

Make a simple water filter

Try this experiment to make the most effective water filter and see how filtration works.

Water filtration

Water flows around the world through the natural water cycle. The natural water cycle cleans water through the infiltration, percolation and evaporation processes. Learn more about the water cycle at www.sydneywater.com.au/watercycle.

By replicating the natural process people can clean water and make sure they have a safe and reliable water supply.

This experiment replicates the infiltration and percolation process. We pass water through various materials that act as filters, trapping small solid particles as the water flows through.

What you'll need

- Large plastic bottle with a lid
- Scissors
- 'Muddy' water made from soil and clean water
- 1 cup measure
- Jar
- Choice of materials. Try some of these or pick your own:
 - cotton wool
 - sponge
 - wood chips
 - small gravel
 - stones
 - sand
 - paper towels or coffee filters



Activity

1. Cut the bottom off the drink bottle.
2. Punch a hole through the lid of the bottle. This will allow drainage.
3. Turn the bottle upside down placing the neck of the bottle in a jar.
4. Choose 4 filter materials and place these in the bottle in an order of your choosing.
5. Slowly pour 1 cup of muddy water into the filter and watch it percolate. Save some muddy water for comparison.
6. Repeat the activity and change the filter materials and/or the order of materials to improve the results. Compare all samples and the untreated water. Which water is the cleanest? Which filters worked best?

Do not drink the 'filtered' water. It is not safe to drink.