

## Science Fair Report Instructions

<b>Title</b> (prelab)	This should show the reader what your experiment is about. It should be clear and short.
<b>Purpose</b> (prelab)	State the problem or question being explored in a concise way. There may be more than one purpose for a lab; if so, they should be numbered.
<b>Introduction</b>	Write at least one paragraph explaining the problem/question being explored in more detail. Write at least one paragraph giving background information about the most relevant science concepts, topics, and vocabulary. If previously published work on this topic is available, you should discuss it.
<b>Hypothesis</b> (prelab)	Write your initial hypothesis before doing the experiment. You must write one hypothesis for each purpose. (Note: the plural of hypothesis is <i>hypotheses</i> .) After the experiments and analyzing the data, you will write a concise final version of your hypothesis.
<b>Operational Definitions</b> (prelab)	Write the experimental variables and explain how you will measure it/them. List out any dependant variables and explain how you will measure it/them. An experimental variable is the aspect of the experiment you change deliberately, and a dependant variable is an aspect that changes as a result. Most experiments have only one experimental variable.
<b>Controlled Variables</b> (prelab)	List any conditions that will be kept constant throughout the experiment and explain how this will be accomplished. A well-designed experiment leaves only the experimental variable(s) as a possible cause for any change in the dependant variable. Controlling variables helps to eliminate any other possible causes for change in the dependant variable.
<b>Materials</b>	List the tools, equipment, and any other items you need to do the experiment. Include a (prelab) a diagram or diagrams showing the set-up(s) with labels identifying the pieces.
<b>Procedures</b>	Before doing the experiment, list the steps. Number the steps in order. Don't leave anything out! The goal is to write the procedure so that other scientists could do the exact same experiment that you did just by following your procedures. Procedures should be corrected during the lab as needed to show what you actually did. Be sure to explain how to collect your data.
<b>Data/Results</b>	Before experimenting, create data charts to organize the results. While you carry out your experiment, fill in the data tables and take notes on any observations. Collect your data! Data are facts collected. Data are not explanations. Data can be numbers, measurements, or descriptions of anything you noticed while doing the experiment. All measurements must be labeled with the correct units.
<b>Conclusions</b>	Write at least one paragraph about each of the three topics below. <ol style="list-style-type: none"><li>1) Write your revised hypothesis with a succinct explanation for the changes.</li><li>2) A) List the sources of error that may have occurred. Describe the problems you (and your partner, if you had one) had while doing the procedures. B) What could you and your partner have done to have achieved better results?</li><li>3) A) Analyze the data carefully. Do you think the data are sufficient to show the answer? B) State the parts of the data that are significant and explain how the data helped lead you to your findings. C) Support your claims with plenty of detail. Refer to your individual and team data. Refer to graphs when possible. How do the results of other experiments (or published scientific literature) support and/or oppose your findings?</li></ol>