



Testing Your Hypothesis Worksheet

Designing and conducting an experiment is a key occurrence in your project. When conducting your experiment(s), you and your team need to ask yourselves, "What makes a good experimental procedure".

Step 1. Read the following questions carefully, answering "yes" or "no" for each.

Have you included a description and size for all experimental and control groups?	Yes / No
Have you included a step-by-step list of all procedures?	Yes / No
Have you described how to change the independent variable and how to measure that change?	Yes / No
Have you explained how to measure the resulting change in the dependent variable or variables?	Yes / No
Have you explained how the controlled variables will be maintained at a constant value?	Yes / No
Have you specified how many times you intend to repeat the experiment, and is that number of repetitions sufficient to give you reliable data?	Yes / No
The ultimate test: Can another individual duplicate the experiment based on the experimental procedure you have written?	Yes / No

For a good experimental procedure, you should have answered "yes" to every question.

Every good experiment compares different groups of trials with each other. Such a comparison helps insure that the changes you see when you modify the independent variable are in fact caused by the independent variable. There are two types of trial groups: experimental groups and control groups.

Step 2. Identify the experimental group(s) for an experiment. Remember, the experimental group consists of the trials where you change the independent variable.

Example Hypothesis: *If I add fertilizer to my plants, then they will grow bigger.*

What is the experimental group?

The experimental group consists of all trials in which the plants receive fertilizer.

Step 3. Now that you have identified the basis of experimental groups, use the following hypothesis to identify the controlled variables:

Example Hypothesis: *If I add fertilizer to my plants, then they will grow bigger.*

What are the control groups?

1. Water
2. Light
3. Temperature/Warmth

When testing the growth of plants, you would want to make sure that every trial received the same amount of water, light and temperature/warmth.