

## Suggestions for Typing up a Lab Report for Mr. Abbott's science class

The heading should include your name, period, lab group and date. This should fit on one line and be at the top of the page.

All steps of the scientific method should be a separate section. These steps should be in bold font and underlined with a colon at the end. Include the following sections (Problem, Hypothesis, Materials, Procedure, Observations/Data, Conclusion)

**Problem:** This should be stated in the form of a question. Start with a capital letter and end with a question mark.

Example: What is the effect of changing the mass of the Bob on the period of a pendulum?

**Hypothesis:** This should be a definite statement about what you think will happen in the statement. You want to describe how changing the independent variable will alter the dependent variable. You can also give a reason for your statement. A hypothesis can be stated as an "If ..... Then ..... Because ....." sentence.

Example: **If** I increase the length of the string of a pendulum **then** the period of the pendulum should get longer **because** the pendulum will swing through a longer distance.

**Materials:** This should be a bulleted list or a checklist. It is nice to have this section in 2 or 3 columns so it doesn't take up too much space. You may even include a diagram or photograph showing the materials

Example:

- Ring Stand
- String
- Paper Clip
- Protractor
- Fun Tack
- Washers for Bob
- Stopwatch
- Digital Balance

**Procedure:** This section should be a numbered list. You need to include enough specific directions that another person could repeat your experiment by following directions. Be sure to describe how and when you are going to change the independent variable. Include when you measure the dependent variable. Frequently you may describe repeating specific steps over again ("repeat steps 7 – 10 with the 6 washers on the paperclip").

**Observations/Data:** This section should show the results of the data collected during the procedure. You will typically organize your results in the form of a data table. The easiest way to create a data table is to insert a chart into your document. This is easy to do with Microsoft Word or in Google docs. You need to figure out the number of columns and rows for your table before you insert it into your document. Another way to create a table is using a spreadsheet like Microsoft Excel. Once you have set up the table in Excel you can copy and paste it directly into your Word document. The advantage of using a spreadsheet like Excel is that you can also create graphs to display the data. You might even include a photograph of what you observed at the end of your procedure.

Example:

**Observations/Data:**

Number of Washers	Mass (grams)	Time for 10 Oscillations (sec)				Period (sec) Time for one Oscillation
		Trial 1 (sec)	Trial 2 (sec)	Trial 3 (sec)	Average Time	
3	5.1	11.47	11.92	11.63	11.67	1.17
6	10.2	11.57	11.76	11.94	11.76	1.18
9	15.3	11.23	12.36	11.32	11.64	1.16

Length of String is Constant      19.4 cm      Displacement Angle is Constant      45 °

**Conclusion:** This section should discuss if your recorded observations supported the hypothesis you made. You need to use specific data from your observations to support your conclusion. If your data does not support the hypothesis then you may propose other suggested problems to investigate.

Example: The hypothesis was incorrect. Increasing the mass of the pendulum bob did not significantly change the period of the pendulum. When the mass increased from 5.1 grams to 15.3 grams the period of the pendulum changed from 1.17 seconds to 1.16 seconds. All of the measure periods were close enough that the difference is probably errors in the timing of the pendulum. Instead of the mass of the pendulum other factors like the displacement angle or the length of the string might alter the period of a pendulum.

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