

SCIENCE WORLD

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BACKGROUND SCIENCE:

Water goes on a long journey before it makes it to our taps and it can pick up dirt, chemicals, and other contaminants along the way. Many towns and cities get their water from lakes and rivers. In BC most water comes from both precipitation and ice melting from the mountains. To ensure water is clean and safe enough for us to drink, it goes through two types of treatment. Physical filtration passes the water through different materials to filter out larger particles, and UV light or chemicals can be used to kill any bacteria left.

FUN FACT: tree sapwood has openings small enough to keep out bacteria, this means a branch could be used as a straw and filter water.

MATERIALS:

- Dirty water
- Clear, plastic 2L pop bottle
- Any number of filtering items:
 - Sand
 - Dirt
 - Wood chips
 - Rocks
 - Old t-shirt or fabric
 - Cotton balls
 - Coffee filters

WHAT TO DO:

Cut the bottom 4 inches of the pop bottle off. Turn the top half upside down and place it inside the bottom half, like a funnel. Fill the top half with your filter item. Pour the dirty water in and observe how the water looks in the bottom half after passing through your filter. What is the best filtration system you can create using the materials you have on hand?

Warning: Do NOT drink your filtered water- this experiment does not remove bacteria.



The set up of the pop bottle is similar to the [self-watering planter seen here](#). This is a great activity to re-use your filtration device and to further explore the capillary action that you experienced in Chromatography Caper!

WONDERINGS:

- Is the filtered water clean enough? What else might still be in the water that physical filtration cannot remove?
- What did the water look like after filtration as compared to before filtration?
- Which filter materials resulted in the clearest end water? Why? Which were the worst?
- What would happen if you filtered the water a second time?