

name: _____ per _____ dates _____

Mythbusters: Diet Coke & Mentos

As you watch the video, use your knowledge of the scientific method and experimental design to answer the questions and fill in the blanks.

- 1) What happens when you drop Mentos into a 2L bottle of Diet Coke?

- 2) The Mythbusters are testing to see **why** this occurs. Hypothesis #1: The geyser occurs because _____ is released from the Diet Coke.

Experiment 1: IS CARBON DIOXIDE (CO₂) GAS ESSENTIAL FOR THE SODA TO ERUPT?

Hypothesis: If a 2L bottle must have CO₂ gas for the soda to erupt to, and we remove the CO₂ gas from the 2L bottle, then soda without CO₂ gas will _____

- 3) Did results match prediction? _____
4) In Experiment 1, the Independent Variable is _____
5) In Experiment 1, the Dependent Variable is _____

Experiment 2: IS ANYTHING ELSE CAUSING THE ERUPTION?

Hypothesis: If the geyser occurs only because of the CO₂ gas in the 2L bottle, and we compare 2L of Diet Coke to 2L of soda water (contains only H₂O & CO₂ gas) then both bottles should _____

- 6) In Experiment 2, the independent variable is _____
7) In Experiment 2, the dependent variable is _____
8) Did results match prediction? _____ Describe the results:

CONCLUSION: There must be something else in the soda that adds to the geyser reaction

Experiment 3: IS ANY OTHER COKE INGREDIENT INCREASING THE HEIGHT OF THE GEYSER?

- 13) In Experiment 3, the independent variables are _____
14) In Experiment 3, the dependent variable is _____
15) In Experiment 3, the control group is _____
16) Results:

Ingredient in Diet Cole	Higher or lower eruption than soda water?
aspartame (NutriSweet™)	
citric acid	
phosphoric acid	
potassium benzoate	
caffeine	