Lab #1 – Tools of the trade: spreadsheets and typesetting (SAMPLE)

**Problem #1 heading is here**

Equations have numbers for easy reference

1. This is the answer to question #1(a). There is **no need to retype** the question text; rather, just follow the numbering in the post-lab assignment. This question needs to reference equation 1:

$$\begin{array}{c}2 H2(g) + O2(g) ⟶ 2 H2O(g) \#\left(1\right)\end{array}$$

Notice that the margins on this document are not 1.5” all-around; there is no need to waste so much space on the page. My answer also includes a calculation, so it is included here too:

Sample calculations are complete and well-formatted, but not numbered like equations

$$n\_{H2O}=\left(0.036 g\right)\left(\frac{1 mol}{18.016 g}\right)=0.002 mol=2.0 × 10^{-3} mol$$

Turn on the “Ruler” (under “View”) if you haven’t already done so. This makes formatting much easier.

**Problem #2**

The exact formatting details of your documents (margins, font sizes, bold/italics/underline, etc.) are up to you. The only formatting details that are not flexible are those of exhibits: equations, calculations, figures, and tables. For those, it is important to follow the proper *chemistry* practices.[[1]](#footnote-1) The formatting guidelines in this course agree with those in chemistry, biology, and biochemistry. Here’s a figure:

Exhibits are not screenshots. Copy graphs to Word and add a good caption.

In “Shape Format”, set the figure to *Wrap Text* Top and Bottom. This will position the figure between paragraphs nicely.

Note: caption fonts are smaller than the normal text font so that it can be distinguished from paragraph text around it.

**Figure 1:** plot of absorbance (at 650 nm) vs temperature (in oC) for a series of really weird things, showing a very good linear fit (R2 > 0.99). Place these captions in **Text Box**es so that they can be grouped with the figure and moved easily. Ideally, reading the caption is the only thing that is necessary to understand the figure, which is why they are long and very detailed.

Since there is more to this problem than just the trend between temperature and visible-light absorbance at 650 nm (Figure 1), the problem continues here below the figure (notice the difference between caption-size text and this text).

Finally, we have a table for no other reason than giving a good template for how a table looks in a good, scientific paper.

Just like figures, tables are also not screenshots from Excel. Copy relevant data to tables in Word. Tables have titles.

Note: title fonts are smaller than the normal text font.

Again, text boxes are your friend (for titles)

|  |  |  |
| --- | --- | --- |
| **Time****(min)** | **Absorbance****(λ = 650 nm)** | **[4-NO2-phenolate](μM)** |
| 0 | 0.0723 | 25.10 |
| 10 | 0.1123 | 38.99 |
| 20 | 0.1501 | 52.11 |
| 30 | 0.2098 | 72.84 |
| 40 | 0.2475 | 85.92 |
| 50 | 0.3031 | 105.23 |

**Table 1:** Table titles are short and descriptive of the type of data in the table

Also, it is important that you always refer to exhibits – both tables and figures – in the text of your work. It isn’t enough to just include data, but they must be discussed (Table 1).

Once you are done with your post-lab assignment, save the document and then also prepare a PDF from the file. Uploading .docx files (the native Microsoft Word file) will lead to major structural changes to the paper you submit when using Blackboard or Turnitin. Instead, always make a PDF (both Mac and PC versions of Word can do this) for your submission (PDF is fundamentally a graphics file, so the final version will look the same on all computers and the internet).

1. Other disciplines like biology, biochemistry, geology, etc., follow very similar practices. To get a sense for what is expected in any given field you should look at the ***scientific journals***(available to look at online with BU credentials) for those fields. [↑](#footnote-ref-1)