

Biochemistry Segue

Student Instructions

Introduction: Students will learn about biochemistry in their everyday lives by evaluating the stimulatory properties of caffeine and chocolate. Students will be asked to bring samples of chocolate and/or caffeine to class. As an experiment students will measure their heart rates before and after consumption of their samples and see if it differs. As a follow-up to lab, students will be asked to pick one culture and research that culture's point of view on consumption of caffeine and/or chocolate.

Before Class: Please bring at least one food or beverage sample that contains caffeine and/or chocolate. The food or beverage should be something that you have consumed in the past (e.g., don't use this class to try something new). It is very important to avoid eating or drinking anything with caffeine or chocolate in it for several hours before coming to class (preferably for a full day). Also, if you have one bring a stop watch or other timing device that can measure minutes and seconds.

During class: The instructor will begin lab with a brief discussion on biochemistry, and how it relates to beverages and foods containing caffeine and chocolate.

1. The instructor will group students by what kind of foods and/or beverage are available. As an example, there could be caffeine vs. chocolate groups or beverage vs. food groups.
2. Participating students will use a stopwatch to determine their heart rate (beats per minute) then consume their caffeine/chocolate sample.
3. You will be asked to measure your heart rate about every 3 minutes. After about 15 minutes the class will compare their results to see which food or beverage yielded the greatest difference.
4. While the time is passing the instructor will lead a discussion on the physiological effects of caffeine and chocolate and how different cultures view these plant-based stimulants.

Follow-up: For the next week choose one culture and learn how that culture views caffeine and/or chocolate consumption. Theorize about how this viewpoint developed. Be prepared to discuss in class next week what your thoughts are.