

Flotation

[Return To Middle School Lesson Plans](#)

Title: Flotation

Level: Middle School

Time: 60 minutes

KERA Goals: 2.3; 2.35

Objective:

Learn that one of the ways the mining companies extract coal is through the flotation method where air bubbles float coal particles to the top of a solution. The coal is scooped off and separated.

Activity: Popcorn Poppin' And Raisin Raisin'

Give each student a glass of soda water. Place popcorn seeds or raisins in each glass. Have students observe and describe the action of the bubbles on the popcorn or raisins.

Activity: Stained Glass Cookies

Sour ball candies melt to form the "glass" in the cookies.

Bake at 350 degrees for 10 minutes. Makes about 5 dozen.

- 5 cups all purpose flour
- 1 teaspoon baking powder
- 1 teaspoon salt
- 1 cup (2 sticks) butter or margarine
- 2 cups sugar
- 2 eggs
- 2 tablespoons vanilla
- 1 teaspoon lemon extract
- 1 pound assorted sour ball candies

1. Sift flour, baking powder, and salt onto wax paper.
2. Beat butter or margarine and sugar until fluffy in large bowl with electric mixer at high speed. Beat in eggs one at a time, then vanilla and lemon extract until blended.
3. Stir in flour mixture to make a stiff dough. Wrap in wax paper and refrigerate 3 hours, or overnight.
4. Brush cookie sheets generously with oil. (This makes cookies easier to remove from sheets after baking.)

Flotation

5. Roll out dough, a quarter at a time, to a $\frac{1}{4}$ inch thickness on a lightly floured pastry cloth or board. Have student cut out a shape with a 3-inch cookie cutter.
6. Have students cut smaller areas out of each of their individual cookie shapes.
7. Place the clear candies in the open areas of each cookie.
8. Place the cookies in the oven and watch what happens!!

Teacher Hint:

Crush any clear candies, lifesavers, etc. that are used. They melt faster when crushed.

Provided by The Society for Mining, Metallurgy, and Exploration, Inc.