Objective

The objective of this lesson is to learn about the chemical reaction that occurs when Mentos candy is dropped into a carbonated beverage, causing a volcano-like eruption.

Materials and Prep

- Mentos candy (preferably the mint flavor)
- A 2-liter bottle of diet soda (preferably cola)
- A safe outdoor space or a large basin to contain the eruption
- Protective eyewear and gloves
- Knowledge of the scientific principles behind the eruption (explained in the talking points)

Activities

- 1. Set up the experiment area in a safe and open space, away from any valuable items or people.
- 2. Put on the protective eyewear and gloves to ensure safety.
- 3. Open the bottle of diet soda and place it in the designated eruption area.
- 4. Unwrap the Mentos candies and drop them into the soda bottle all at once.
- 5. Observe and record the eruption height, duration, and any other interesting observations.
- 6. Repeat the experiment with different variables, such as using regular soda instead of diet soda or changing the number of Mentos used, and compare the results.

Talking Points

- "The eruption is caused by a chemical reaction between the carbon dioxide gas in the soda and the rough surface of the Mentos candy."
- "When the Mentos candy is dropped into the soda, it acts as a nucleation site, providing a surface for the carbon dioxide bubbles to form rapidly."
- "The rough surface of the Mentos candy is covered in tiny pits and bumps, which increase the surface area available for carbon dioxide bubbles to form."
- "The carbon dioxide bubbles quickly form and expand, leading to a rapid release of gas, causing the eruption."

- "Diet soda is preferred for this experiment because it contains artificial sweeteners, such as aspartame, which can further enhance the reaction."
- "The eruption height and duration can vary based on factors such as the number of Mentos used, the type of soda, and the temperature of the soda."