



# Cleaning Dirty Water



## Activity

### EQUIPMENT

Jar of dirty water, filter funnel (cut-off top of plastic bottle turned upside down will do), filter paper (or coffee filters).

For follow-up activity: gravel, stones, material (e.g. old nylon popsock or tights)

### SUGGESTED CLASS LEVEL

5th – 6th

### PREPARATION

Add some fine soil to water to give a good supply of dirty water.

WARNING: DO NOT USE CONTAMINATED SOIL WHERE RATS, DOGS, ETC. MAY HAVE BEEN.

### BACKGROUND INFORMATION

The emphasis in this activity is on clean water being a very valuable commodity, how important it is for our health, and the effort that goes into providing it.

Water treatment involves cleaning and disinfecting water. The first step is to filter out the particles of dirt and some of the bacteria.

It is treated then with chemicals to kill harmful bacteria.

(Children should have done an activity on 'Dissolving' before carrying out this activity; so that they are aware that some things dissolve in water, e.g. salt, and other things do not, e.g. sand).



### TRIGGER QUESTIONS

What do you need to live? (*Water, air, shelter, food, money*)

Where does the water in our taps come from? (*a discussion on the Water Cycle would be good here; talk about rivers, lakes, wells, reservoirs.*)

Does the water come straight to our homes or is it treated in any way? What happens if the water is dirty? (*Talk about filtering and disinfecting*)

What is a filter? (*a way of separating mixtures*)

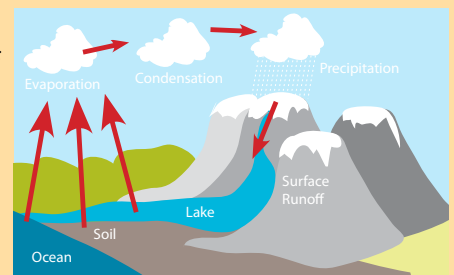
Can you remove everything from water by filtering? (*No, only the things that do not dissolve in water; many minerals dissolve in water as it flows over rocks, some of which give 'hard' water – water that is not easy to make a lather with.*)

If you were baking a cake and found lumps in the flour what would you do? (*use a sieve*)

When people are boiling vegetables for a meal, how do they separate the vegetables from the water in the saucepan?

(*The use of sieves, strainers, colanders can be discussed.- the concept of a mesh that lets smaller things through but holds back the bigger things.*)

Do you know of any way to catch a fish besides a line and hook? (*A net*)





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<p><b>CONTENT STRAND</b></p>	<p>Environmental Awareness and Care Materials – separation of materials Living Things – Myself</p>
<p><b>SKILLS</b></p>	<p>Experimenting, observing</p>
<p><b>CROSS-CURRICULAR LINKS</b></p>	<p>Geography - Environment SPHE: Diet and drinking water</p>
<p><b>ACTIVITY</b></p>	<p>Place the funnel in the jar and put the filter paper into the funnel. (To fold the filter paper correctly fold it in two and then in two again. Place it in the funnel so that three layers of paper are against one side of the funnel and one layer against the other side. Dampening the funnel slightly will help the filter paper to stick to it).</p> <p>Now pour the dirty water into the funnel.</p> <p>Wait! (Filtering is slow). Watch what happens.</p> <p><i>(The children often become impatient at this stage and start poking the funnel to hurry things up; the paper may tear and the dirty water go through unfiltered. This gives an opportunity to discuss the strength of paper when wet compared with when dry).</i></p> <p>Compare the dirty water with the water which comes through the filter.</p> <p>Examine the filter paper; what is in it? Can the children suggest what might cause this?</p>
<p><b>SAFETY</b></p>	<p>CARE WITH SOIL. DO NOT USE SOIL WHICH MAY BE CONTAMINATED. Care with water</p>
<p><b>FOLLOW-UP ACTIVITY</b></p>	<p>This activity could be used as an <i>investigation</i>, using different materials as filters, to see which filter produces the cleanest water:</p> <p>Sand could be put into a filter paper, and the water poured through;</p> <p>Gravel could be used as a filter (with a few stones at the bottom of the funnel to keep the gravel in);</p> <p>A piece of material (e.g. old nylon tights or popsocks), stretched over the funnel and secured with a rubber band, could be used as a filter.</p> <p>The water which comes through each of these filters can be compared with the original dirty water and also with the water which went through the filter paper only.</p> <p>Which filter gave the cleanest water?</p>

