

Activity – Changing Matter

Standard III

Students will gain an understanding of Physical science through the study of the forces of motion and the properties of materials.

Objective 2

Analyze objects and record their properties.

Intended Learning Outcomes

Generating evidence: Using the processes of scientific investigation (i.e. framing questions, designing investigations, conducting investigations, collecting data, drawing conclusions)

Knowing in Science: Understanding the nature of science.

Content Connections: Language Arts

Background Information

A liquid takes the shape of any container it is poured into, but doesn't change its volume as it flows from one container to another. (*Volume means the amount of something or the quantity of space it takes up.*)

A solid keeps its shape and volume. Water becomes a solid when temperatures drop below freezing. Water's freezing and melting points are not very extreme, so it can pass from phase to phase in the course of a day.

Invitation to Learn

Discuss prior knowledge about popsicles and how they are made.

Instructional Procedures

1. In a glass pitcher, mix water and one color of food coloring.
2. Discuss the properties of liquids.
3. Pour liquid into ice cube trays.
4. Place trays in the freezer.
5. Repeat steps 1 - 4 with a different color of food coloring.
6. Remove trays from freezer.
7. Have students place one ice cube of each color on white art paper.
8. Place paper and cubes in a sunny location.
9. Wait for liquid to evaporate and dry.
10. Observe the pattern that remains on the paper.

Materials

- white art paper
- ice cube trays
- water
- food coloring

Possible Extensions/Adaptations

Teach hand signs and a song for the water cycles. Use transformations to create a picture. -

Additional Resources

Amazing Water by Melvin Berger

An Apple Floats by Christin Wilsdon

Is It Floating by Fred and Jeanne Biddulph

Sink or Float by Leslie Fox

Water Changes by Brenda Parkes

Family Connections

Encourage students to find other examples of water changing states in their homes. Encourage students to find other solids, liquids, and gases in their homes.