**Humidity Reference Sheet:**

**Name: Date: Period:**

Warmer air can hold more water than cold air

**Humidity** – general term referencing water vapor in the atmosphere

**Dew Point** – Temperature at which liquid water will evaporate as fast as water vapor will condense

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| **Temperature Outside** | **Dew Point** | **Relative Humidity** | **What’s Going On** |
| 70° F | 60° F | < 100% | Air is humid |
| 60° F | 60° F | 100% | Evaporation = Condensation |
| ≤ 60° F | 60° F | Over Saturated | Dew/Clouds begin to form |

**Relative Humidity** – How close to reaching the dew point the air temperature is or how close the air is to holding as much water vapor as it can (saturated point)

100% Relative Humidity = Air Temperatures at Dew Point = Air holding as much water vapor as it can

Example:

The temperature outside is 70° F and the dew point is found to be 60° F. If the air temperature cools to 60° F we are now at 100% relative humidity and the air is saturated. If the air cools any more than this can happen:

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| **Location Where Dew Point Equals Air Temp.** | **What happens:** |
| Higher in the atmosphere | Cloud forms |
| Just above the ground | Fog forms |
| In contact with grass or car | Dew forms |

In Review:

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| **Term:** | **What it Means:** | **Measure in:** | **Application:** |
| Dew Point | Temperature at which condensation rate = evaporation rate | Degrees | Dew Point = 20° C  Dew/clouds will begin to form when air cools below 20 degrees |
| Relative Humidity | How close air is to be fully saturated with water vapor | Percent | At 20° C, the air can hold 17 grams per cubic meter. If there is 9 g/m3 of water vapor when its 20° C, then 9/17 x 100 = 53% Relative Humidity |
| Absolute Humidity | Measure of the actual amount of water vapor in the air | Grams of water vapor per cubic meter of air | In a cubic meter of air, there is 8 grams of water vapor, Absolute Humidity = 8g/m3 |

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**Humidity** –

**Dew Point** –

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| **Temperature Outside** | **Dew Point** | **Relative Humidity** | **What’s Going On** |
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| 60° F | 60° F | 100% |  |
| ≤ 60° F | 60° F | Over Saturated |  |

**Relative Humidity** –

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Relative Humidity = Air Temperatures at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_= Air holding as much water vapor as it can

Example:

The temperature outside is 70° F and the dew point is found to be 60° F. If the air temperature cools to 60° F we are now at 100% relative humidity and the air is saturated. If the air cools any more than this can happen:

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In Review:

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| **Term:** | **What it Means:** | **Measure in:** | **Application:** |
| Dew Point |  |  |  |
| Relative Humidity |  |  |  |
| Absolute Humidity |  |  |  |

Analysis Questions:

1. Why is it more humid during the summer time than the winter time?

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1. What is the relative humidity when the air temperature drops to the dew point? What is occurring at this point? What happens if it gets cooler?

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1. Will it rain when the relative humidity reaches 100%? Why or why not?

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1. As relative humidity increases, what is happening to the difference between the air temperature and the dew point? Explain why?

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