

LETTER TO FAMILY

Cut here and paste onto school letterhead before making copies.

Science News

Dear Family,

Water is a unique earth material, the only material on Earth that occurs naturally in all three states of matter: solid, liquid, and gas. Next to the air we breathe, water is probably the most important thing in our lives. Your child will learn these interesting things and more as we investigate water, its properties, and what it can do in the **FOSS Water and Landforms Module**.



One of the goals of this module is to help students focus their observation skills on water—to begin seeing water in a new light. Through their investigations into the properties of water (how it reacts to heating and cooling and the processes of evaporation and condensation), students will begin to appreciate how important this unique material is. A second goal is to investigate how erosion and deposition move earth materials and shape new landforms through stream-table investigations. In addition, we will look at patterns of change on Earth such as changes in the Sun/shadows, phases of the Moon, and weather patterns.

You can help your child focus on the properties of water and its uses in several ways. Use the Internet to find the source of your local water. Take a trip to the public library and check out books about water, water conservation, and recycling. Plan a visit to a garden shop and find out more about irrigation systems and water drainage in different kinds of soil. Visit a dam, reservoir, lake, or stream to observe the flow and interactions of water with the earth. Consider ways to conserve water in your home and community. Take a walk around the block after a rainstorm, looking for evidence of precipitation, condensation, evaporation, and flowing water. Check the weather report on a regular basis and follow the lunar cycle.

I will be sending home assignments called Home/School Connections. Please try to complete them with your child that evening and send them back to school the next day. You can get more information on this module by going to www.FOSSweb.com.

We're looking forward to weeks of exciting investigations about water and landforms.

Sincerely,

HOME/SCHOOL CONNECTION

Investigation 1: Hot Water, Cold Water

Water is essential for life. You take in water every day. You drink some of the water when you are thirsty, but a lot of the water you need comes from food.

Water is used in the preparation of a lot of foods. Work with family and friends to find out when water is used in food preparation. For instance, some kinds of instant cocoa and soups say on the package, "Just add water!" Preparing rice takes water, but how much? Look around your kitchen or take a field trip to the market and look for products that use water as part of the preparation. Write the food or product in the "Food" column below, the size or number of servings in the "Servings" column, and the amount of water in the "Water" column. The first two are filled in as starters. Prepare one type of food using the appropriate amount of water indicated in the directions. Evaluate if the amount of water in the direction is accurate in order to make the food as advertised.

Food	Servings	Water
Instant cocoa	1	1 cup
Rice	4	3 cups

Is the water used in food preparation consumed, or is some thrown away? Put a check by the foods in the list above if all the water is used.

HOME/SCHOOL CONNECTION

Investigation 2: Water Vapor

Invisible water

1. Moisten your forearm with a damp washcloth.
2. Either blow gently on the wet spot or fan your arm with a stiff sheet of paper.
 - How does the wet spot on your arm feel? What happens to the water on your arm?
 - How does sweating help keep your body cool?

Note: It takes heat to evaporate water into water vapor.

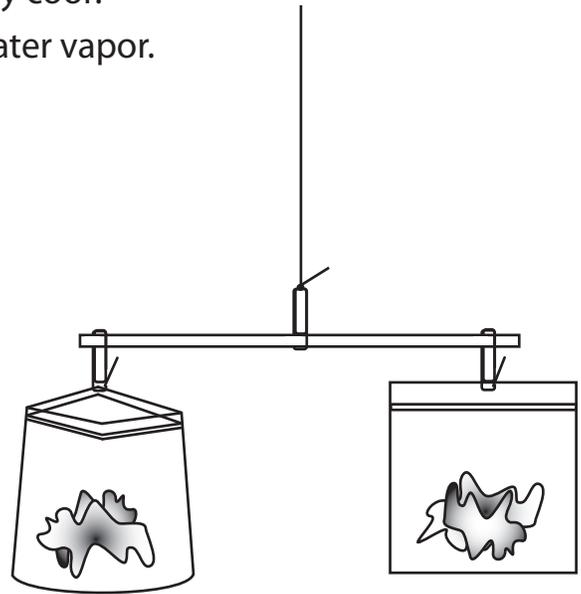
Into thin air

How fast does water evaporate in your home?

Set up an evaporation system and find out.

You will need

- 1 Plastic straw
- 3 Paper clips, regular size
- 1 Piece of string about a meter long
- 2 Plastic zip bags
- 2 Paper towels



1. Slide three paper clips on the straw. Open the clips on the ends to make hooks.
2. The middle paper clip is the pivot point. Tie the string here.
3. Moisten the paper towels. Put one in each bag. Seal one bag and leave the other open.
4. Hang the bags on the two hooks. Slide things around until they balance.
5. Hang the whole system where it can be monitored closely. Observe.

Think about humidity

Where did the water go? The amount of water vapor in the air is called **humidity**. When air contains as much water vapor as it can possibly hold, the humidity is 100%. Warm air can usually hold more water vapor than cool air.

- Watch a weather report or check on the Web. What is the local humidity?
- How could the humidity of the air change the rate of evaporation?

HOME/SCHOOL CONNECTION

Investigation 4: Water and Resources

When you look at a clear lake or a still puddle, you notice the water acts like a mirror, reflecting images.

Let's explore mirrors. Find a mirror at home. If it is not a hanging mirror, figure out how to position it at about eye height on a wall. Make the observations suggested below. Try to figure out why you see the images that you do. Record your observations on the back of this sheet.

- Stand close to the mirror, right in front of it. How much of your body can you see? What do you have to do to see more of your body, move closer or farther away? Or does it matter where you move? Can you explain what you see in the mirror?
- Stand a little bit off to one side with your face close to the mirror. Look at the scene you can see in the mirror. Move back from the mirror. What happens to the scene? Can you see more or less? What do you have to do to see more in the mirror? What does that tell you about using the rearview mirror in a car?
- Get a coin and two mirrors that you can work with on a flat surface. How can you position them to see multiple images of the coin? How do you position the mirrors to see the greatest number of images? How do you explain the multiple images?
- Make alien hands by placing the edge of a mirror in the palm of your hand and looking into the mirror at an angle. Can you make a hand with three fingers? Eight, nine, or ten fingers? What other bizarre images can you make? Look at another family member's face, a pet, your feet, and other interesting objects to see curious symmetric reflections.

HOME/SCHOOL CONNECTION

Investigation 5: Patterns of Change

1. Choose a weather source that will give you at least a 5-day forecast for your home area. Write your data source at the bottom of the page. Here are some suggested data sources.
 - TV news (what channel?)
 - Daily newspaper (what newspaper?)
 - Internet (www.wunderground.com or www.weather.gov)
2. Record the 5-day forecast for your home area in the forecast table below.
3. Check with your source every day and record the actual weather.
4. Write about whether or not the forecast was true to the actual weather.
5. Do this during each season (fall, winter, spring, and summer) and compare..

5-Day Weather Forecast						
Day	Temp. (°C)	Humidity (%)	Wind speed (km per hour)	Wind direction	Visibility (km)	Observable weather
1						
2						
3						
4						
5						

5-Day Actual Weather						
Day	Temp. (°C)	Humidity (%)	Wind speed (km per hour)	Wind direction	Visibility (km)	Observable weather
1						
2						
3						
4						
5						