

## LAB REPORT FORMAT

The following provides the appropriate format for writing a lab report. It is important for you to label each section (Title, Purpose/Question, etc.) as shown below, and to consider the descriptive information provided when composing each section. Additionally, since lab reports are formal documents, avoid the use of personal pronouns.

### Title:

- Provide a title that is a description of your lab followed by a lab number.
- The title should clearly identify the experiment's variables (independent & dependent)

### Purpose/Question:

- This is the place to explain what you are trying to find out or what you are going to do in the lab.
- Include information about the variables involved.

### Hypothesis: "If.....then.....because....."

- This is a cause/effect statement related to the purpose/problem of the lab.
- "If" portion sets up the basic experimental design
- "then" portion includes a prediction of what the expected outcome will be.
- "because" portion focuses on the information/research you collected.

### Materials:

- List all items in a column.
- Make sure to record the exact size and amount of each item required.

### Procedures:

- List and number each step.
- Use complete sentences (begin with a capital letter and use end punctuation).
- Should be clear enough for someone else to use as instructions for repeating your experiment.

### Observations/Data:

- Be sure to accurately record your observations/data in a chart or table.
- Create a graph to provide a visual of your data.
- Provide a verbal description of your data.
- List all quantitative (numbers) and qualitative (words) data.
- List all variables and explain what your control was.

### Conclusion: "When.....then....."

- Consider the following:
  - What you did in the experiment
  - What you observed (patterns or trends)
  - Whether the data supported your hypothesis
  - If you think it was a fair test (i.e. - was there anything that may have impacted the accuracy of your results)
  - Possible improvements that can be made if the experiment was conducted again
  - What you learned from the lab
  - Questions for further research and investigation
  - Application: Can you think of an analogous situation that applies to real life?

## SAMPLE LAB REPORT

**Title:** The Effects of Increased Activity on a Person's Heart Rate - Lab #1

**Purpose/Problem:** To understand what happens to a person's heart rate as they increase their activity level.

**Hypothesis:** If a person increases his or her activity level, then their heart rate will increase due to the body's cells increased need for oxygen.

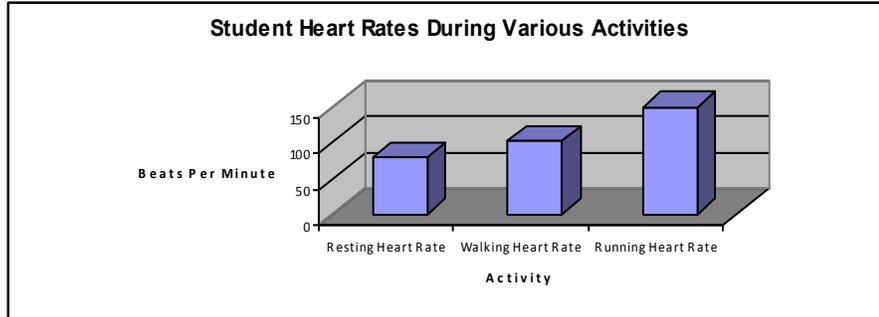
**Materials:** Partners  
Stopwatch  
Writing Utensil

**Procedures:**

1. Find your heart rate by placing two fingers on your wrist.
2. Count each thump as one beat.
3. Sit in your chair. Have your partner time you for 60 seconds as you count the number of beats. This represents how much your heart beats in one minute while you are resting. Record this number in your data table.
4. Stand up. Have your partner time you for one minute as you walk around the class. At the end of one minute, continue to walk in place as you take your heart rate for 60 seconds. Record this number in your data table.
5. Repeat step number four while this time running in place instead of walking. Record this number in your data table.
6. Repeat steps one through five with all members of the group and record all data.
7. Find the average heart rate for each category and record it in the data table.

**Observations/Data:**

Student	Resting Heart Rate	Walking Heart Rate	Running Heart Rate
John	75 bpm	100 bpm	140 bpm
Tim	85 bpm	105 bpm	160 bpm
Average	80 bpm	102.5 bpm	150 bpm



The average resting heart rate was 80 beats per minute. When activity levels increased due to walking, the average heart rate rose by 22.5 beats to 102.5 beats per minute. Finally, when running, the average heart rate increased by 47.5 beats to 150 beats per minute. This increase in activity level represented the independent variable while the increase in heart rates was the dependent variable. There seemed to be a relationship between the two as we compared the walking and running activity levels to the resting heart rate which represented the control.

**Conclusion:** In this experiment, test subjects performed various activities (walking and running) to determine if an increase in activity level would impact one's heart rate. The resting heart rate, which was taken after sitting, acted as the baseline for comparison (also called the control) since sitting in the chair did not really require an increase in activity level. Both walking and running in place caused an increase in heart rate. The data illustrates how the activities and their energy requirements are very closely related. As the activity level increases, there is a trend that shows an increase in heart rate. Resting heart rate was at 80 beats per minute. When increasing the activity level by walking, the heart rates also increased to 102.5 beats per minute. As the activity level increased even more by running, the heart rates did the same by rising up to 150 beats per minute. This lab was a fair test since the only variable changed throughout was the activity level, however, the limited number of test subjects, or repeated trials, could have impacted the accuracy of the data. Additionally, there was some possibility of human error related to the accuracy of measuring one's own heart rate. Otherwise, the results seem to be conclusive and they support the experiment's hypothesis and the idea of a person's heart rate increasing with an increase in activity. This is illustrated every day when people perform activities such as running or exercising where they may notice a significant increase in their heart rates after they are done when compared to before they started.