Hypotheses Checklist

Question: The question comes first. Before you make a hypothesis, you have to clearly identify the question you are interested in studying.

Statement: 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.

Clear: 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.

Predictions: If I do \_\_\_\_\_\_, then \_\_\_\_\_\_. Predictions should include both an independent variable (the factor you change in an experiment) and a dependent variable (the factor you observe or measure in an experiment). A single hypothesis can lead to multiple predictions, but generally, one or two predictions is enough.

Variables: 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. (For more information about identifying variables, see: Variables in Your Science Fair Project.)

Testable: 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.

Testable Criteria: To create a "testable" hypothesis make sure you have done all of these things:

* Thought about what experiments you will need to carry out to do the test.
* Identified the variables in the project.
* Make sure you experiment is well controlled and avoids bias.
* Included the independent and dependent variables in the hypothesis statement. (This helps ensure that your statement is specific enough.
* Do your research. You may find many studies similar to yours have already been conducted. What you learn from available research and data can help you shape your project and hypothesis.
* Don't bite off more than you can chew! Answering some scientific questions can involve more than one experiment, each with its own hypothesis. Make sure your hypothesis is a specific statement relating to a single experiment.

Conclusion: At the end of your testing you should be able to say that your data supports or does not support your hypothesis. Invalidating your hypothesis can be as valuable as validating your hypothesis so long as you uncover the underlying causes.