

# — Water in the Atmosphere

# Characteristics of Water

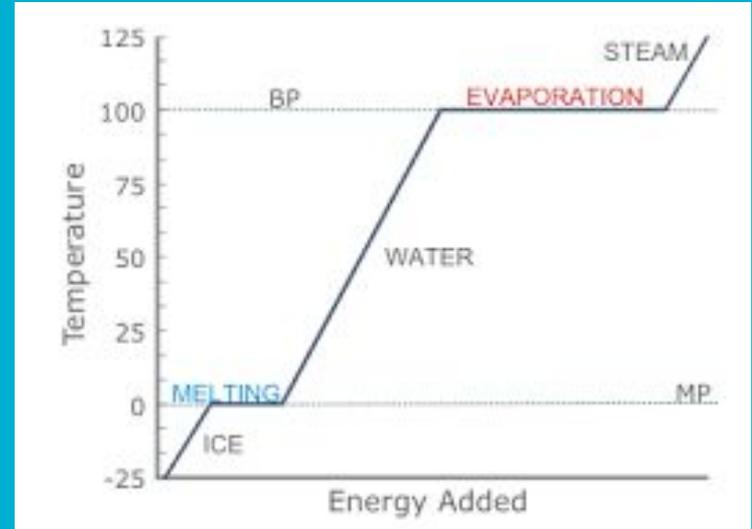
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- Water is found in 3 different phases in the atmosphere
  - Solid
  - Liquid, and
  - Gas
    - We can't see water vapor (gas), but we can feel it.
- Water in the atmosphere changes state continually.

# Remember this from last year?

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- When energy is absorbed - energy goes into the water - the temperature increases.
  - ex. ice, melting, liquid, evaporation, water vapor
- When energy is released, energy comes out of the water - the temperature decreases
  - Ex. water vapor, condensation, liquid, freezing, solid

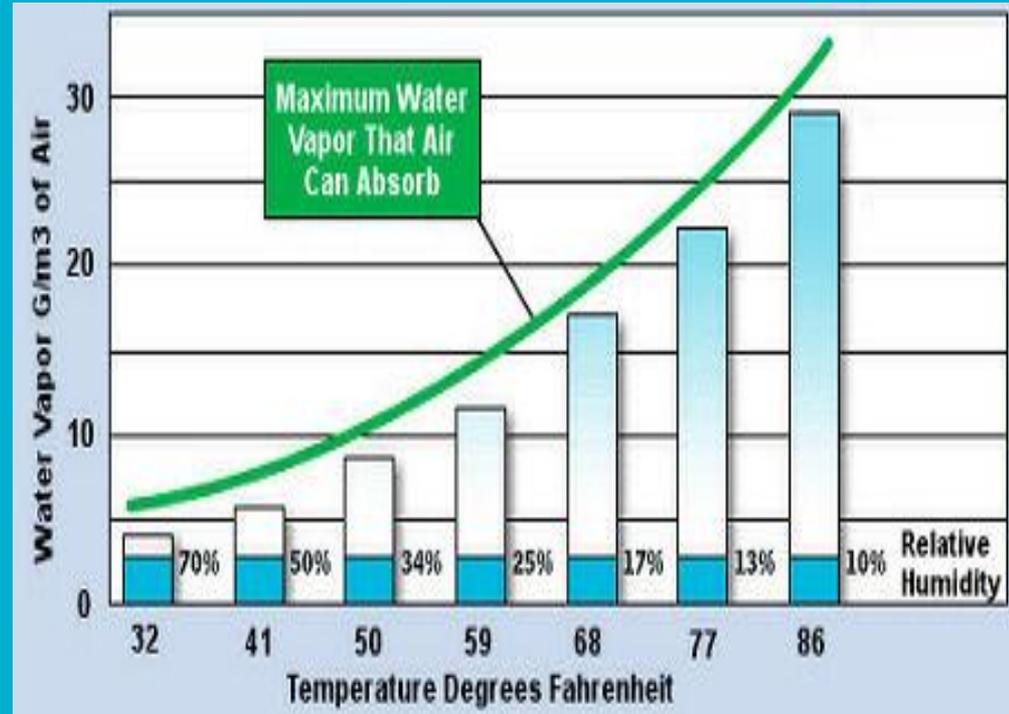


# Humidity

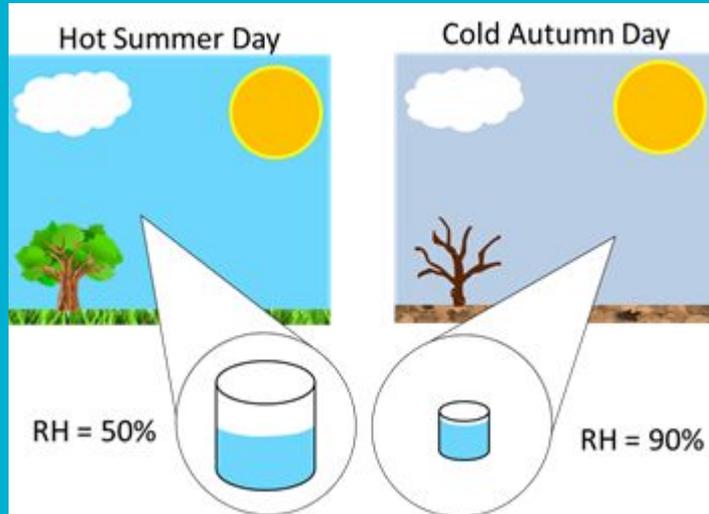
Humidity is the amount of water that is in the air.

As water evaporates, the humidity in the air increases.

The warmer the air, the more water the air can hold, the cooler the air, the less water it can hold.



# Relative Humidity

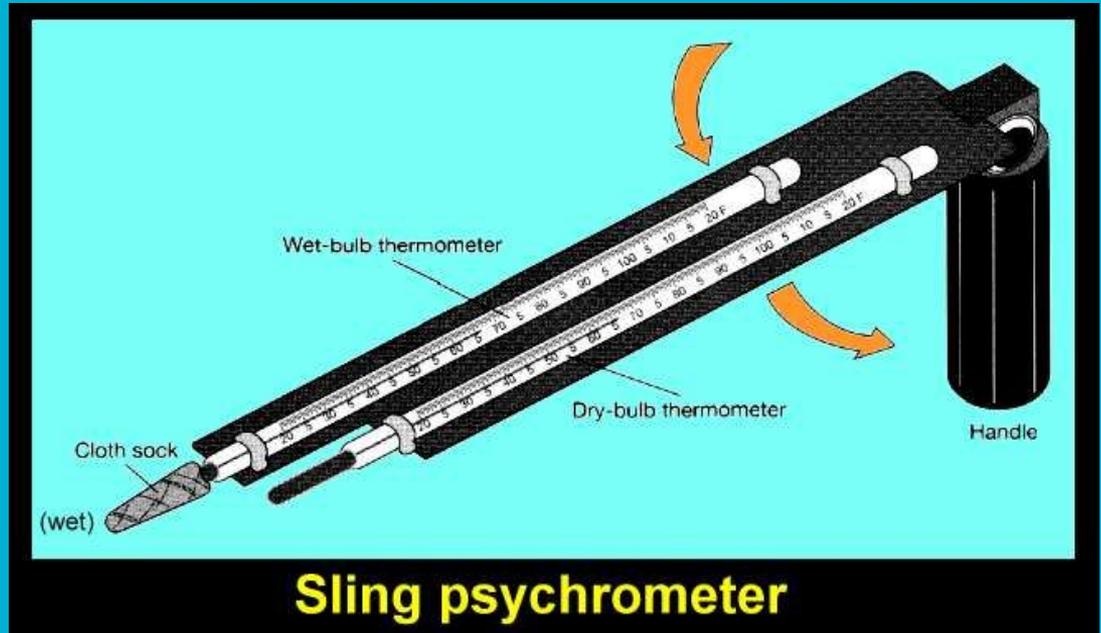


Relative humidity is the amount of moisture in the air compared with the maximum amount it can hold at a particular temperature.

When the air holds all of the water it can at the current temperature, it is saturated, meaning it cannot hold anymore.

# Measuring Relative Humidity

- A psychrometer is an instrument used to measure relative humidity.
- A psychrometer consists of 2 thermometers.
  - One thermometer is called the wet- bulb, which is covered with a damp cloth.
  - The other thermometer is called a dry-bulb and is used to measure air temperature.



# Condensation

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- When a water vapor releases energy, cools, and turns into a liquid.
- Before condensation can occur, the air must be saturated.
- Dew point is the temperature air must cool to be saturated.
  - An example of this is water vapor condensing on grass or leaves, forming small water droplets called dew.

# Clouds



When water vapor in the air reaches the dew point, or temperature needed be saturated to condense, a cloud is formed.

A cloud is millions of tiny water droplets or ice crystals suspended in the air.