

Performance Event Practice #1

Some companies that make energy drinks claim that their products can temporarily increase a person's mental concentration and physical stamina. Between 2000 and 2005, sales of energy drinks worldwide grew by more than 700%. Over 1,000 brands of energy drinks are sold in the United States alone. The drink makers often market their products to teenagers and young adults.

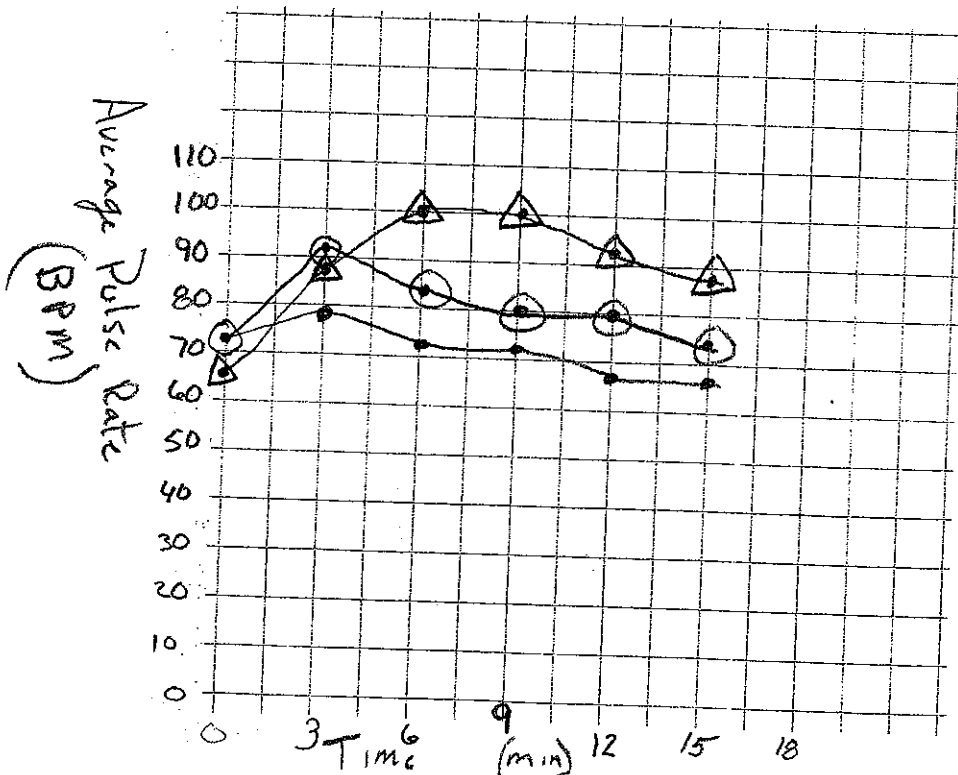
Two high-school biology students decided to test the claims of the energy drink makers. They chose two energy drinks and labeled them Drink A and Drink B. They asked 20 of their fellow biology students to participate in a set of trials to determine how the energy drinks affected pulse rate, mental concentration, and physical stamina. The experiment took place over three weeks.

Step 1: During Week 1, the students examined how an energy drink affects a person's pulse rate. On Day 1, each subject drank a can of Drink A and measured changes in his or her own pulse rate. On Day 2, each subject repeated the procedure with Drink B. On Day 3, each subject repeated the procedure with a glass of water. The table below displays the results.

Average Pulse Rate (beats per minute)

Drink	0 Minutes	3 Minutes	6 Minutes	9 Minutes	12 Minutes	15 Minutes
A	72	92	84	80	80	76
B	68	88	100	100	92	88
Water	72	76	72	72	68	68

Make a line graph of the pulse rate data. Title the graph, label and number the x - and y -axes, and provide a key to distinguish between the lines for Drink A, Drink B, and water.



The effect of energy drinks
- on pulse rate

Type of Drink	
KEY	
Drink A	○
Drink B	△
Water	●

Directions: Work through the steps of experimental design below.

Testable Question: 1pt How does energy drinks effect pulse rate?

Independent Variable: 1pt

Energy Drinks

Dependent Variable: 1pt

Pulse rate

Hypothesis: 1pt

IF energy drinks are used, then the pulse rate will be increased.

Control Group: 1pt

- water/No energy drink

Name at least 3 Constants: 3pts

amount of Drink, Food in diet, activity, Temp

Materials: 2pts

Tools - measure volume
- measure pulse rate
- measure time

Procedures: 5pts

(How are you going to test your IV? How often and with what are you going to measure your DV? How are you going to keep your experiment valid? Be detailed, specific, and number your steps).

Attach NB paper if needed!

constants

① How will you change IV?

② How will you measure DV?

③ How will you keep things constant?

Procedures: 5pts

(How are you going to test your IV? How often and with what are you going to measure your DV? How are you going to keep your experiment valid? Be detailed, specific, and number your steps).

P.F. Practice # 2

Name: _____
Hour: _____/15pts

Unit 1 Test Performance Event

Prompt 3:

I would like you to design an experiment to see if adding red food coloring to the water of mice will cause their weight to change. Below is the data table that you could use.

Color of Water	Weight of mice over 3 weeks		
	Week 1	Week 2	Week 3
Red			
Clear			

Directions: Work through the steps of experimental design below.

Testable Question: 1pt

How does color of water affect the weight of mice?
color of water

Independent Variable: 1pt

Dependent Variable: 1pt

wt of mice

Hypothesis: 1pt

If the color of water is red, then the mice will loose more weight.

Control Group: 1pt

Clear watered mice

Name at least 3 Constants: 3pts

type of mice, Food, age of mice, temp of water

Materials: 2pts

- Measuring tools - volume, weight
- mice, cages, etc...

Procedure should (3pts)

- ① How will you change IV?
- ② How will you measure DV?
- ③ How will you keep things constant?