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BIO-103-W2

“Artifact for Integrative Reflection.”

This DNA lab assignment is the project I am most proud of this semester because it applies practical hands-on experimentation of theory in a way that is both fun and educational. In this lab, I conducted a DNA extraction experiment using strawberries and explored the concept of blood typing. The DNA extraction process involved several detailed steps like crushing strawberries to break their cells, adding a mixture of dish detergent and salt to release the DNA from the cell membranes, and using cold rubbing alcohol to precipitate the DNA, which ended up causing it to clump together and become visible. Seeing the DNA, which is usually invisible to the naked eye, made the principles of cell biology and genetics come to life.

The lab also included a virtual simulation for blood typing, where I determined the blood types of different donors and a patient. This part of the experiment highlighted the practical applications of genetics, particularly in understanding the relationship between antigens and antibodies and the importance of compatibility in blood transfusions. Learning about both DNA extraction and blood typing gave me more understanding of genetic principles which made the lab both fascinating and educational.

I selected this lab assignment because the process of extracting DNA and the virtual blood typing simulation was informative and provided a deeper understanding of the concepts studied in class. This assignment stands out because it required reflection on each step of the DNA extraction process, understanding the biochemical reactions involved, and reflecting on the implications of blood typing in terms of antigens and antibodies and the immune response.

This lab assignment also encouraged the use of multiple perspectives. For example, understanding the physical process of DNA extraction and the biochemical reactions involved, and in blood typing, considering both the donor and recipient perspectives to determine compatibility. The lab was a practical application of classroom knowledge and allowed me to use theoretical concepts right in my own kitchen. It required hypothesizing outcomes, analyzing results, and applying critical thinking skills to interpret the findings.

One of the most enjoyable aspects of this lab was the ability to perform it at home, which made it both fun and accessible. My daughter was curious at times, especially about why I was mashing fruit, and it was cool to explain the process to my girlfriend. It was incredibly satisfying to extract the DNA and see it with my own eyes, knowing that I could potentially use this skill to extract DNA from other sources as well. I even wished I had a microscope to look at the strawberry DNA up close, as it would have added another layer of excitement and learning to the experiment.

In conclusion I liked this lab, and it was the highlight of the semester because it was a unique opportunity to see the blueprint of life in action. It also helped me to understand the critical importance of blood compatibility with concepts like that O negative being the universal donor.