Activity: Make Your Own Wet Bulb

For a simple explanation of wet bulb temperature & its connection to climate change see: Why you need to worry about the wet bulb temperature

To learn how to make your own wet bulb thermometer follow these directions from Hessong, Athena. "How to Determine Relative Humidity From a Wet & Dry Bulb Thermometer"

Relative humidity shows how much moisture the air could hold compared to how much it does hold. This percentage differs at various temperatures as warmer air has a greater capacity for holding moisture than cooler air. Determining the relative humidity using two thermometers lets you cheaply find out if your home or area has too much or too little moisture in it. Excess moisture can breed mold while not enough dries out skin. Prevent these problems by using dehumidifiers or vaporizers to manually adjust the environmental humidity.

Directions:

1. *Tape two bulb thermometers (Celsius if available) side by side (about 3 inches apart) onto the piece of cardboard with their tips hanging off the side of the cardboard. Record the temperature from both thermometers in degrees Fahrenheit or degrees Celsius.*
2. *Dip the facial tissue (or cloth) into water to soak. Squeeze out the excess liquid.*
3. *Wrap the damp tissue around the bulb of one of the two thermometers. Do not get the other thermometer wet.*
4. *After 10 minutes record the temperature from both thermometers in degrees Fahrenheit or degrees Celsius. The dry thermometer measures air temperature and the tissue-wrapped thermometer determines evaporation temperature.*

5. ***If your reading is in Celsius skip this step.***
    - *Convert both Fahrenheit readings to degrees Celsius by subtracting 32 from the Fahrenheit temperature and multiplying the result by (5/9). For instance, for a temperature of 50 degrees F: 50 – 32 = 50; 18 x (5/9) = 10 degrees Celsius.*
    - *Subtract the evaporation temperature in degrees Celsius from the air temperature in degrees Celsius.*
6. *Access a relative humidity chart. To find the relative humidity based on your data, follow these steps.*
   relative humidity chart
    a. *Look on the left side of a relative humidity chart to find the row for the air temperature (dry thermometer reading) in degrees Celsius.*
    b. *Scan the column headings at the top of the chart to locate the difference between the air temperature and evaporation temperature.*
    c. *Find where the temperature difference column intersects the row with the air temperature and use this number as the relative humidity.*