Experiment 2: Testing the amount of water in the soil

If soils can retain water, they can help plants keep growing even when there is no rain for a while. Compacted soils or those poor in soil organic matter can hold less water. In this experiment, you will find out how much water the soils you collected are holding.

Materials required:

- different soil types from different areas in your yard. You will need to ensure soil types are labelled throughout the experiment - it would be useful to have trays that you label and you keep all the materials relating to that soil type (soil clods and jars/beakers of water) in that tray
- funnels - one for each soil type
- coffee filters
- jars/beakers - one for each soil type
- measuring jug
- scales.

Instructions:

1. Weigh 50g of each soil type and place it in a dish.
2. Set a funnel with a coffee filter and put it on top of a jar/beaker.
3. Pour your soil on top of the coffee filter.
4. Slowly pour 50 millilitres of water over the soil and wait 5 minutes.
5. Could you check how much water passed through the soil components using a measuring jug? What do you think it means that some soils hold onto more water than others? (Answer: The soils holding the most water are the least compacted soils. These are the soils that plants would most enjoy growing in.)

Notes: Ensure that students understand which soil types had the most water in them and, therefore, which soils would be best suited to growing the most plants (some plants like drier soils and some like very wet soils; most plants like something in the middle).

Experiment adapted from: https://www.fao.org/3/i7957e/i7957e.pdf