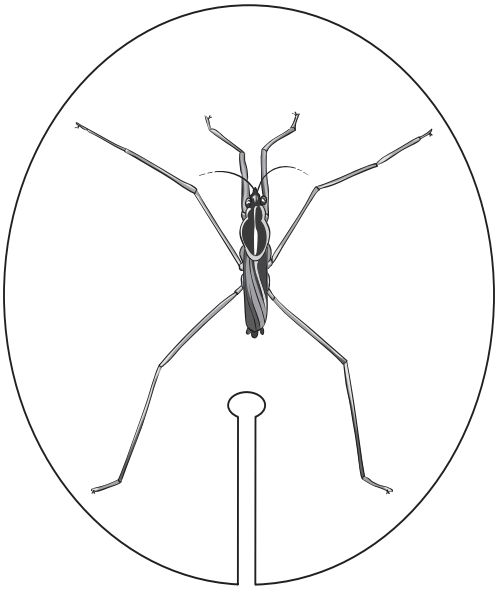
HOME/SCHOOL CONNECTION

Investigation 1: Water Observations

Try these three activities at home. Make sure you work in a place where it's OK to spill a little water. Record your observations on another sheet of paper.

You will need

- 1 Scissors
- 1 Basin of water
- 1 Toothpick
- Dishwashing liquid
- 1 Glass of water
- Paper clips, regular size
- 1 Strawberry basket



Water strider

1. Cut out the water strider along the line. Also cut out the notch at the bottom.
2. Float the paper water strider in 6–10 cm of water in a sink or plastic basin.
3. Use a toothpick to place a tiny amount of dishwashing liquid in the top of the notch near the strider's abdomen. How can you explain what happened?

Paper clips in full glass of water

1. Fill a small drinking glass with water up to the brim.
2. Carefully add paper clips, one at a time, to the glass of water.
3. Observe the glass from the side. What shape is the water's surface?
4. How many paper clips can you add before water spills over the edge?
5. Why do you think you could add paper clips to the glass when it was already filled to the brim?

Berry basket

1. Next time your family has strawberries, save the plastic basket they came in. (A substitute for a basket is to cut a small piece of plastic from a recycled container.)
2. Float the berry basket, like a boat, in 10–15 cm of water in a sink or plastic basin. Observe the shape of the water in the squares at the bottom of the berry basket.
3. Add one drop of dishwashing liquid to the water in the middle of the berry basket. What do you observe? Why did it happen?

HOME/SCHOOL CONNECTION

Investigation 2: 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.

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

HOME/SCHOOL CONNECTION

Investigation 3: Weather and Water

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.

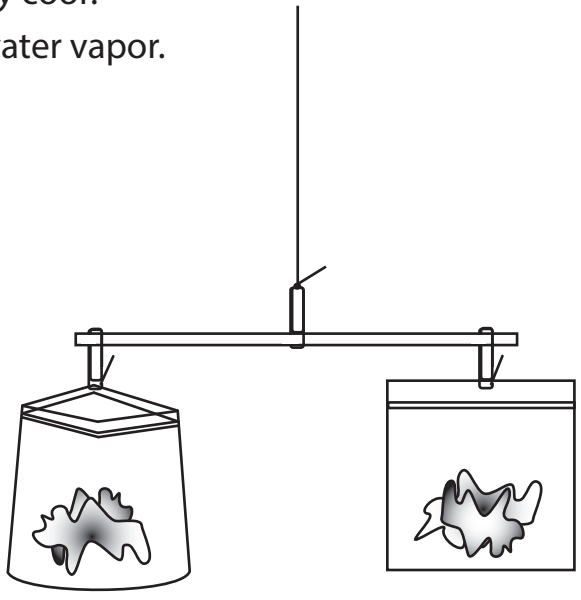
Into thin air

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 percent. 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: Seasons and Climate

On very hot days or very cold days, your home energy usage can increase as you use the air conditioner or heater. Unfortunately, this can be very expensive. To add to this, many homes are not built to be very energy efficient. Often times the energy we use to heat or cool our homes also heats or cools the area around our homes. This is because the house is not designed to ensure that the heating or cooling is contained.

Research ways you could make a room in a house or your school more energy efficient. A good place to start is by going to the website for your local utility company and searching "energy efficiency".

Make a model of a house (or another building such as your school) and detail places and ways you could help keep energy costs down and be more energy efficient. An example of how to make a cut-away drawing is provided below. You can use the back of this page or your science notebook to write down your ideas.