



## Water Filtration Experiment

### What you need:

Dirty water ( or mud and clean water )

A funnel

Coffee filter/paper towel/muslin

An empty bottle

### Instructions

Set up your experiment. Mix together mud and water to make dirty water (or start with dirty water). Place your filter into the funnel, and the funnel on top of your empty bottle.

**Hypothesis:** Will there be any difference in the water once it has passed thru the filter?

Pour the dirty water through the filter slowly. Keep some still in your original container to compare.

**Observe:** Is the water in the bottle cleaner? Can you see the solids trapped by the filter?

There are many different ways you could construct this investigation. You could try just one filter and talk about how it traps the big bits of mud and dirt but smaller particles pass through, or you could compare 2 or 3 different types of filters to see what happens.

Is kitchen roll better than a coffee filter, would just a sieve work?

You could also work in stages, so try a colander, then a sieve and then a paper towel. Each stage should trap smaller and smaller particles.

Double layer the filters and see if you can get the already filtered water even cleaner.

### The Science Bit

A filter is a porous material which a liquid can be passed through to separate the liquid from solids suspended in it. Talk about the water cycle. When water falls on land, it either runs off into streams or seeps into the ground. When water seeps into the ground or *infiltrates* the ground, it is filtered and cleaned. This allows us to drill wells and pump water directly from deep in the ground into a glass to drink. Water that is on the surface of the ground is susceptible to all sorts of contamination, no matter where on earth it is.

Water on snowfields can have a reddish tint from bacteria growing in it. Water in a river can have sewage and chemicals in it. Water in a high mountain stream may have viruses or bacteria from wild animal waste. Since this is the water we have available to us when camping or during emergency situations, being ready to make it safe to drink is very important.