

LAB REPORT FORMAT

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.
- This is a prediction of what the expected outcome of the lab will be.
- Relate the hypothesis to the purpose/problem of the lab.
- Try to focus your hypothesis 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....."

- Match your conclusion to the purpose or the problem.
- Base your conclusion on your analysis of your observations and any data that has been collected.

Explain: (The following are just suggestions and DO require elaboration.)

- What you did in the experiment
- **What you observed (trends/patterns in your data that supported or did not support your hypothesis)**
- What you learned from the lab
- If you think it was a fair test (i.e. - was there anything that may have impacted the accuracy of your results)
- Questions for further research and investigation
- Application: Can you think of an analogous situation that applies to real life?

All sections (Title, Purpose, Hypothesis, etc...) should be labeled as shown above.

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.

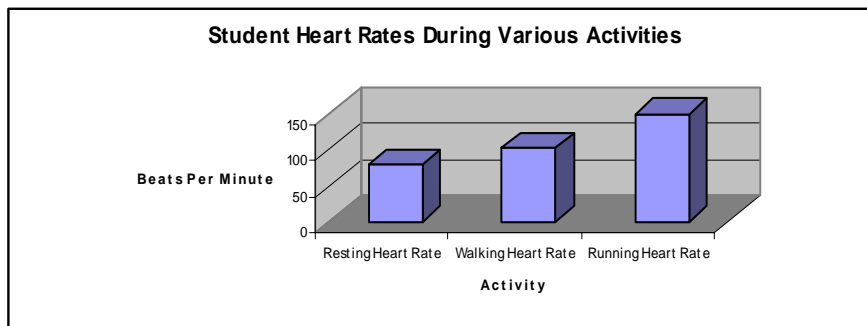
Materials:
Partners
Stopwatch
Writing Utensil

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, various activities were performed that caused heart rates to increase. The activities that actually caused an increase in heart rate were walking around the classroom and running in place. The resting heart rate which was taken after sitting acted as the baseline for comparison (also called our control) since sitting in the chairs did not really require an increase in activity level. 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. There was some possibility of human error related to the accuracy of measuring one's own heart rate, however the results seem to be very conclusive and they support 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.