Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_- Block \_\_\_\_\_\_ Binder Page # \_\_\_\_\_\_

**Relative Humidity Notes**

**Learning Goals – Understand how clouds, rain, and other types of precipitation form**

**Understand the relationship between specific humidity, relative humidity, and capacity**

In our atmosphere, H\_\_\_\_\_\_\_\_\_ pressure is near the surface, and L\_\_\_\_\_\_\_ pressure is farther up.

Pressure gets L\_\_\_\_\_\_\_\_\_\_ and L\_\_\_\_\_\_\_\_\_\_\_ as you go up.

As the pressure decreases, the volume of air I\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

As the volume of the air increases, the temperature C\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

As air rises and E\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ it cools!!

Air rises because…. 1. Surface is H\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, air is warmed and becomes less D\_\_\_\_\_\_\_\_\_\_\_.

2. M\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ air runs into Mountains and must get O\_\_\_\_\_\_\_\_\_\_ them.

3. T\_\_\_\_\_\_\_\_\_ air fronts of similar temperature meet, air will be F\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ up.

4. Cold front force W\_\_\_\_\_\_\_\_\_\_\_ air to rise because cold is M\_\_\_\_\_\_\_\_\_\_\_ dense.

Facts - As Pressure D\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Volume I\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

As Volume I\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Temperature D\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Hot air can hold more W\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ V\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than Cold Air.

**Specific Humidity** - The a\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of water that is ACTUALLY in the A\_\_\_\_\_\_\_.

Measured in g / m3

**Capacity** – The M\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ amount of water the A\_\_\_\_\_\_\_\_ can hold

Depends upon the T\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the air.

Cooler air holds L\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Warmer air holds M\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

How much water can 50 deg. C water hold? \_\_\_\_\_\_\_\_\_\_ 30 degree water? \_\_\_\_\_\_\_\_\_\_\_\_ 10 degree C \_\_\_\_\_\_\_\_\_\_

**Saturation / Saturated Air** – describes air that C\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ hold any more W\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

The air is F\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of water.

Specific Humidity = Capacity (how much water is in the air = max amount that can be)

Jungle – What starts to occur at saturation? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Relative Humidity** – always measured as a %

Right Now – there is 82% of what the air COULD hold.

**Relative Humidity Formula**

Specific Humidity x 100 = \_\_\_\_\_\_% Relative Humidity

Capacity

Sling Psychrometer!!!!

**Dew Point** – the temperature at which A\_\_\_\_\_\_\_\_ reaches \_\_\_\_\_\_\_\_\_\_\_ % relative H\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

10 C 20 C 30 C

\_\_\_\_\_\_% \_\_\_\_\_\_% \_\_\_\_\_\_% Relative Humidity

**Adiabatic Rate** – the rate at which T\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the air decreases as it R\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dry Adiabatic Rate – cools \_\_\_\_\_\_ degrees C for every \_\_\_\_\_\_\_\_\_\_\_\_\_ meters in rise

Condensation Level – Dew Point – C\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ form

Wet Adiabatic Rate – cools \_\_\_\_\_\_ degrees C for every \_\_\_\_\_\_\_\_\_\_\_\_ meters in rise