

Luscious Layered Landfill

-modified 11/20/01 by Kay Frank, SWI

STANDARDS: Science: 1. Science as Inquiry 3; 2. Mixtures

SKILLS: Following directions, creating, communication, sequencing.

PURPOSE:

1. The student will draw and label a landfill.
2. The student will prepare a variety of physical mixtures.
3. The students will properly sequence the layers.
4. The student will describe the purpose of each layer of a landfill.

BACKGROUND: See landfill cross-section information sheet.

MATERIALS:

- < 8 oz pliable clear plastic cups
- < Paper plates
- < Spoons
- < Knives
- < Bowls
- < Plastic bags to crush crackers
- < Birthday candle
- < Matches
- < Oreo cookies
- < Regular and Chocolate Graham crackers
- < Peanuts
- < Fruit roll-ups
- < Twizzlers
- < "Cool-Whip"
- < Chocolate "Jello" pudding (and milk)
- < Green sprinkles
- < Candy (M&M's, Skittles)

PREPARATION:

Assemble materials ahead and set out in bowls with clear labels for layers. Have 1 cup (for landfill) and 1 paper plate (for a workplace) per student. Crush graham crackers. Separate Oreos. Make up pudding.

"SOIL" = finely crushed chocolate graham crackers or Oreos with no filling

"CLAY LINER" = half Oreos with white filling

"PLASTIC LINER" = fruit roll-ups (Each student cuts around top of upside down cup with knife or scissors.)

"SAND" = finely crushed regular graham crackers

"PEBBLES" = peanuts

"LEACHATE PIPES" = cut Twizzlers in half and cut off both ends. Use 2 halves.

"TRASH" = chocolate pudding filled with candy like M&M's

"FOAM COVER" = Cool Whip

"GRASS" = green sprinkles

"METHANE GAS PIPES" = candles

PROCEDURE:

1. Put 1/4 SOIL layer in bottom of cup.
2. Place Oreo cookie cream side up for CLAY layer.
3. Slide cut circle of Fruit Roll-Up into cup (will push up on sides) for PLASTIC LINER.
4. Sprinkle a spoonful of SAND over liner.
5. Place peanuts in to represent layer of PEBBLES.
6. Place 2 lengths of Twizzler into pebbles for LEACHATE COLLECTION PIPES.
7. Repeat steps 4, 2, 4, 5, 6 for extra security.
8. Add TRASH.
9. Add more SOIL.
10. Top with Cool Whip for FOAM COVER.
11. Sprinkle green sprinkles over top for GRASS.
12. Add a candle to represent METHANE GAS PIPE.
13. Light candle to show production of energy from landfill gas.
14. Extinguish flame and eat the "Luscious Landfill."

Enjoy this waste management system.

