

# MOST\*

## *Filtering Water with Plants*

### **Materials**

- 3 potted plants in containers with holes in the bottom
- 3 clear cups
- Soil
- Water
- Powdered colored drink mix (like Kool Aid)

### **Instructions**

**1** Place the potted plants on top of the clear cups.

**2** Slowly pour clean water on one of the plants and watch the water go through the soil. What does the water look like after it goes through the soil? Why do you think it might be cleaner or dirtier than it was before? How long did it take for the water to go through the soil? Did all of the water you poured make through the soil?

**3** Now mix some soil into the water and slowly pour the water through the second plant. What does the water look like after it goes through the soil? Why do you think it might be cleaner or dirtier than it was before?

**4** Mix some of the drink mix into the water and slowly pour the water through the third plant. What does the water look like after it goes through the soil? Why do you think it might be cleaner or dirtier than it was before?

**5** Now pour some clean water through each plant to simulate a rainstorm. What does the water look like now? Is it clean or dirty? Why do you think it is clean or dirty? Is it less dirty than the original water?





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## *Filtering Water with Plants*

### *The Science Behind It*

Some materials can be filtered out by plants and soil. Some material can be caught up by soil and used by plants. This takes out pollutants before they can get to the groundwater or water that fills in spaces between the rock and soil under the surface. Certain pollutants like sediments and some things in wastewater from our houses are some of the pollutants that can get taken out. We use plants to help clean up water like man made reeds beds or wetlands to help clean up run off. Some water filtration systems are inspired by the way soil and plants filter out pollutants. Most water treatment includes a portion where they allow larger particles to float to the bottom called sedimentation and then there is the filtration process which filters the water through different size filters like sand, charcoal and to take out pollutants. These steps are similar the filtration process that happens in the soil with plants. There are also people designing new water filtration systems inspired by the natural filtration of water that soil and plants do.

