

## What you will need:

- 2 jars
- 2 funnels
- 2 paper towels
- Sand (about 2 cups)
- Soil (about 1 cup)
- Grape Kool-Aid (dissolved into water)



# Filtering with Soil vs Sand

## Overview and Objective

What is a filter? Can soil be a filter? Do all soils work the same? Make some hypothesis!

Soil naturally filters water that falls as rain and goes into rivers. Additionally, soil filters many chemicals out of water just like it did the grape Kool-Aid. These same techniques are used to purify waste water that comes from houses, cities, industry, and large animal feeding operations. A healthy soil is important for good drinking water. Healthy soil is important for farming as well. When the soil is healthy a farmer can produce more food.

## Process:

### SAND ONLY

1. Place your funnel on top of one jar. Plug the hole of the funnel with the paper towel strip.
2. Add sand into the paper towel/funnel. (Fill the funnel about  $\frac{1}{2}$  full of sand.)
3. Pour some grape Kool-Aid solution into the sand.
4. Wait a few moments and observe.

### SAND AND TOPSOIL

1. Place your funnel on top of one jar. Plug the hole of the funnel with the paper towel strip.
2. Add sand into the paper towel/funnel. (Fill the funnel about  $\frac{1}{2}$  full of sand.)
3. Add soil on top of the sand. (Fill soil to the top of the funnel).
4. Pour some grape Kool-Aid solution into the soil and sand.
5. Wait a few moments and observe.

**Observations:** What color is the water that collects in the flask? Compare, what is the liquid color difference in the two jars? Which one was a better filter?

Share your experiment results with us!

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