



## Water Quality & Distribution Activity for Kids

### Water Filtration DIY

 Duration: **30–60 min**

 Difficulty: **Easy**

 Cost: **\$0 to \$15**

Make your own water filtration system to make muddy water clean again!

### Material List

- 1 Large plastic soda bottle
- 2 Cotton balls
- 1 Cup of sand
- 1 Cup of rock/gravel
- 1 Cup of activated charcoal
- 1 Pair of scissors
- 1 Plastic cup
- 1 Mallet and a plastic bag optional
- 1 Liter of muddy water make your own by mixing dirt or mud into water

### Instructions

- 1 Cut off the bottom of the plastic bottle with scissors (keep the cap on).
- 2 Stuff cotton balls into the neck of the bottle.
- 3 Crush the activated charcoal (optional, but it will work best this way).
- 4 Pour it into the bottle.
- 5 Next add the sand to the bottle.
- 6 Then add the gravel.
- 7 Loosen the cap and set your water filtration system on top of the plastic cup
- 8 Gently add muddy water into the top.
- 9 Observe what happens as the muddy water is filtered.

**Warning:** Do not drink this water, it is not filtered enough for that.

**Tip:** Activated charcoal is available at pet stores or can be bought online.

### How It Works

Muddy water goes through three different stages of filtration in our system. First, large particles are separated from the water as they pass through the rocks. Then, smaller particles are removed when they pass through the sand. Finally, the water passes through the activated charcoal, where the smallest particles are removed and some chemicals are removed as well. The cotton balls make sure that the activated charcoal stays in the bottle. By going through each of these steps, the muddy water gets cleaner and cleaner. However, in order to make drinking quality water it has to go through more steps, so don't drink this water.

