Writing a good hypothesis

**"If \_\_\_\_\_[I do this] \_\_\_\_\_, then \_\_\_\_\_[this]\_\_\_\_\_ will happen."**

Sound familiar? It should. This formulaic approach to making a statement about what you "think" will happen is the basis of most science fair projects and much scientific exploration.

Step by Step

Following the [scientific method](http://www.sciencebuddies.org/science-fair-projects/project_scientific_method.shtml?from=Blog), we come up with a question that we want to answer, we do some initial research, and then **before** we set out to answer the question by performing an experiment and observing what happens, we first clearly identify what we "think" will happen.

What you "think" will happen, of course, should be based on your preliminary research and your understanding of the science and scientific principles involved in your proposed experiment or study. In other words, ***you don't simply "guess."*** You're not taking a shot in the dark. You're not pulling your statement out of thin air. Instead, you make ***an "educated guess"*** based on what you already know and what you have already learned from your research.

If you keep in mind the format of a well-constructed hypothesis, you should find that writing your hypothesis is not difficult to do. You'll also find that in order to write a solid hypothesis, you need to understand what your [variables](http://www.sciencebuddies.org/science-fair-projects/project_variables.shtml?from=Bog) are for your project. It's all connected!

**Hypotheses Tips**

* ***A hypothesis is a statement, not a question.*** Your hypothesis is not the scientific question in your project. The hypothesis is an educated, testable prediction about what will happen.
* ***Make it clear.*** A good hypothesis is written in clear and simple language. Reading your hypothesis should tell a teacher or judge exactly what you thought was going to happen when you started your project.
* ***Keep the variables in mind.*** A good hypothesis defines the variables in easy-to-measure terms, like who the participants are, what changes during the testing, and what the effect of the changes will be.
* ***Make sure your hypothesis is "testable."*** To prove or disprove your hypothesis, you need to be able to do an experiment and take measurements or make observations to see how two things (your variables) are related. You should also be able to repeat your experiment over and over again, if necessary.
* **Make sure your hypothesis is a specific statement relating to a single experiment.**

**Practice!** Use the following statements and 1) identify the independent variable, 2) Identify the dependent variable, 3) What do you think a good control group would be, 4) Identify control variables (constants), & 5) write a good hypothesis – think about how one thing will affect the other and use your ‘if, then’ statements. Try using the words “increase” and “decrease”

1. Chocolate may cause pimples.
   1. IV
   2. DV
   3. Control Group
   4. Control Variables
   5. Hypothesis

2) Salt in soil may affect plant growth.

1. IV
2. DV
3. Control Group
4. Control Variables
5. Hypothesis

3) Plant growth may be affected by the color of the light.

1. IV
2. DV
3. Control Group
4. Control Variables
5. Hypothesis

4) Bacterial growth may be affected by temperature.

1. IV
2. DV
3. Control Group
4. Control Variables
5. Hypothesis

5) Sunlight may cause skin cancer.

1. IV
2. DV
3. Control Group
4. Control Variables
5. Hypothesis

6) Temperature may cause leaves to change color.

1. IV
2. DV
3. Control Group
4. Control Variables
5. Hypothesis