

# WHAT IS YOUR WATER SOURCE?

by Cherie Schadler

Learn where your drinking water comes from and build a model water **filtration** system.

Have you ever wondered where the drinking water comes from when you turn on the faucet? Does it come from an aquifer via a well, a **reservoir**, or a natural spring? With the help of your parent or teacher, locate your drinking water source, then make a visit to your local public water works department that maintains your water supply system to learn how water is purified for drinking. You may also want to find out if your school or your family uses a water **filtration** system. There are many different kinds of water filtration systems. Some of them only **filter** out harmful bacteria where others filter out sand, iron and other minerals and chemicals. Water filtration systems may be large enough to clean the water in your entire school or may be as small as an attachment on your kitchen water faucet at home.

To see how a filtration system might work, try this activity.

You will need:

- 3 - 4' poles or sticks at least 1" in diameter
- 3' of twine
- a large cotton t-shirt
- 5 or 6 broken up pieces of charcoal (not Match Light)
- 2 cups of clean sand
- Hand full of pine straw, hay, or leaves
- 1 large cup of pond water, standing water, or tea as a substitute
- A bowl or pan to catch the filtered water
- Scissors

Instructions:

- Lash or tie the 3 poles together about 6" from the top to form a free standing tripod.
- Cut 3 sizes of triangles out of the t-shirt. Tie each corner of the smallest fabric triangle to one of the poles about 1' down from the lashing. Tie each corner of the next largest fabric triangle to each of the poles about 1' down from the smallest triangle. Tie each corner of the largest fabric triangle to each of the poles about 1' down from the middle triangle. This will create 3 fabric baskets to hold the filtration materials. Make sure that the tripod is standing firmly on the ground, that it is

sturdy enough to hold materials and water, and that all 3 triangle baskets are firmly tied.

In the smallest triangle basket at the top, spread the pine needles, hay, or leaves. Pour the sand into the middle triangle basket. Place the pieces of charcoal in the largest triangle basket at the bottom.

Place the bowl or pan on the ground below the third layer. It will catch the filtered water.

Begin to pour the pond water into the top triangle basket. It will not take long for the water to begin to trickle through each layer and begin to drip into the bowl or pan.

Notice how the straw or leaves help to filter out large material from the pond water. The sand filters out fine particles, and the charcoal helps to filter out some chemicals and organic matter, improving the taste of the water.

Once the water has completely filtered through the three baskets into the bowl or pan, again pour the pan water into the top triangle basket. Continue this process, filtering the water through the filtration system 3 - 5 cycles.

Compare some of the original pond water to the **purified** water. You will notice how clean the pan water appears compared to the pond water. This is a very primitive way to filter out chemicals and **organic** matter. However, although the water now looks clean enough to drink, it may still contain harmful bacteria. Many filtration systems use additional ways, including chemicals, to clean out the remaining bacteria.

### Think About It!

How could polluted water potentially harm your drinking water source?

---

---

---

---

---