Observation and Inference

Observations are made when an organism uses their senses to understand the world around them. **Observations** can be recorded in two ways: **quantitatively or qualitatively**. Quantitatively refers to numbers or measurements; hence, the term quantity! Example: The movie starts @ 8pm. Or, it took one hour to walk the Golden Gate Bridge. Qualitative are those observations made without numbers or measurements. Examples: I heard the hawks screeching in the distant mountains. Or, something is tickling my skin.

Inferences are explaining observations. It's not just a guess but an explanation based on background information and experience. Example: I think the firewood is dry because I can hear it crackling. The qualitative observation is hearing the wood cracking; whereas, the inference that the wood is dry is based on previous knowledge and experience that dry wood crackles and pops when it burns (not to be confused with *Rice Crispies* that crackle and pop when they are wet!). Another example: It must be around 3pm because the fog is starting to roll in. The inference that it's around 3pm is based on observations made in the past that when the fog starts to roll in is in the mid-afternoon. Notice that a statemtent with an inference usually has the word "because" in it because that word is used to explain something. (So, for that previous statement, can you pick out the observation and the inference? By now you should be able to!) Usually an inference answers "why" or "how" questions. Examples: Why did this happen? How did this happened? Why didn't this work? Why is this here?

Activity 2: Is there a relationship between age and height? How about gender and height?

1. Develop a hypothesis.
2. Collect and record the class data for height, age and gender in an organized manner.

Be sure to use a ruler and pencil. Use your own paper. Remember the independent variable or manipulated variable affects the dependent variable or the responding variable. (Placing the I.V. in the left column of a data table and the D.V. in the right column of a data table is a good method to use.)

HW: Complete on this paper.

1. Construct a graph which will allow you to predict the height of a person at age 5, 10, 15 and 20.
2. Graphs must include: x and y axis labels (the x axis is the independent variable and the y axis is the dependent variable), title, even increments per axis, and the use of ruler and pencil. Graphs should be large enough to be as accurate as possible.

1. What are the average heights for a 5,10,15, and 20 year old according to your graph?

_____

2. Would separating gender give a more accurate prediction? _____Why? _____