

27.3: Guide for writing a proposal

Summary and Goal

Write a few short sentences briefly summarizing the aim of your experiment, how it will be conducted, and how precise of a result you expect to obtain.

Method and equipment

Clearly describe, in as much detail as required, the method/procedure that you will use to carry out your experiment, and how you will analyze the results. Justify the choices that you made (no need to say you chose to use a ruler because you will need to measure a distance, but perhaps say why you need to measure a given distance, or that you chose to measure something in a particular way as it would reduce the corresponding uncertainty). Provide a list of the equipment that you will need. Also, propose a method of assessing whether or not your project was successful.

Consider the following questions:

- What theory are you testing and through what model?
- How precisely do you estimate that you will be able to make your measurement? Estimate the uncertainty that you will obtain with the proposed experiment. Use this in guiding the design of your experiment.
- What materials, equipment and/or tools are necessary in making your measurements?
- What are the cost of these materials? Can they be easily obtained?
- Where should this experiment be conducted?
- Are there any safety concerns?
- How will you make your measurements? How many times will you make them?
- How will you record your measurements?
- How will you maximize the precision of your experiments?
- How will you determine uncertainties?
- How will you analyze the data?
- What issues could arise in your experiment? How do you plan to resolve these issues?

Timeline and Team

Provide the names of team members, and assign relevant duties to each member. Give a rough outline of the timeline to conduct the experiment, to analyze the data, and to report on the results.

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