

## Formal Lab Report Format- PreAP Biology

### Format:

[5 points]

- ◆ Must be typed, using word or appropriate word processing software
- ◆ 12 point only, using Times or Arial.
- ◆ Heading can be 14 point and bold
- ◆ Sections are sequential (in order), with 12 point spacing between sections
- ◆ Graphs and Tables must be incorporated into the word document (paste or paste special)

### --PreLab--

### TitlePage/Cover sheet:

[5 points]

- ◆ Title of the experiment, your name, start and end date of the experiment, class, period, and names of persons performing the experiment in your group.

### **I. Framing the Investigation:**

#### Background:

[15 points]

- ◆ A written description of related scientific information or observations.
- ◆ What the reader needs to know to understand why this investigation was done.
- ◆ This information can be gathered from class notes, class discussions, lab sheet, or research (requires referencing).
- ◆ 18-22 sentences (~230 words)

#### Purpose/Objective:

[10 points]

- ◆ A purpose is a clear and concise statement of the reason for doing the experiment.
- ◆ State the problem or question that is being studied as it relates to biological principles or concepts being tested during this laboratory investigation.
- ◆ The nature of the lab...the real world connection!
- ◆ Introduction to experimental design, independent and dependent variables discussed
- ◆ 5-8 sentences (~ 100 words)

#### Hypothesis: [When appropriate]

[5 points]

- ◆ For many experiments it will be appropriate for you to form a hypothesis before conducting the procedures (after you have thoroughly read the lab).
- ◆ A hypothesis is an educated answer to the question or problem before performing the experiment. It must follow the **If, Then** format.  
Ex: **If** leaf color change is related to temperature , **then** exposing plants to low temperatures will result in changes in leaf color.
- ◆ 1 sentences (~20 words)

### **II. Designing the Investigation: [15 points]**

#### Materials:

[5 points]

- ◆ A concise list of all materials, equipment, solutions, or organisms to be used.
- ◆ Make a note of any special procedures handling or disposal of materials, such as biological hazards.

#### Procedures:

[10 points]

- ◆ Include a complete/detailed list of all materials and equipment used.
- ◆ Your procedure is a record of the steps you performed in the experiment.
- ◆ DO NOT COPY ENTIRE PROCEDURES from lab.
- ◆ Think of this as a recipe with when to do a step, how to do the step, amount used, and what equipment/supplies used for each step.

## --Post Lab--

### III. Collecting and Presenting Data:

[15 points]

#### Results:

- ◆ All qualitative and quantitative data must be organized in a data table.
- ◆ Always use units, metric whenever possible, for your measurements.
- ◆ Use significant figures when appropriate.
- ◆ When your experiment involves calculations, show how you carried out the calculations for a representative sample. Show your work!
- ◆ If appropriate, construct a graph to represent your data. Be sure to properly label the x, y axes of graph, including units (cm, % Transmittance).
- ◆ All tables and graphs should be labeled/titled. *Ex:* Table 1: Graph displays the height of radish plants, which were supplemented with various nutrients for a period of 2 weeks.

### IV. Analyzing and Interpreting Results:

[30 points]

Conclusion: Your summary should include a discussion, in paragraph form, of the following issues:

- ◆ Answer the assigned questions in complete sentences. [When appropriate]
- ◆ What was the problem or question (purpose) being studied? If you stated a hypothesis earlier in your report, how do you know that your hypothesis is correct or incorrect?
- ◆ You must support your conclusion or hypothesis by restating, and supporting with actual data and/or observations collected in the experiment.
- ◆ This is interpretation of data, explaining the significance of your results.
- ◆ *Experimental Error:* Explain at least 3 factors that could have caused your results to be inaccurate or to vary.
- ◆ *What next?:* What questions do you have after performing the experiment? What questions need to be answered to continue learning more about the problem studied? What important factors might have affected your results or influenced the data collected.
- ◆ 25-30 sentences (~ 300 words)