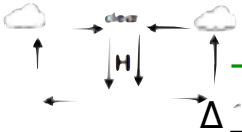
Factors that Affect the Weather

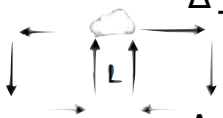
1. Weather is The atmospheric conditions for a location at a specific time. Includes temperature, humidity, cloudiness, precipitation and wind speed.

2. Air Pressure
   a. Air pressure is the _ the force of the air pressing down on the Earth's surface.__
   b. Air pressure depends on the density of the air Density is how tightly packed the material is in an object___
   c. Factors that affect air pressure
      Δ Temperature higher temperature = less density = lower pressure
      Δ Water Vapor moist air is less dense = lower pressure
      Δ Elevation as altitude increases, density decreases
   d. Measured with a ___barometer_____

4. Air pressure and Weather
   a. High pressure



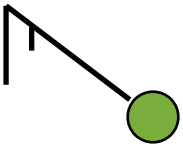
      Δ _occur when larges masses of air come together in the upper atmosphere.___
      Δ _air pushes down from higher pressure above_
      Δ _usually brings clear skies__
   b. Low pressure



      Δ _occur when large masses of air move apart in the upper atmosphere__
      Δ _reduces pressure on warm layers of air below allowing it to rise_
      Δ _usually brings clouds and precipitation_
   c. Isobars __lines connecting areas of equal pressure___

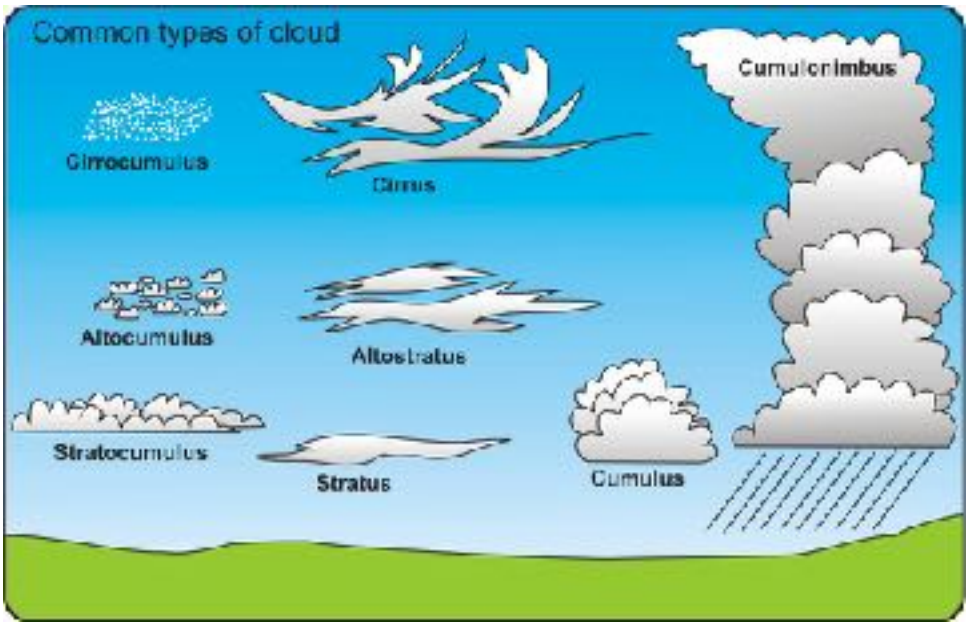
5. Local Wind
   a. as the air in a location is warmed it _rises_ and cooler air moves in to take its place.
   b. Winds and pressure
      Δ Winds blow in toward the center of _low pressure_
      Δ Winds blow outward from the center of _high pressure_
   c. Measured with an __anemometer_____
   d. Wind symbols on a weather map

Bars = give wind speed = 15



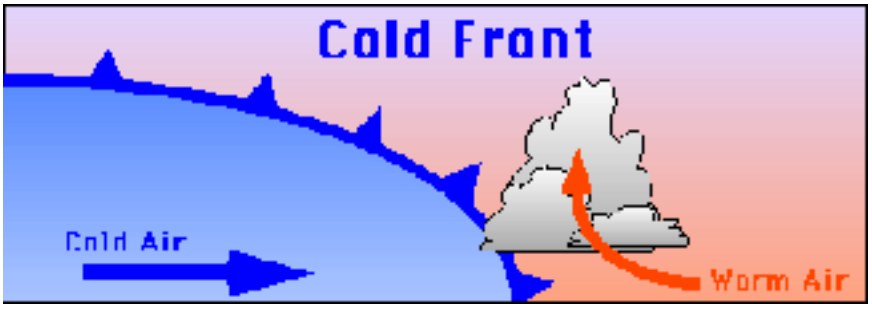
Direction = toward the circle = NW

6. Clouds
   a. Warm air can hold _more_ moisture than cold air.
   b. When warm air rises it cools and the water vapor _condenses_
   c Clouds form when moisture condenses on __dust or small particles__
   d. Cloud droplets can increase in size until gravity pulls them to the Earth as _precipitation___



Changes in the Weather

1. Changes in the weather are caused by __movement of air masses__
2. Air masses with different __temperatures_ do not easily mix.
3. __Fronts__ form at the boundary where two air masses with different properties meet.
4. Types of Fronts
    a. Cold Front



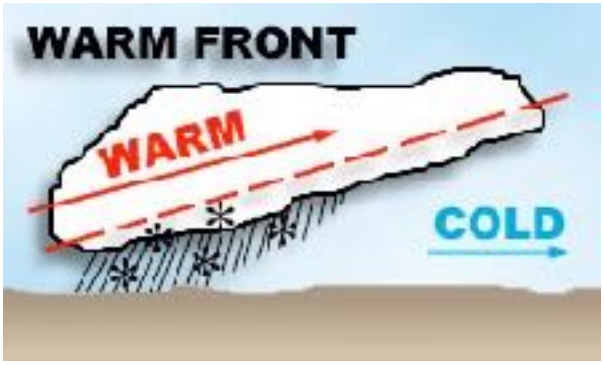
Δ Cold air mass _meets and pushes under___ a warm air mass.

Δ Warm air is pushed up and _clouds form__

Δ Weather: Precipitation rain or storms and after the front

Temperatures _decreases after the front passes___

b. Warm Front

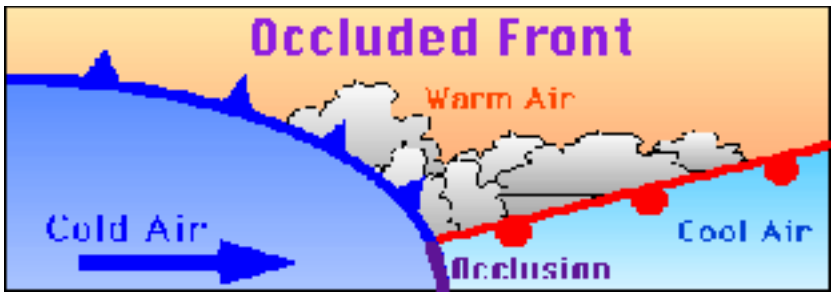


Δ Warm air mass _overtakes and pushes over_ a cold air mass.

Δ Weather: Precipitation rain or storms BEFORE the front

Temperatures _increases after the front passes___

c. Occluded Front

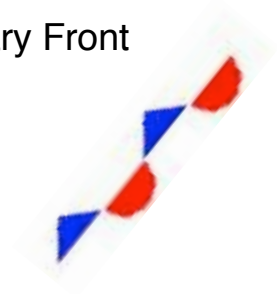


Δ A cold front travels faster than a __warm front_

Δ When a _cold front_ overtakes a _warm front__ an occluded front forms

Δ Weather __less extreme weather than a cold or warm front____

d. Stationary Front



Δ When a warm air mass meets a cold air mass and __no movement occurs__ a stationary front is formed.

Δ Weather __several days or rain or snow____