



Hypothesis Writing 101

I. What Is a Real Hypothesis?

What's a hypothesis? You may have already heard of this word "hypothesis" before when writing an essay or structured paragraph right? Well, in science the hypothesis takes on slightly different form. Check it out people:

"A hypothesis is a _____ statement that proposes a _____ explanation to some phenomenon or event. A useful hypothesis is a _____ statement that may include a _____."

But wait. **A hypothesis should not be confused with a _____**

Theories are general explanations based on a _____. For example, the theory of evolution applies to all living things and is based on wide range of observations. However, there are many things about evolution that are not fully understood such as gaps in the fossil record. Many hypotheses have been proposed and tested, but only one theory is made. Got it? A theory is also something that will require several little hypotheses to be proven.

II. When Are Hypotheses Used?

The key word is _____. Usually, a hypothesis is based on some previous observation such as noticing that in November many trees undergo color changes in their leaves and the average daily temperatures are dropping or that whenever it is Hallowe'en time at Cheyne, and there is a large amount of red food dyes in candy, students go absolutely crazy....you know.

Are these two events connected? How? Provide some ideas below:

Note: Any laboratory procedure you follow without a _____ is really _____ an experiment. It is just an exercise or demonstration of what is already known. It's like if you proved to me that gum chewing is really gross to look at and that gum is brutal in hair....I already know that dude.

Ok. Are you ready for a little quiz?

Sort the following hypotheses from the posers....



**There is one little word that can help you determine whether not the above are hypothesis or not. Got it?
Drum Roll please...**

	Yes? No?
- Chocolate will cause pimples	
- Salt in soil may affect plant growth.	
- Plant growth will be affected by the color of the light.	
- Bacterial growth may be affected by temperature.	
- Ultra violet light may cause skin cancer.	
- Temperature will cause leaves to change color.	

Ok. All of these are examples of hypotheses because they use the tentative word "may.". However, their form is not particularly useful.

Using the word may does not suggest how you would go about proving it. If these statements had not been written carefully, they may not have even been hypotheses at all.

For example, if we say "Trees will change color when it gets cold." we are making a _____ Or if we write, "Ultraviolet light causes skin cancer." could be a _____.

One way to prevent making such easy mistakes is to formalize the form of the hypothesis.

III. Formalized Hypothesis: making it sound more...er...formal. Yeah. ☺

Here's are two examples of what I'm talking about:

- 1. If** skin cancer is **related** to ultraviolet light , **then** *people with a high exposure to UV light will have a higher frequency of skin cancer.*
- 2. If** leaf color change is **related** to temperature , **then** *exposing plants to low temperatures will result in changes in leaf color.*

What two words appear in the hypotheses above?

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IV. Hypothesis Worksheet 101

Formalized hypotheses contain two variables.

One is _____ and the other is _____

1. The _____ variable is the one you, the "scientist" control
2. The _____ variable is the one that you observe and/or measure the results.

Check out the sample hypotheses again: (the variables are underlined)

1. If skin cancer is related to ultraviolet light, then people with a high exposure to UV light will have a higher frequency of skin cancer.
2. If leaf color change is related to temperature, then exposing plants to low temperatures will result in changes in leaf color.

Write the independent variables: _____

Write the dependent variables: _____

So, here's the BIG IMPORTANT THING TO REMEMBER: (cue music please)

A hypothesis is it forces us to think about what results we should look for in an experiment.

Rewrite the first four hypotheses using the formalized style shown above. Single underline the dependent variable and double underline the independent variable in the If clause of each hypothesis.

1. _____

2. _____

3. _____

4. _____
