

Objective

By the end of this lesson, you will understand the chemistry behind chocolate and how it is made.

Materials and Prep

- Cocoa beans (can be purchased online or from a local store)
- Grinder or mortar and pestle
- Hot water
- Strainer
- Cocoa powder
- Sugar
- Milk
- Stove or microwave
- Saucepan or microwave-safe bowl
- Spoon
- Optional: flavorings such as vanilla extract or cinnamon

Before starting the lesson, make sure you have an understanding of the basic concepts of atoms, molecules, and chemical reactions.

Activities

1. Start by exploring cocoa beans. Examine their texture, smell, and taste. Discuss what you observe.
2. Grind the cocoa beans using a grinder or mortar and pestle until they become a fine powder. This will be your cocoa powder.
3. Heat a small amount of water in a saucepan or microwave-safe bowl. Add a spoonful of cocoa powder and stir until it dissolves.
4. Add sugar and milk to the cocoa mixture. Adjust the quantities to taste. Heat the mixture on the stove or in the microwave until it is hot, but not boiling.
5. Optional: Add flavorings such as vanilla extract or cinnamon to enhance the taste of the hot chocolate.
6. Strain the hot chocolate to remove any lumps or solid particles. Serve and enjoy!

Eighth Grade Talking Points

- "Chocolate is made from cocoa beans, which are the seeds of the cocoa tree."
- "Cocoa beans contain chemicals called flavonoids, which have antioxidant properties."
- "When cocoa beans are ground, they release cocoa powder, which is the key ingredient in chocolate."
- "Sugar and milk are added to cocoa powder to make hot chocolate."
- "Heating the mixture helps the cocoa powder dissolve and allows the flavors to blend together."

- "Straining the hot chocolate removes any solid particles and ensures a smooth texture."