Scientific Method Notes

Scientific Method: A _____ way to solve _____.

Thinking like a scientist…

1. Observation:_____
2. Observation:_____
3. Observation:_____

Observations vs. _____

Step 1: Observations and _____ (Collect information).

- Look for _____, use our 5 _____.
- A observation is NOT an inference, which is an _____ based on our facts (conclusion).

Step 2: Problem Statement

- Ask a question….
- What is the _____ we are trying to _____?
- A _____ is a question that compares _____.
- Example: Does the drop height affect the bounce height of a superball?

What are variables?

- A variable is something that changes.
- **There are independent variables and dependent variables.**
- **_____ variable:**
- The variable that we change _____ in an _____.
- The variable whose value we _____ before we start an experiment.
- Example: We know the _____ we will use.
- **Dependent variable:**
- The variable that changes based on our _____.
- The variable we _____ know before our experiment.
- What's being _____?
- Example: We do not know the _____ before we start.
- **Constant (control):**
- - the factor or group that is _____ kept the same in an experiment.
- - No _____.
- Example: The _____does not change during the experiment.

Step 3: Form a Hypothesis

- _____: "Educated guess"
- A scientific explanation for a set of observations.
- The tested statement in your _____.
- If……._____" statement.
- Example: If a superball is dropped from increasing heights then the bounce heights will also increase because…..

Step 4: Set Up an Experiment

- Only _____ dependent variable changes at a time.

Step 5: Record and _____ Results

- Data: Information gathered _____. Used to make inferences.

Why Do We Use Graphs?

- Help us _____ numerical data.
- There are several types:

Step 6: Draw Conclusions

- Evaluate _____.
- State whether your data supports or rejects your _____.