

78. Christmas Chemistry

Classroom Activity - Show how materials go through stages and can transform.

Grade: 7

Strand(s) - Understanding Matter and Energy

This task addresses the following overall expectations:

- investigate the properties and applications of pure substances and mixtures;
- demonstrate an understanding of the properties of pure substances and mixtures, and describe these characteristics using the particle theory.

and the following specific expectations:

- follow established safety procedures for handling chemicals and apparatus;
- distinguish between pure substances and mixtures

Assessment Categories

- Knowledge and Understanding

Type of Activity

Classroom/Science Lab

Preparation

- 1 hour
- May need to do a test run of the experiment to iron out the details when coming into the classroom

Materials

Reagents:

- Sucrose (Table Sugar)
- Concentrated Liquid Sucrose (Corn Syrup)
- Potassium Tartrate (Cream of Tartar)
- Lactose (Milk)
- Food Colouring
- Peppermint Extract

Labware:

- 250 ml Beaker (or saucepan)
- Candy Thermometer or other metal-backed thermometer
- Aluminium Foil
- Assorted labware (or spoons for stirring)
- Your Smiles :)

Activity Description

- 1.) Measure and mix the following chemicals in a 250 ml beaker (or saucepan):
- 2.) 1/4 cup or 2 tablespoons of sucrose (or sugar)
- 3.) 8 ml (1.5 teaspoons) of lactose (or milk)
- 4.) 10 ml (2 teaspoons) of concentrated liquid sucrose (corn syrup)
- 5.) 1/4 teaspoons of Potassium Tartrate (or Cream of Tartar)
- 6.) Heat the mixture until its temperature reaches 200°F or 93°C. Cover the beaker with the foil and remove it from the heat for 2 minutes.
- 7.) Return the mixture to the heat. Heat and stir until the temperature reaches 240°F or 115°C.
- 8.) Remove the mixture from the heat and add a couple of drops of peppermint extract and 1-2 drops of food colouring.
- 9.) Stir until the mixture is smooth, but not any longer than that or else the candy could harden in the beaker. Avoid stirring longer than 15-20 seconds.
- 10.) Pour coin-size drops of the mixture onto a sheet of foil. Depending on the size of the drops, you will get 8-12 of them.
- 11.) Allow the candy to cool, and then peel the drops off to enjoy your treat!