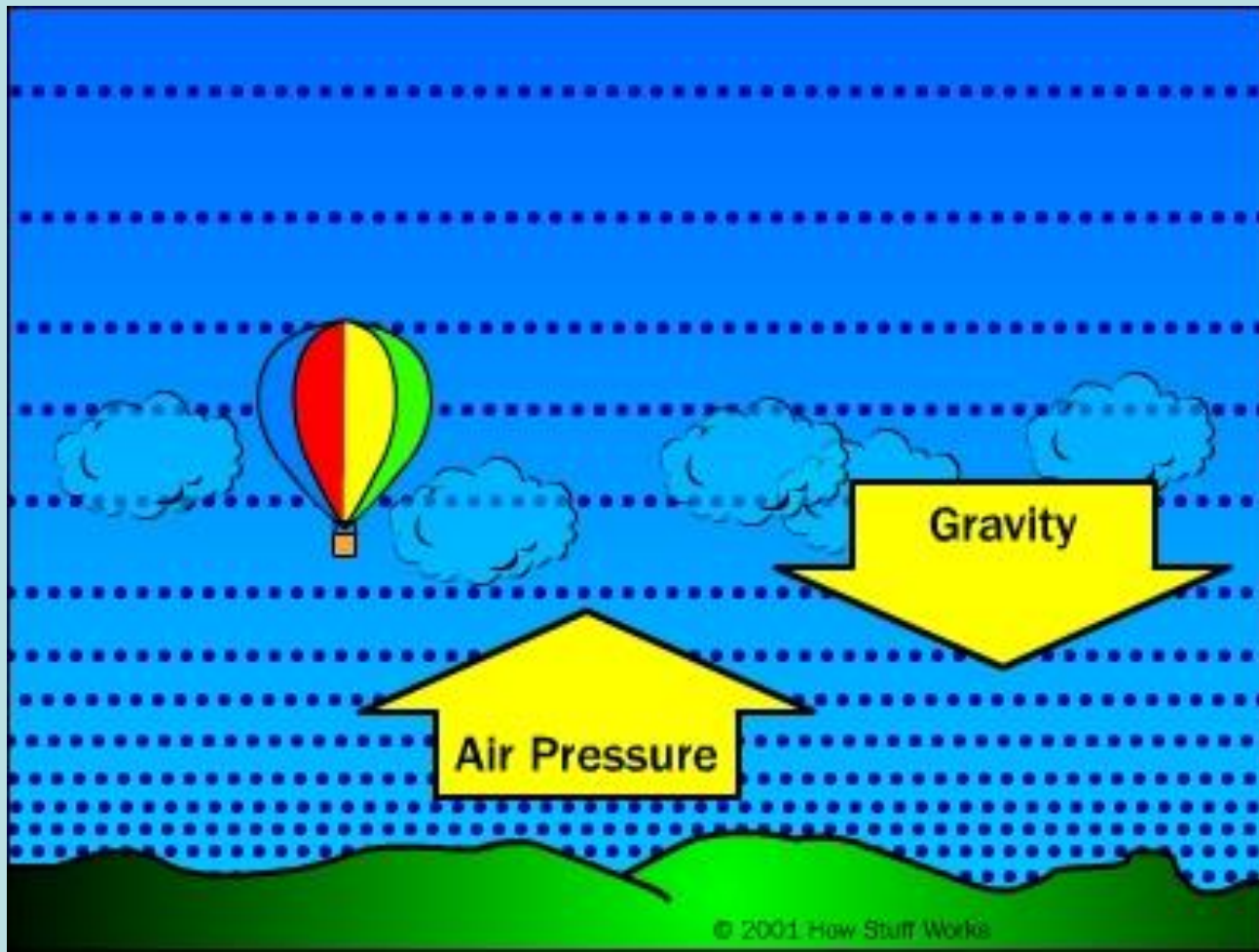


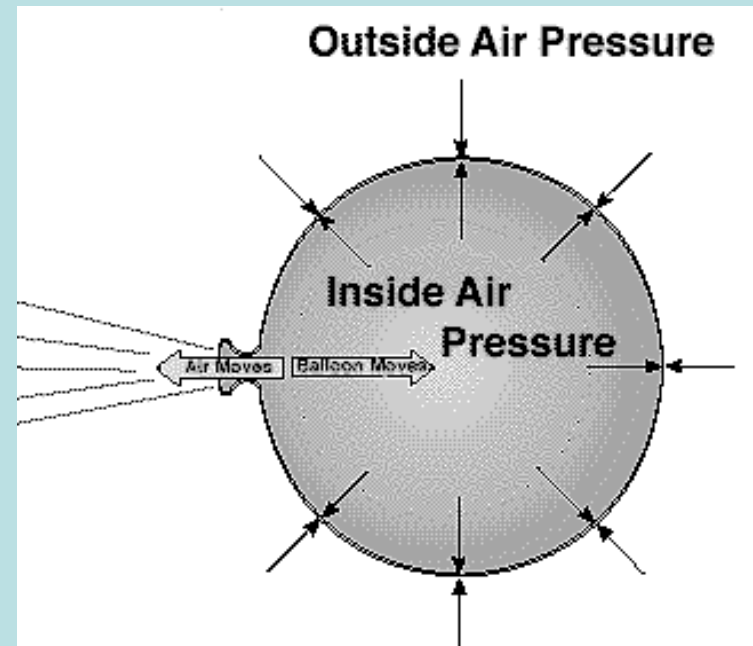
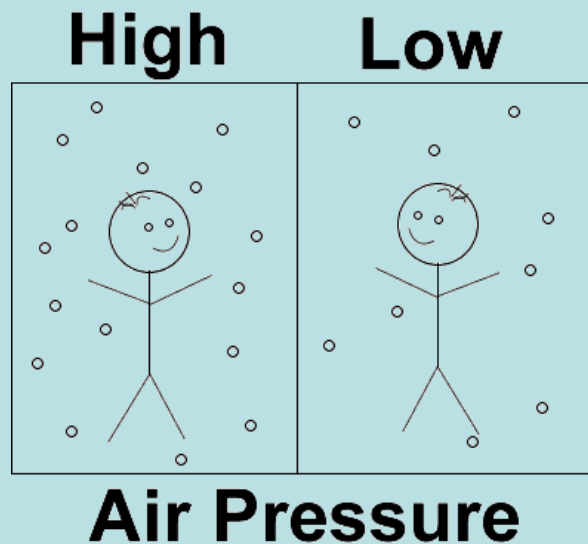
# Air Pressure

Can you feel it?

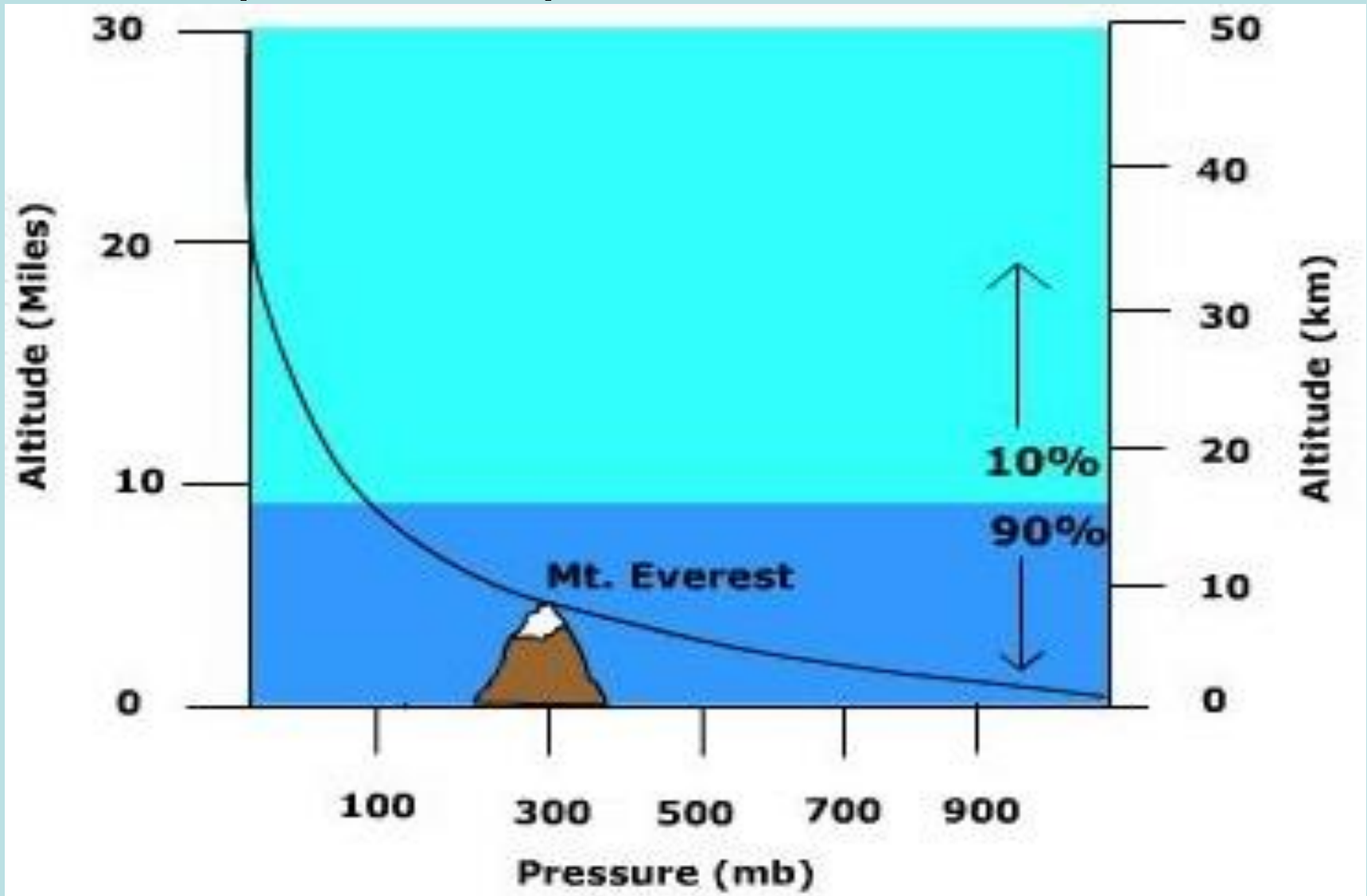


# Air Pressure

- Air pressure is the measure of the force with which air molecules push on a surface.
- Air Pressure is GREATEST at the surface of Earth because *there is more of the atmosphere above you to push down on you.*



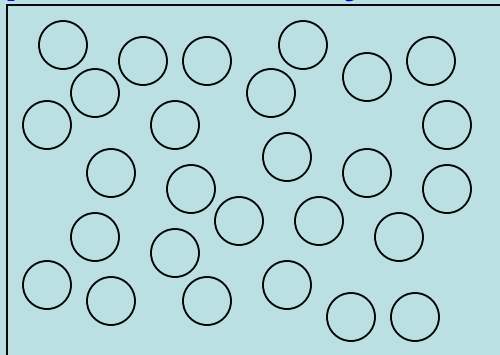
- As you **move UP** through the atmosphere, air pressure **decreases**.



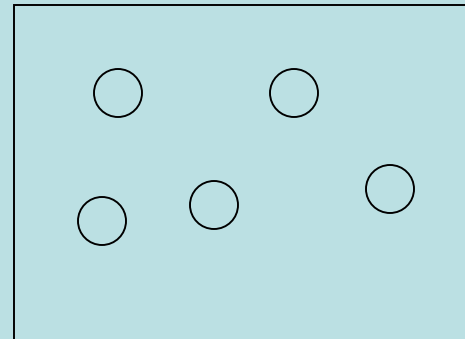
# Air Pressure is dependant on DENSITY

- **More dense air** will have a higher air pressure- there are more air molecules in a given space to push down on you
- **Less dense air** will have a lower air pressure- there are fewer air molecules to push down on you.

**More Dense= more particles  
to push down on you**



**Less Dense= fewer particles  
to push down on you**

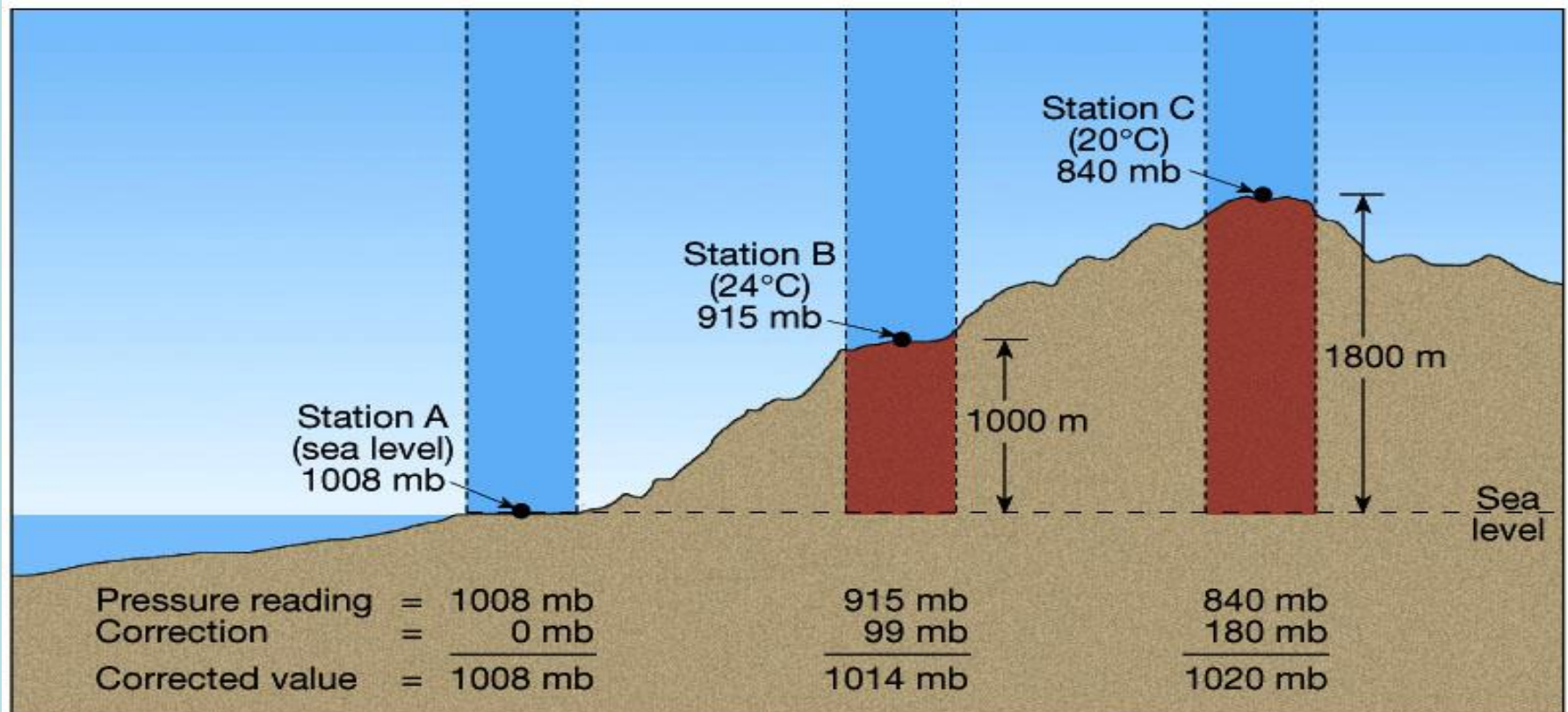


# Air Pressure is affected by 3 factors

- 1- Elevation or altitude
- 2- Water content or humidity
- 3- Temperature

# Impact of Elevation on Air Pressure

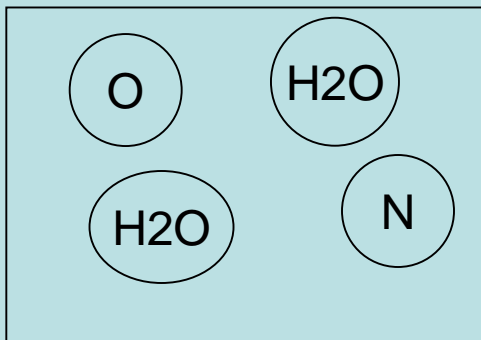
- As you move up through the atmosphere, air pressure decreases.
  - There are fewer air molecules above you to push down on you, so the force of the air will be less.



# Impact of **Water Content**, or **Humidity**, on Air Pressure

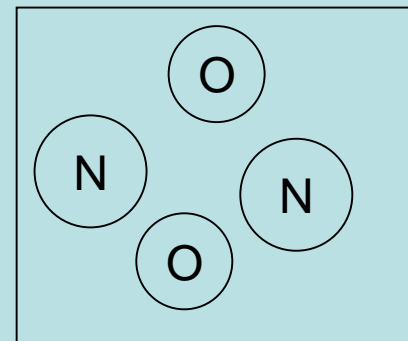
- Moist air is less dense than dry air, and therefore has a lower air pressure.
  - **A water molecule has less mass than other molecules that make up the air.** If you replace some of the air molecules with water molecules, the water lowers the density (and lowers the air pressure)

Moist Air –  
less dense



**Weighs less since  
H2O is lighter  
than Nitrogen and  
Oxygen**

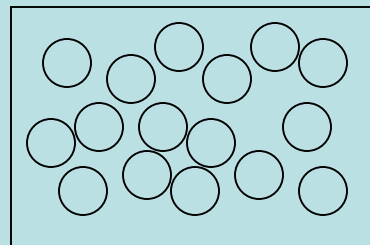
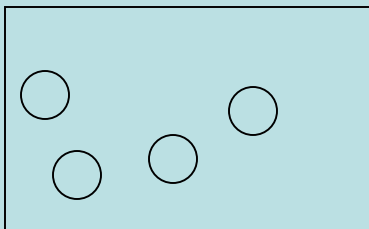
Dry Air –  
more dense



# Impact of **Temperature** on Air Pressure

- Warm air is less dense than cold air. Therefore, warm air has a lower air pressure and **cold air** has a higher air pressure.
  - **The molecules in warm air are moving fast and are spread farther apart.** Therefore there are fewer air molecules in a given area to push down on you.

Warm  
Air



Cold Air



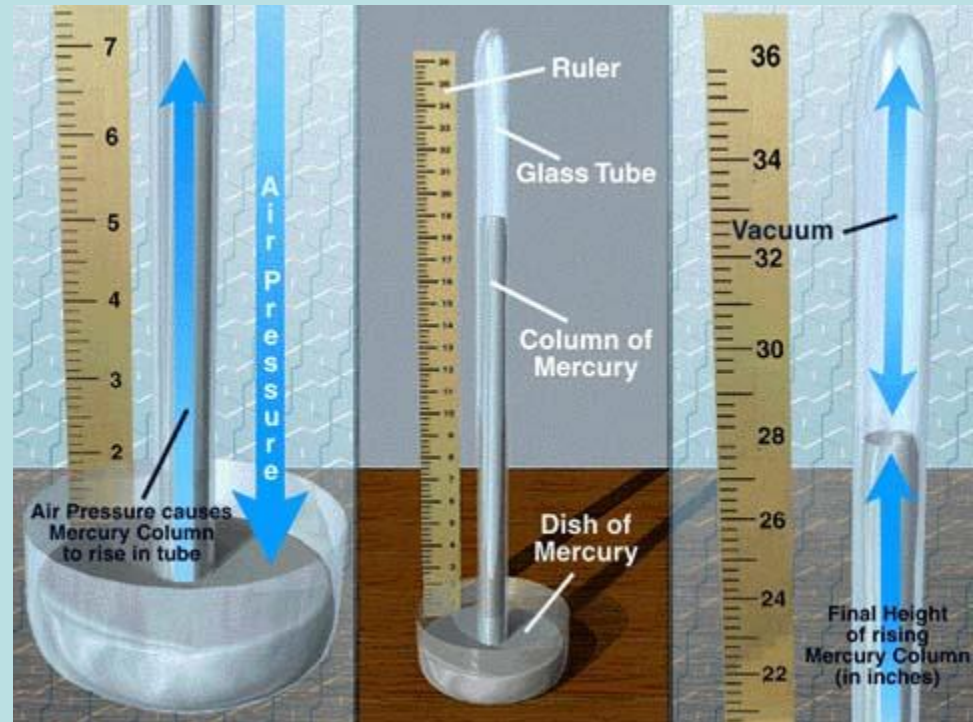
# Barometer

- The piece of equipment used to measure air pressure is a **Barometer**

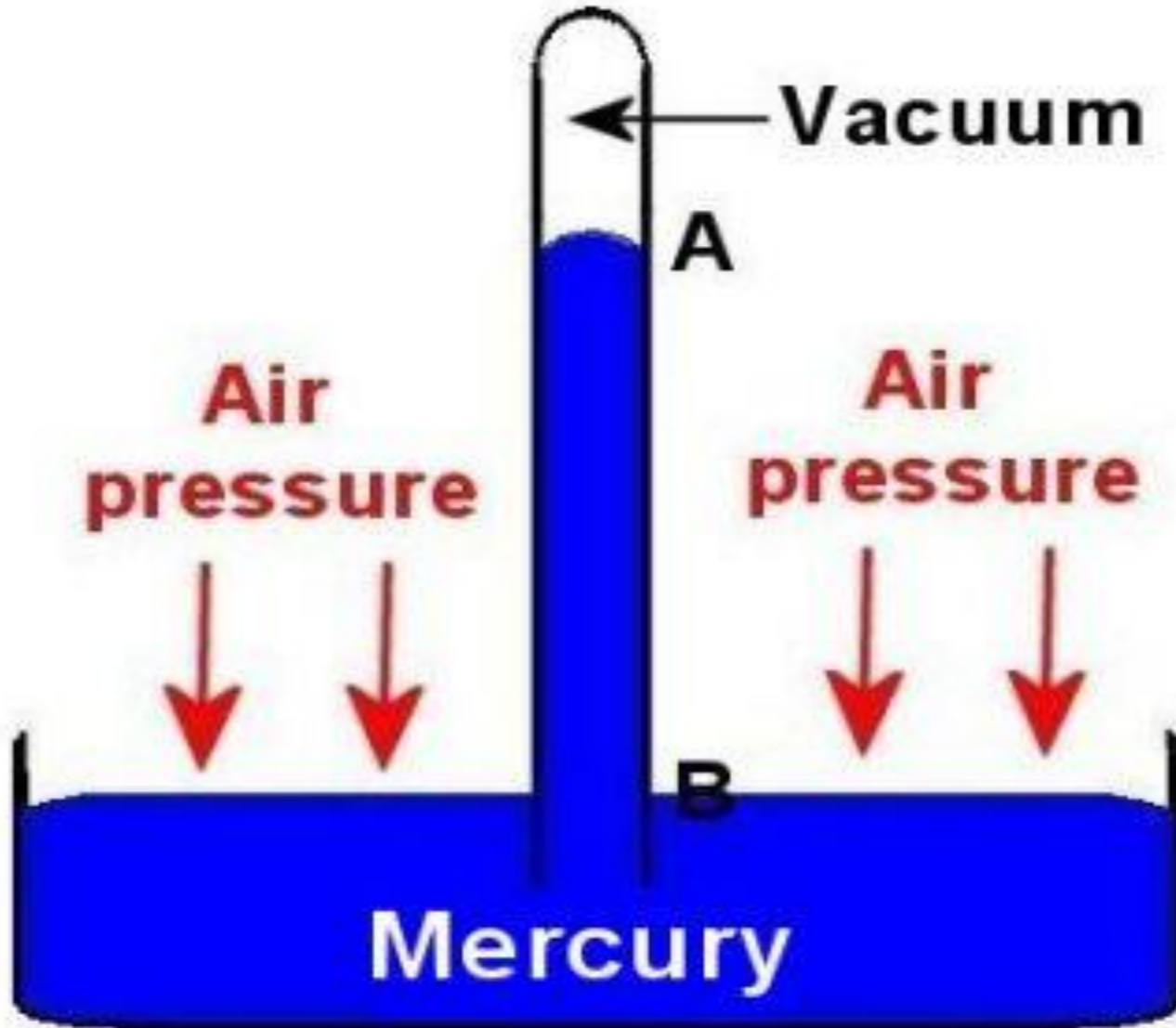
Aneroid Barometer



Mercury Barometer

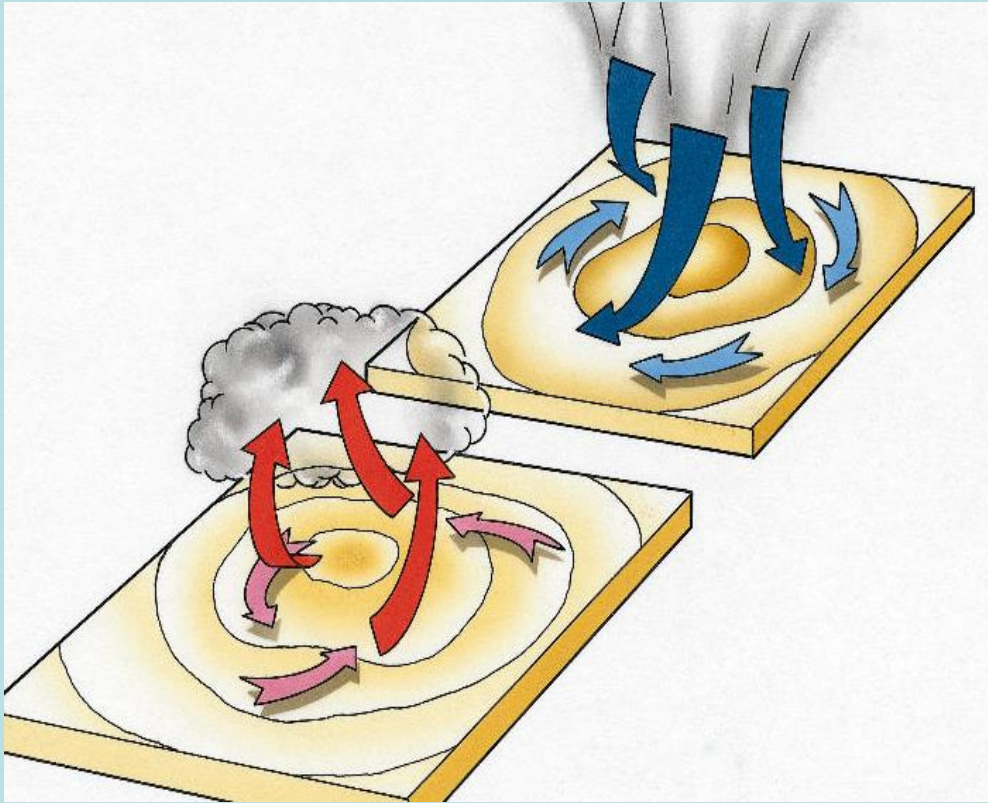


# Mercury Barometer



# Air Pressure Affects the Weather

- Air pressure in a weather system reflects the amount of water in the air, which affects the weather.



**Low** air pressure usually results in **Bad** weather: stormy, cloudy, overcast.

**High** air pressure usually results in **Good** weather: clear skies, no precipitation

# Air Pressure on a Weather Map

- Areas of **High** and **Low** pressure are shown on a weather map with an **H** or an **L**.

