

# Absorb-Repel-Evaporation



## Measurable Objective

The students will conduct an experiment by dropping water droplets on various materials to see if they repel or absorb. They will make a graph by listing the objects on which the experiment is being conducted. They will write a R for repel or A for absorb. The students, after conducting the experiment, will easily be able to see how many repelled and how many absorbed the water by counting the A's compared to the R's. The students will play the game Freeze and Melt. They should understand that freezing the body (not moving) relates to being frozen. When the child is told to melt, they will be able to move again.

## Suggested Grade Level

3rd grade

## Anticipatory Set

Write the following words on the board: Absorb, Repel, and Evaporation. Tell the students that they will learn what these words mean and will do experiments to help them understand. Ask the following questions and then read a book about water.

- What is water like?
- How does it feel?
- How does it taste?
- Does it have a shape?
- Is water always a liquid?

## GLE

Concept 1. Strand 1b. Identify everyday objects/substances as solid, liquid, or gas (air, water etc).

Concept1. Strand 1e. Investigate and recognize water can change from a liquid to a solid (freeze), and back again to a liquid (melt), as the result of temperature changes.

## Instructional Point

Prior Knowledge: Water can take on many forms—snow, ice, rain, steam, etc.



## Procedure

Explain what the pot of boiling water is doing on the hotplate. Ask them what they see. How is the steam being formed? Ask if steam is a form of water. Show the children a glass of water. Ask if this is a form of water. How is it different than the steam? Is it the same? Can a person turn the water into steam? Show some ice cubes. Ask if it is different than steam or liquid. How is it different? Could we turn the liquid into a gas? Ask them if steam, water and ice are forms of water. Hold a plate over the steam and have it collect on the bottom of the plate enough to make water droplets. Let the water droplets fall down into the pot of water (simulates rain) Ask the children what they think will happen if I throw the ice cubes into the boiling water. Show them that ice can melt to water and water can turn into steam.

## Materials

- Book about water
- Ice cubes
- Electric pot to make steam
- Glass for water
- Medicine dropper
- Plastic bag with samples of different materials for testing absorption and repelling water
- 3 oz paper cups
- Paper towels
- Diet soda for geyser demonstration
- Plate to collect water
- Pot holders

## Modeling

Model how to use the eye dropper to measure 1 drop of water onto materials. Model how to play the Freeze and Melt game.

## Check for Understanding

Listen for comments about understanding that water takes on many forms. While playing Freeze and Melt, see how many understand stopping is freezing and melting means moving about. For older students, let them be the leader and announce Freeze and Melt. Watch children as they experiment with different materials asking if they absorb or repel water.



### **Guided Practice**

- Walk around showing each child how to squeeze the eye dropper to suck up water.
- Show each child how to squeeze gently 1 drop onto materials.
- Show child how to list words down one side of paper and at the top of paper place an A and a R.

### **Independent Practice**

- Each child should be able to conduct the absorption/repel activity by themselves.
- Each child should be able to conduct game Freeze and Melt independently.
- Each child must list objects being tested.
- Each child must be able to place an A and R in a grid fashion to be checked off as they conduct the experiment.

### **Closure**

Take students outside for geyser activity. Show them that water can take on active forms as well as calm ones. Ask children if they can remember the activity with water on experiment materials. Ask what “repel” means. Ask what “absorb” means. Is water always a liquid? What other shapes does it take? Put 1 roll of Mentos candies into a 2 liter bottle of diet soda and let the children see how water cannot only be steam, ice or liquid, but it can erupt into a huge geyser as well.

### **Evaluation**

I will hand out a worksheet that has various pictures of Solids, Liquids, and Gases. The children will put the letter S for Solids, L for Liquids, and G for gases. They must get at least 80% right to prove understanding of the concept. Children must have the grid filled out with names of items that were tested and a check mark under A for absorb or R for repel. They can then calculate how many Rs there are compared to As.

*Lesson plan compiled by Brenda Wisinger, an Earth Team Volunteer and Early Childhood Education student at Missouri State University, Springfield, MO. January, 2008.*

Place an S by the Solids, and L by the Liquids, and a G by the Gases.

