

Demonstrating the Water-holding Benefits of Compost



15 min



Compost use



All ages

Materials

- Compost (mature finished compost)
- Clay soil*
- Sand (to emulate sandy soil)
- Water
- Pitcher (or watering can, measuring cup, etc.)
- Mesh sieve
- Container for the water to flow into
- Container to measure out soil samples (like a measuring cup or small bucket)

*If you do not have access to clay soil, you can substitute with another soil that is dense and poor at letting water drain through. You can also just use the sand and the compost and soil to show the difference in how water moves through the soil.

Objectives

1. To demonstrate the ability of compost-amended soil to filter and hold water as compared to clay soil and sandy soil
2. Participants will be able to understand how/why compost:
 - Improves the ability of soil to filter and retain water
 - Visually understand how water flows through different soil types and mixtures



Instructions

1. Measure out the same amount of each sample to use (such as 4 small buckets full of compost, 4 small buckets of sand, and 4 small buckets of clay soil)
2. Measure out a specific amount of water you will use throughout the activity (such as 1 pitcher full for each sample)
3. For the demonstration, put a pile of clay on the sieve
4. Pour water over the pile and let it flow through into your other container
5. Repeat with the sand and the mature compost
 - The water should barely flow through the clay mixture
 - The water should flow right through the sand mixture
 - The water should flow through the compost mixture, but still be retained in the compost mixture
6. Explain why there was a difference in how much water flowed through

Alternative Options

For a longer, more in depth version of this activity, you could also find the water-holding capacity of each sample by measuring the weight of the samples before and after pouring water through them. You would need a scale and a place to record your data.



Students feel the different soil samples at ECO City Farms in Bladensburg, Maryland. Photo credit: ILSR.



Benny Erez of ECO City Farms in Bladensburg, Maryland, demonstrates that clay does a poor job of absorbing and filtering water. Photo credit: ILSR.