

Investigating Soil Percolation

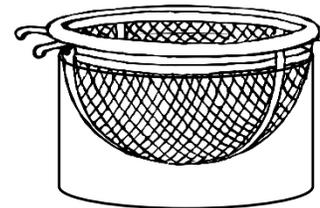
Investigation Question: How quickly does water percolate through different types of soil?

Equipment

- Up to (3) types of soil (or soil stand-ins, like dried rice, dried beans, or pebbles). Ideally, you will want soil samples with different particle sizes that you can compare, such as sand, dirt, pebbles, or clay.
- (1) small container with drainage holes to hold the soil. This can be a paper or plastic cup with holes poked in the bottom, a sieve, a small pot or container for a plant, or something else!
- (1) Larger container (big enough to hold the smaller container)
- (1) Measuring cup
- Water
- A timer or stopwatch
- Soil Percolation* Science Notebook page

Procedure

- 1) Place the first soil in your container with drainage holes. This can be a small paper or plastic cup with holes poked in the bottom, a sieve, a planter, or something else. Fill the container so that there is about 2-3 inches of soil on the bottom.
- 2) Place your soil container inside a larger container or bowl that can collect and trap the water, like the image on the right.
- 3) Examine your soil sample. What is it made out of? How big are the soil particles? How quickly do you think it will take water to run through it? Record your initial observations and predictions on the Science Notebook page under *Initial Observations*.
- 4) Measure out a cup of water in your measuring cup, and then pour the water onto the soil. Start your stopwatch.
- 5) Using your stopwatch, see how long it takes the first bit of water to percolate through the soil and drain into the larger container. Turn to the second page of the Science Notebook, and return this time in the *Data Collection* table. (As you do this, make sure to let the stopwatch continue to run!)
- 6) After about a minute, stop the stopwatch and remove the smaller container from the larger container.



- 7) Pour the water in the bottom container back into the measuring cup. How much water percolated through the soil? Record this data on your data table. (If you need to, it is okay to estimate!)
- 8) Repeat Steps 1-7 for the other soils so that you can compare them!
- 9) When you are done testing all of your soils, continue to the *Reflection* section of the Science Notebook page and answer the last four questions!