Lesson: Fizz Frenzy: Mentos and Diet Coke	Name:
Teacher:	Date:

Lesson Focus: Understanding gas release, physical reactions, and the effect of surface area using the Mentos and Diet Coke experiment.

Part A: Predict & Hypothesize

1. Predict what will happen when Mentos are dropped into Diet Coke:

2. Why do you think the soda erupts so quickly?

Part B: Observation

Watch the Mentos and Diet Coke experiment and answer:

1. How tall did the soda fountain reach?

2. How fast did the reaction occur after dropping Mentos?

3. Describe the foam that formed (small bubbles, large bubbles, or a mix):

Part C: Understanding Science

1. What gas is released from Diet Coke when Mentos are added?

2. What role do Mentos play in this reaction?

3. How does the surface area of Mentos affect the reaction?

4. Why is this a physical reaction and not a chemical reaction?

5. What might happen if warm soda were used instead of cold soda?

Part D: Real-World Connections

1. Can you think of any everyday examples where gas is released from liquids?

2. How could understanding surface area and gas release help engineers or scientists in real life?

Part C: Understanding the Science

1. What gas is released from Diet Coke when Mentos are added?

   Answer: Carbon dioxide (CO_2).

   Explanation: Diet Coke contains CO_2 gas dissolved under pressure. When Mentos are added, the CO_2 escapes rapidly from the liquid, forming bubbles and foam.
2. What role do Mentos play in this reaction?

   Answer: Mentos act as nucleation sites for CO_2 bubbles to form quickly.

   Explanation: The surface of Mentos is rough and full of tiny pits. These imperfections allow CO_2 bubbles to form rapidly, which leads to the explosive release of gas and the soda fountain effect.
3. How does the surface area of Mentos affect the reaction?

   Answer: More surface area allows more CO_2 bubbles to form, causing a faster and bigger reaction.

   Explanation: The rough texture increases the number of nucleation sites, so gas escapes more quickly. A larger or more porous surface would produce an even more dramatic eruption.
4. Why is this a physical reaction and not a chemical reaction?

   Answer: No new substances are created; CO_2 gas is simply released from the liquid.

   Explanation: In a chemical reaction, new substances with different chemical properties are formed. Here, the soda remains chemically the same; only the physical state of the CO_2 changes from dissolved to gas.
5. What might happen if warm soda were used instead of cold soda?

   Answer: The reaction would be stronger and faster.

   Explanation: Warm liquids allow gases to escape more easily because the molecules are moving faster. CO_2 is less soluble in warm soda, so more gas comes out quickly, creating a higher fountain.