

Water-What's its Matter?

Grade Level: 2

Approximate Length of Activity: One class period

Objective

Teacher

1. Illustrate the three states of matter through observation.
2. Discuss the importance of water.

Students

1. The student will define the three states of matter—solid, liquid and gas.
2. Learn about how crucial water is.

Michigan Content Standards: (Science) S.IP.02.12; S.IP.02.13, S.RS.02.11, P.PM.02.12

Background

Water is a very important substance in our lives. Without water we could not survive. Next to air, water is the most abundant substance on the planet Earth.

Water can be solid, liquid or gas. Ice, snow and hail are water in its solid state. Most of the Earth's frozen water is at the North and South Poles.

A very small amount of the Earth's water is in the atmosphere, as clouds or fog or steam. This is water in its gaseous state. Water doesn't stay in the atmosphere very long. It falls back to the Earth as rain or snow.

Rain is water in its liquid state. Most of the liquid water on the Earth is salt water that we cannot drink. Salt water is found in oceans and seas. The water we drink is fresh groundwater, which comes from lakes and streams. Since we only have a small amount of freshwater on the Earth, it is very important that we learn to use it wisely.

Source: Oklahoma State University Cooperative Extension Service, Water Quality Task Force

Materials Needed

- Clear jar or beaker
- Water
- Ice cubes

Activity Outline

1. Bring a clear jar or beaker, water and ice cubes to class.
2. Summarize the background information.
3. Ask students which state of matter takes up the most space—solid or liquid.
4. Fill the jar or beaker with ice cubes. Then fill the jar or beaker to the top with water. Ask students to predict what will happen. Will the beaker overflow when the ice melts?

Discussion Questions

1. How did your predictions compare with what you observed in the actual experiment?
2. What are the three forms of water?
3. List an example of water as a solid.
4. List an example of water as a liquid.
5. List an example of water as a gas.

Related Activities

1. Give each student a paper drinking cup and seal-locking bag. Instruct students to hold the bag by one corner so it is in a diamond shape. Tape the cup inside the bag to avoid slippage. Next, put two ounces of water in the cup. Seal the bag, and tape it to a sunny window. Have students record what they observe after 10 minutes, 30 minutes, two days and four days. (The water should evaporate from the cup, condense the sides of the bag and collect in the bottom of the bag.)
2. "The Importance of Freshwater" from the Michigan Farm Bureau Promotion and Education Department, call 517-323-7000 ext. 3213. (Included)
3. Have students keep track of how many times they use water in a day and for what. Discuss how they might be able to conserve water.

Book Resources

1. "Water We Drink!" by Enid Bloom
2. "Weather, First Discovery Book" by Pascale Bourgoing
3. "Protecting our Rivers and Seas" F. Brooks

Acknowledgement: Adapted from "Water - What's its Matter?" provided by Oklahoma Agriculture in the Classroom.



The Importance of Fresh Water

Michigan Farm Bureau Promotion & Education Department

1. Before demonstration: Using a gallon jug of water - add 1-2 drops of blue food coloring.
2. Introduction: Farmers are careful to be good to the environment. We need to preserve our resources. One of the most important resources is water. Most of our planet is covered with water. Water found in freshwater lakes and rivers is an important drinking source for people and animals.
3. Let me show you how limited our water supply is.
4. Show 1 gallon of water.
5. Explain: This gallon of water represents all the water on earth. Pour out 1/4 cup of water into plastic cup. This 1/4 cup of water represents glaciers, ice caps and all the fresh water in the world.
6. Ask: Could I have a student volunteer hold out their hand to demonstrate just how little of the world's water is available for us to use?
7. Take 2 drops of water from 1/4 cup of water and put in student volunteer's hand.
8. Explain: These 2 drops of water represent all the water in freshwater lakes and rivers that is available for people and animals to use.
9. Explain: Water is an important resource. Conservation practices and biodegradable products from agriculture keep the water clean.
10. Conclusion: Food and fiber products along with conservation techniques including filter-strips and minimum tillage are friendly to the environment. Biodegradable products and conservation practices help ensure clean safe water.