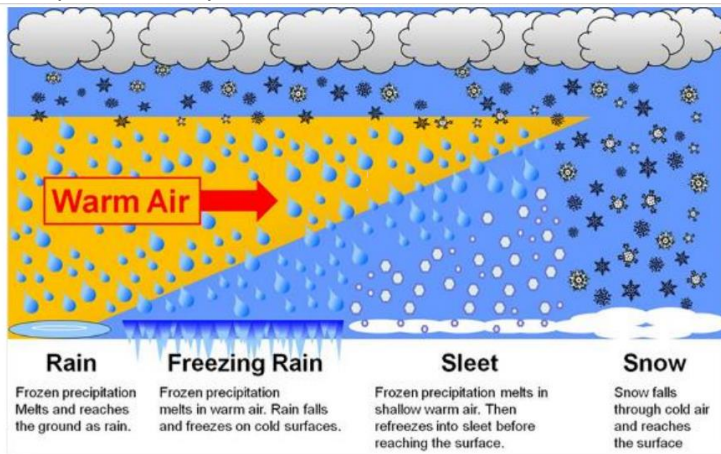**Weather and Climate #5**: Relate the different forms water can take (i.e., snow, rain, sleet, fog, clouds, dew, humidity) as it moves through the water cycle to atmospheric conditions (i.e., temperature, pressure, wind direction and speed, humidity) at a given geographic location.

Humidity - The amount of water vapor in a given volume of air.
Precipitation - Any form of water that falls from clouds and reaches Earth's surface

Rain	Freezing Rain	Sleet	Snow
Frozen precipitation Melts and reaches the ground as rain.	Frozen precipitation melts in warm air. Rain falls and freezes on cold surfaces.	Frozen precipitation melts in shallow warm air. Then refreezes into sleet before reaching the surface.	Snow falls through cold air and reaches the surface

Hail - Ice pellets which are tossed up and down in a cumulonimbus cloud (storm cloud), growing larger as they gain layers of ice until they are finally heavy enough to fall to Earth against the updraft.

Dew Point - The temperature at which condensation begins.
Dew – The ground temperature is cooler than than the air above condensing the water vapor in the air into water on the object on the ground.
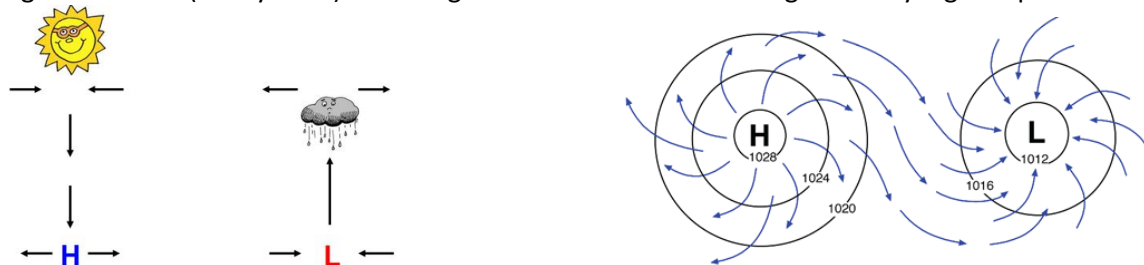
Fog – A cloud that forms at or near the ground.
Cloud – When water vapor in the air condenses to form liquid water or ice crystals.

Air Pressure – The result of the weight of a column of air pushing down on an area
Low Pressure – (cyclone) a swirling center of counter-clockwise rotating relatively low air pressure
High Pressure – (anticyclone) a swirling center of clockwise rotating relatively high air pressure

Altitude – the distance above sea level
- How Altitude affects weather – as altitude increases air pressure decreases and temperature decreases

Proficiency Questions students will need to know:
1) Draw and label the four different types of precipitation that occur due to the difference in temperatures as they fall from clouds to the surface of the Earth.
2) Use your diagram above to help you explain the path each of the following types of precipitation takes as it travels toward the Earth's surface from a cloud.
3) Illustrate how air moves in a low pressure system and how air moves in a high pressure system.
4) What are the conditions that are needed for dew to form?
5) What is humidity? What are the 2 atmospheric conditions that affect it.