

# Soil Water Retention and Erosion Experiment

When it rains, water soaks into the soil and then flows into lakes, rivers and streams. The quality of the soil effects how quickly the water flows into the lakes, rivers and streams and how much of it is stored in the soil. When the rainwater flows too quickly it can cause floods. When very little rainwater is stored in the soil it can cause droughts. Therefore it's important to know what kinds of soil store rainwater the best. We can investigate which soil stores water best with this experiment.

Decide what kinds of soil you want to investigate. Here are some suggestions:



- soil without much organic matter
- soil with more organic matter
- soil with mulch and leaf litter on top
- soil with plants growing in it

Once you have decided which soils you want to investigate, you can set up the experiment.

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## Materials:

- as many plastic bottles as types of soil you have, cut lengthways
- as many clear glasses or cups as types of soil you have, to catch the water run-off
- a box or other item to keep the bottles in place above the cups - *You could instead place the bottles at the edge of a table and hang the cups off as shown here:*  
<https://www.osc.org/soil-science-experiment-how-to-demonstrate-soil-erosion/>
- a watering can

Place your different soil set-ups into the bottles, packing it in so it is a natural as possible. Place the cups so that water will flow from the bottles into the cups.

Now use the watering can to create heavy rainfall over each type of soil, adding the same amount of rain to each.

- What do you notice?
- Which soil stores the most water? Which the least?
- How does the colour of the water vary? What does this indicate?