

Colorful Lather

Summary

In this activity, students marble paper with shaving cream and food color while exploring water, polarity, and hydrophilic and hydrophobic materials. Although the activity is familiar, it contains a new twist--exploring how a colored shaving cream mixture behaves when a drop of water is added.

Time Frame

1 class periods of 60 minutes each

Group Size

Pairs

Materials

- [student page](#)

(attached)

Aerosol shaving cream (standard white type)

Paper plate

Scraper such as spatula or tongue depressor

Toothpicks

Food color

3--4 small (~3 _ 5 in.) pieces of non-glossy, sturdy paper such as index cards, card stock, or art paper

Eye dropper

Water

Small transparent cup

Paper towels.

Instructional Procedures

1. Hook:

Place a shallow dish such as a Petri plate an overhead. Place a thin layer of water on the bottom.

Add a drop of vegetable oil or motor oil on the water.

Ask the students to pick a partner and explain what happens in terms of atoms or molecules.

Select a few students to describe their conversation.

Read student sheet with students and describe the location of materials.

Assessment Plan

Scoring Rubric or answer key:

The color diffuses completely and quickly into water and is absorbed by the paper. Due to the nonpolar tail of soap, the color spreads less in shaving cream.

The food color dissolves readily in water, and since water is polar, food color must be polar as well. Since the food color spreads into the paper easily, the paper must contain polar substances.

Paper primarily contains cellulose, which has polar hydroxyl groups at various locations, making it partially polar.

Mousses, whipped cream, some hand soaps, and carpet cleaners are similar examples of colloids.

Early artists would not have used the words hydrophilic, hydrophobic, polar or nonpolar to describe their materials, but since these artists might have prepared their materials from natural plants or colored rocks, they would still have acquired extensive knowledge of their materials and their interactions.

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)