Getting Started on the Research Plan

Once you have decided on your topic and figured out a question/problem you would like to look into you should continue your research by using a logical, scientific method of problem solving. The following gives some hints on various parts of the research plan.

**State the Problem:** This should be written in a researchable way.

Example: Does adding oak wood ashes to ivy plants affect their root length?  
Bad Example: How do oak wood ashes affect ivy plants?

**Rationale:** Along with stating the problem, you should give a reason or two as to why you are interested in doing your experiment.

Example: I am interested in doing this project because I like to grow ivy plants in the sun room in my house. I am always wondering if there are ways to improve their health.  
Bad example: I want to prove to farmers how they can grow better plants.

**Hypothesis:** This should be a cause/effect answer to the problem. It should be an educated guess based on research that you have done for your lit review.

Example: If I grow ivy plants in plain soil and in soil that has had oak wood ashes added then the ivy plants with the oak wood in the soil would have longer roots. I think this because oak wood contains cellulose and cellulose is part of plant cell walls.

Bad examples: Wood ashes help ivy plants.  
Oak wood ashes are better than elm wood ashes.

**Variables and Controls:**

Independent variable: Amount of oak wood ashes. (You change this.)  
Dependent variable: Length of roots. (You are measuring this.)  
Controls: ALL of the factors that need to be the same for each plant tested.

**Procedure:** This consists of all the steps to the procedure with ALL the details included – this is explained in more detail on the other page about the research plan.

**This section also includes a materials list and a data table (blank for now)**