



Physics Honors: Experimental Design

Problem or Question

- ▶ Identify the knowledge gap or reason for conducting research on this topic

Background Information

- ▶ Provide key information from at least five sources indicating why the knowledge gap exists and why there needs to be research on this topic.

Hypothesis or Engineering Design Goal

- ▶ Identify the expected outcome of your investigation or engineered device and what you hope to discover or accomplish.

Independent Variable(s)

- ▶ Identify what you are manipulating and how it can be quantified.

Dependent Variable(s)

- ▶ Identify what you are measuring and how it can be quantified.

Other Variables

- ▶ Identify the other variables that could impact the outcome of the experiment and what value you will hold them constant.

Methods

- ▶ Describe your methods concisely in key bullet points, being specific to what is being manipulated, measured, and recorded.

Materials

- ▶ Identify important materials and equipment necessary to accomplish your methods.

Data Organization

- ▶ Describe how you intend on recording your data (usually a data table or spreadsheet) and how you intend on graphically representing it

