

Characteristics of a Good Science Project

➤ Choose a project that you are interested in and that you are curious about.

➤ Good sources of inspiration are:

<http://hubpages.com/education/k12interactivescienceprojects>

<http://www.sciencebuddies.org>

<http://www.cool-science-projects.com>

<http://www.stevespanglerscience.com/lab/experiments/>

<http://reekoscience.com/category/science-experiments>

<http://ag.ncat.edu/extension/programs/dte/science.pdf>

<http://www.ipl.org/div/projectguide/>

➤ Be able to state where the science is in the project (important!)

➤ Be able to define your variables. The independent variable is the input variable you change during your experiment to observe its effects on the dependent variable (output variable). A control variable (sometimes called ‘controls’) is a variable that you hold constant throughout the experiment. For example, let’s say you wanted to measure plant growth using different amounts of plant fertilizer. In the example shown on the right, the independent variable is the amount of fertilizer (that’s what you’re changing); the dependent variable is plant growth (height) that you measure; and controls are the seeds (from the same packet), the soil (from the same bag), water (same amount given to each plant), and sun (same amount of sunlight).

➤ Projects should have a presentation board with at least the following sections: Title, Question, Research, Hypothesis, Independent & Dependent variables, Procedure, Data results, Graphical results, and Conclusion.

➤ A project should have the following characteristics:

1. An experiment should have only one independent variable and it should be clearly identified.
2. Dependent and control variables should be clearly identified.
3. Trials should be repeated multiple times and data collected for each trial.
4. Results should be able to be measured by counting or by using a measurement tool (scale, watch, ruler, voltmeter, tape measure, thermometer, etc.). Results that are merely observed (for example, “It looks like there is more mold on the apple than on the pear.”) are not truly measured.
5. Results from each trial should be recorded and provided on the board.
6. Data should be summarized by totaling or averaging the results.
7. Either detail or summary results should be graphed.
8. Students should relate the conclusion back to the hypothesis (“My hypothesis was proved to be correct, because . . .”), and be able to state the role “science” plays in the conclusion.

