

# WHAT'S IN YOUR WATER?

GRADE LEVEL: 4 - 8

## OBJECTIVE:

Students will be able to determine the properties of water using test kits for pH, hardness, dissolved oxygen, copper, iron and chlorine, and will be able to determine if the water is able to sustain life.

## MATERIALS:

Water samples from Louisville, the Ohio River, Indiana, pond water, rainwater, well water. Water test kit such as La Mott's Tap Water Tour.

## PROCEDURE:

1. Have students form groups of four or five and distribute water samples and test materials to groups. Give each group one type of water but run all of the tests on it (hardness, pH, dissolved oxygen, copper, iron, chlorine.)
2. Explain the procedures for obtaining the results of the tests. (In the Tap Water Tour kit the students drop a tablet into a small amount of the water and watch for a color change.)
3. Have the students make predictions about the water. Which water sample will have the highest pH? Which water sample will have chlorine in it? Will the rain water be the softest? Which type of water will be the hardest?
4. After doing the tests and recording the results have the students create a chart showing the results from their water sample.
5. Results may vary but tap water should be neutral, while rain water may be the most acid (i.e. have the highest pH.) Tap water should test positive for chlorine for it is added to kill

harmful bacteria that may be in the water. Spring water or pond water may be the hardest having the most dissolved minerals in it.

6. Since all animal and plant life depend on oxygen to sustain life, water is tested to see if there is enough dissolved oxygen in it for the plants and animals that live in it. According to the test results, which water sample had the most dissolved oxygen in it? How does oxygen get dissolved the water? Why is it important for the Ohio River to have enough dissolved oxygen in it? The pond, the river and the rainwater should have lots of dissolved oxygen in it. Oxygen near the surface of the water gets absorbed and dissolved in it. The more the surface of the water is exposed to air the more oxygen it absorbs. The Ohio River supports much plant and animal life and therefore needs much dissolved oxygen. It also has a very large surface area to absorb the oxygen.

## EXTENSIONS/EVALUATIONS:

7. Read *The Magic School Bus at the Waterworks* by Joanna Cole to the students. It presents an entertaining lesson in how water is purified and delivered to our homes.
8. Have children construct an aquarium where they have to test the temperature and acidity and oxygen levels for the fish. Have the students keep a daily chart so they can see the fluctuations in chemical content of the water.
9. Have the students draw a diagram of how the water gets from the river to their house.
10. Take the students to a water treatment plant to observe the process used to treat water so that it is pure enough to drink. The Louisville Water Company has an excellent facility.
11. Have students write a story pretending that they are a water droplet and describe their trip through the water treatment plant.