

Mission Rehydrate: Water For A Thirsty Planet

Making And Testing A Water Filter

By Kathy Ceceri

Make Your Dirty Water

1. Add 2 to 3 tablespoons of your chosen contaminants to clean water, then shake or stir. Keep adding your contaminants until the water looks cloudy. **Shake or stir your dirty water again before every test.**
2. Pour some dirty water into a disposable cup, label it as “dirty water,” and set it aside for later.



Prepare A Disposable Measuring Cup

1. Pour $\frac{1}{4}$ cup of clean water into the disposable cup and mark the level.
2. Repeat with $\frac{1}{2}$ and $\frac{3}{4}$ cup of water.
3. Label the cup as “measuring cup” and set it aside.

NOTE: Do not use a measuring cup from your kitchen to measure the dirty water. This experiment could contaminate it.



Create A Color Comparison Chart

1. Use clean drinking water as the clearest sample and the dirty water you are testing as the darkest.
2. Color each reference point along the scale.
3. Then, decide how to label each (e.g., using numbers or descriptions).

Drinking Water	Clarity Level 1 • • • • • •	Clarity Level 2 • • • • • • • • • • • • • • •	Clarity Level 3 •	Dirty Water •••••••••• •••••••••• •••••••••• •••••••••• ••••••••••
Crystal Clear	Dingy	Cloudy	Muddy	Dark
Crystal Clear	Dingy	Cloudy	Muddy	Dark

Build Your Filter

1. Cut the water bottle in half around the middle. You'll use the top half like a funnel. The bottom half will hold the filtered water.

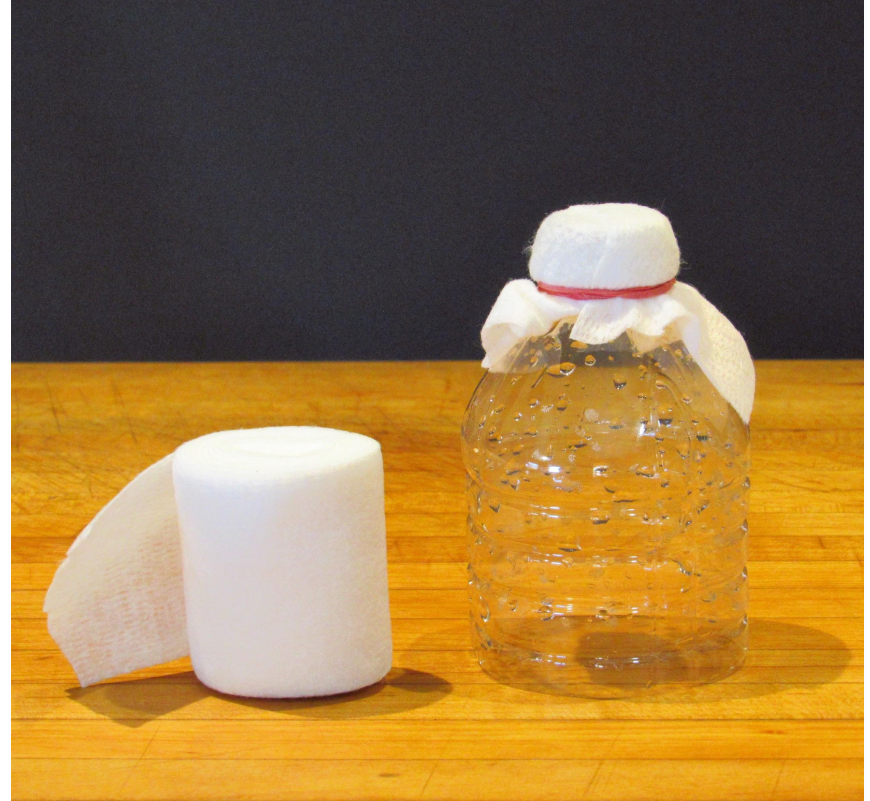
Tip: To cut, pick a line just above the middle of the bottle, pinch the bottle in that spot, and cut a small opening with the tip of the scissors. Then, get the blades inside to cut all the way around.



Build Your Filter

2. Cover the mouth of the bottle (the spout) with gauze or other fabric. Hold it on tight with a rubber band or other closure.
3. Turn the funnel you made with the spout facing down and rest it inside the bottom half of the bottle.

Your filter is now ready to use!



Test Your Filter

1. Choose one type of filtering medium and put some in the funnel.
2. Using the disposable measuring cup you made, pour some dirty water into the funnel.
3. **Write the total amount of dirty water used on your data sheet.**



Test Your Filter

4. Use your clock to record how long it takes for the water to start dripping out of the filter and how long it takes for most of the water to drain through.
5. What do you notice about how dirty water moves through the filter material? **Record your observations on your data sheet.**



Test Your Filter

6. Record the amount of water that came through the filter using the disposable measuring cup.
7. Pour the filtered water into its own clean cup and label it with the filtering medium you used. **Record the clarity on your data sheet.**



Test Your Filter

6. Repeat the process using a different kind of filter material.

Note: If you are reusing your bottle, throw out the old filter material and rinse the bottle clean before adding the new filter material.)

