**The Research Process**

Directions: Use the questions below to design an experiment based on an observation that you make.

What is your observation?

Based on your observation, what is your question?

What kind of background information do you need to look up about your topic before developing your hypothesis and designing your experiment?

What is your hypothesis?

What kind of data will you collect in order to answer this question? Are they qualitative or quantitative?

**Design Your Experiment**

What is your independent variable?

Will you have a control? If so, what will it be?

What are the constants in your experiment?

What is your dependent variable?

How many trials will you do?

Write out a step-by-step procedure explaining exactly how you will conduct your experiment.

How will you analyze your data? Set up a graph that includes what you will label the

x and y axes and the graph title. (It is always a good idea to know how you will graph your data before you begin the actual experiment.)

How do your data and your conclusions connect to current scientific knowledge? What resources will help you design your experiment, evaluate your data, and form your conclusions?

How will you communicate and justify your conclusions to your audience? Are your conclusions logical and supported by the data? Have you explained them in a clear and understandable manner for your audience?