



EXPLORING FOOD SCIENCE, SAFETY, + NUTRITION

How energy drinks can affect you and your body...

Grade Levels: Grades 6-8

Content Areas

Chemistry; Physical Science

Disciplinary Core Ideas

Structure and Function

Crosscutting Concepts

Cause and Effect

Learning Objectives/Outcomes

- Students will compare different caffeine levels of beverages and observe differences.
- Students will observe and learn about the overarching chemical use of caffeine in the body and the effects on physical and mental health.
- Students will have a general understanding of the main ingredients in energy drinks and what their general purpose are.
- Students will understand an overview of how caffeine can affect mental and physical health.
- Students will understand that consumption of energy drinks in moderation is important to consider.

Introduction

History of energy drinks, what energy drinks do to your body, additives in energy drinks, how much caffeine is in popular energy drinks compared to coffee, tea, etc.

Keep in mind that your audience may know very little about food science.

Instructions For Teachers

Groups of 4-5 Students.

Materials

- Computer/projector for powerpoint presentation.
- For research activity, students need an internet enabled device.
- M&ms/dried beans/dried pasta/some sort of countable object.
- Plastic cups.
- Empty cans of example drinks.
 - One empty container of coffee/tea/energy drink.

If in the classroom:

Go through powerpoint that addresses the intro and background on the topic of energy drinks.

Have students fill out the research activity worksheet then discuss their answers in small groups for 5-10 minutes.

Hands on activity can be done in groups with one set of materials for each group allowing time for groups to discuss their immediate thoughts and observations.

Encourage participation and discussion by bouncing between groups and questioning observations and thoughts.

If students are at home, the worksheet can still be done on their own and discussion can happen over zoom or with family, otherwise, discussion is not necessary. Hands on activity can be done with things found around the house and by themselves or with a family member.

1. Fill one cup with beans with the equivalent amount of caffeine in one serving of green tea (one bean= 1 mg caffeine)
2. Fill one cup with beans with the equivalent amount of caffeine in one serving of coffee (one bean= 1 mg caffeine)
3. Fill one cup with beans with the equivalent amount of caffeine in one serving of Coke (one bean= 1 mg caffeine)
4. Fill one cup with beans with the equivalent amount of caffeine in one serving of Redbull (one bean= 1 mg caffeine)
5. Fill one cup with beans with the equivalent amount of caffeine in one serving of Bang Energy (one bean= 1 mg caffeine)

***you may have questions grouped based on their technical level, as in the Sample Lesson Plan. (if applicable) sample answers to student worksheet has no "correct" answers.*

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Energy Drink Worksheet

Name: _____

Date: _____

Research Activity:

1. Choose an energy that is either your favorite, one you may have heard of, or google one to pick.

Energy Drink: _____

2. Find the nutritional facts panel for the drink you chose and write the ingredients in the box below using an internet enabled device.

3. Highlight the ingredients that contribute to caffeine. (Make sure to look up ingredients you do not know)
4. Compare with your neighbors the energy drinks you chose.

Group Activity:

5. From the lecture fill out the following information

	Green Tea	Coffee	Coca Cola	Redbull	Bang Energy
Caffeine (mg)					



6. How many milligrams of caffeine does the energy drink you picked have? How does this compare to the examples above?

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Energy Drink Worksheet

Hands On Activity:

(counting item can be m&ms/dried beans/dried pasta/some sort of countable object)

1. Fill one cup with beans with the equivalent amount of caffeine in one serving of green tea (Counting item= 1 mg caffeine)
2. Fill one cup with beans with the equivalent amount of caffeine in one serving of coffee (Counting item = 1 mg caffeine)
3. Fill one cup with beans with the equivalent amount of caffeine in one serving of Coke (Counting item = 1 mg caffeine)
4. Fill one cup with beans with the equivalent amount of caffeine in one serving of Redbull (Counting item = 1 mg caffeine)
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