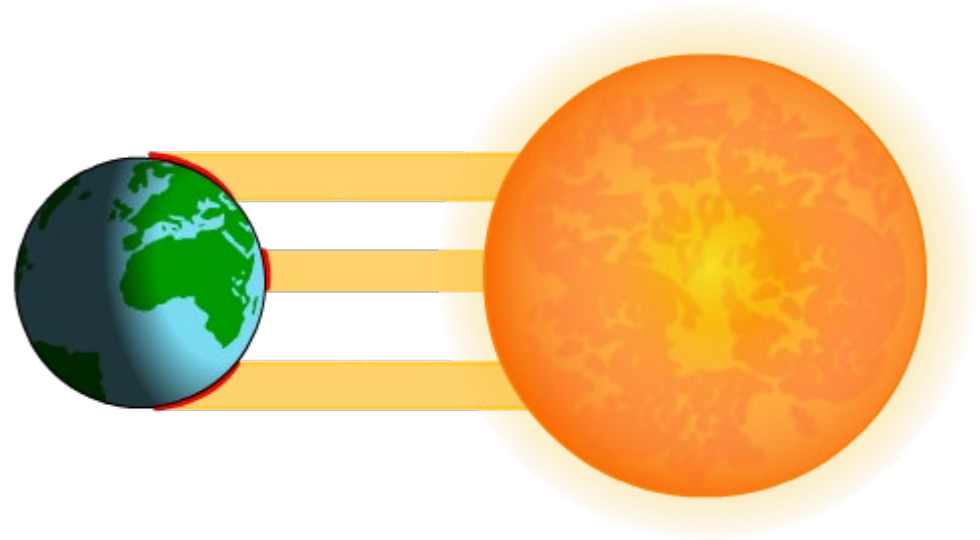


Why is the south warmer than the north?



The uneven heating of the Earth's surface by the Sun is called **differential heating**.

Differential heating creates warm and cold **air masses** in the atmosphere. Warm air masses move differently than cold air masses.



These movements are called **convection currents**. Convection currents in the atmosphere are responsible for changing weather patterns.



How do convection currents work?



High and low pressure



Under pressure?



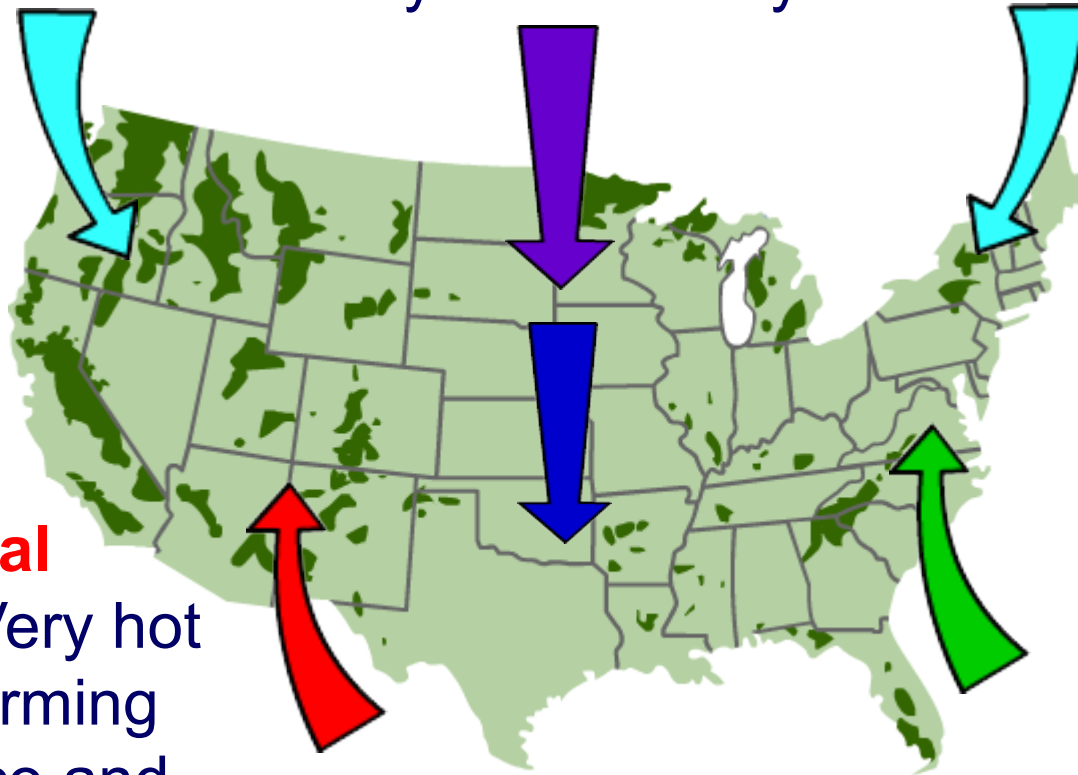
What major air masses affect the U.S.?

Maritime polar:

Cool and damp, bringing cloudy weather.

Continental Arctic:

Very cold and dry.



Maritime tropical:

Warm and very humid, forming over the Gulf of Mexico.

Continental tropical:

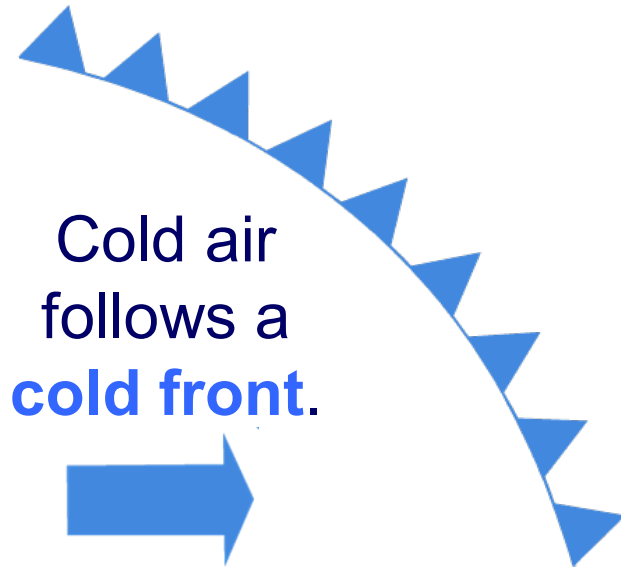
Very hot and dry, forming over Mexico and the Southwest.

Continental polar:

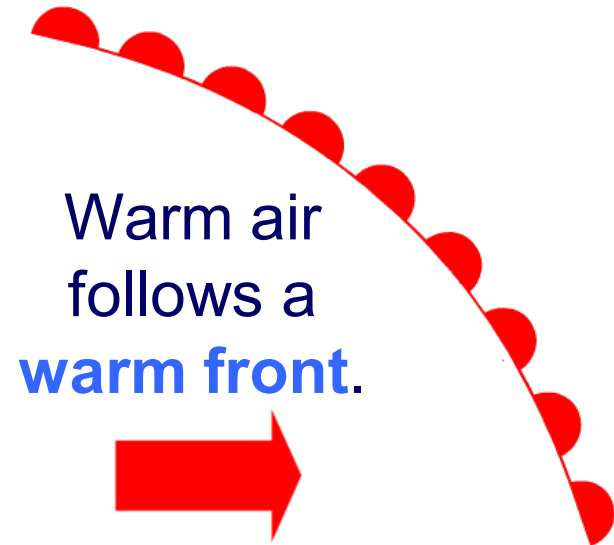
Cold and dry, forming further south than Arctic air masses.

What happens when air masses meet?

The junction between two different air masses is called a **front**. A front is associated with a change in the weather.



Cold air pushes under the warm air, producing strong winds and heavy rain.



Warm air rises over cold air, usually producing clouds and rain.

Depressions (low pressure systems) form when a cold air mass meets a warm air mass.



Passage of a depression



Parts of a depression





Summary quiz

