WHAT'S IN YOUR WATER?
THE SHOWER

TEACHER'S GUIDE

All kinds of drugs from pain relievers to cold medicines, plus personal care products like shampoo and lotion are finding their way into our water. They enter the water through human and animal waste, bathing, swimming, and by flushing them down the toilet. Many of these chemicals cannot be seen in the water, but they are still there. Although water and wastewater treatment facilities do a great job of cleaning our water, these treatment processes cannot remove the complex, tiny chemicals within drugs, shampoos and other personal care products. The following activity will demonstrate to students how difficult it is to remove all pollutants from water.

MATERIALS NEEDED:

- *large bucket or basin*
- *small pieces of trash (gum wrappers, bottle caps, candy bar wrappers)*
- *½ cup soil*
- *1 teaspoon shampoo*
- *1 tablespoon rubbing alcohol*
- *½ cup soil*
- *1 tablespoon cooking oil*
- *1 tablespoon laundry detergent (or other household cleaning product)*
- *tongs*
- *sieve or strainer*
- *large bowl to set under strainer*
- *coffee filter or cheesecloth*

DIRECTIONS:

1. Fill bucket or basin ½ to ¾ full of water.

2. Show students the rubbing alcohol, explaining that it will represent medicines in the water. Pour it in, and have the students observe that the water looks the same as before, stressing that it is polluted, even though they cannot see it. Discuss how the medicine got there in the first place.

3. Ask for volunteers to put other pollutants in the water- soil, shampoo, trash, oil, and laundry detergent. Have students observe what the water looks like after each addition.

4. Now that the water is polluted, how easy will it be to clean it up? Ask students for ideas about cleaning up the water. Have volunteers use the tongs to remove trash from the water.

5. Discuss what is still in the water, and how it might be cleaned. Use the strainer and/or sieve to remove more pollution. Discuss with students whether or not the water is clean yet.

6. Line the sieve with the cheesecloth or coffee filter and place it over the bowl. Pour some of the water into the sieve. Have students observe the clarity of the water coming out of the sieve.

7. Discussion: Does the water look clean? What is still in it that we can see? What might still be in it that we can't see? (Medicines, shampoo, household cleaning products, etc.) How difficult/easy is it to get water really clean so that we can use it again? What are the benefits of keeping it cleaner to begin with?