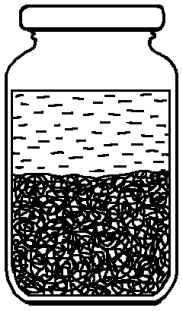
Experiment: What is Soil Made of?

In order to see what it is made of, you can separate soil into its different components. Each student should collect soil from a different place for this experiment so that you can also compare different soil samples.



Fill a glass jar half full of soil.

Add enough water so that the jar is almost full.

Put the lid on the jar and shake it vigorously.

Let the jar sit undisturbed overnight.

The next day, without disturbing the jar, look at the soil and water. Write down what you see.

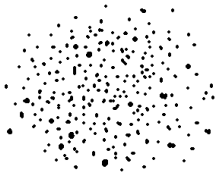
How is the soil at the bottom of the jar different from the soil on top?

If you find layers, count how many layers there are and measure the thickness of each layer.

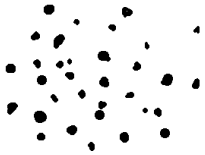
After you have written a record of what you see, open the jar and carefully pour off the water. Carefully separate each layer into a different pile on a newspaper, noting which layer is which. Even if you can't see layers, put the soil from the top in a different pile from the soil at the bottom.

One by one, spread out the contents of each pile and note what you find. Rub the soil between your fingers. Look at it with a hand lens. Compare the colour, texture, particle size, and other qualities of each layer. Keep good written records of what you see.

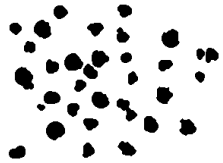
When soil gets mixed in a river it also gets shaken up, just as you shook up the soil in your jar of water. A river also deposits soil in layers that are separated according to the particle size. Sometimes this even happens in small gullies or channels that form when it rains hard. Try to find places where running water has deposited different types of soil.



The particles of rock in soil are classified according to their size: the largest particles are sand, the medium sized ones are silt, and the smallest are clay. The soil in a given place may be named after the size of particles it contains – e.g. it is called sandy soil if it has a lot of sand.



The smallest particles are carried farthest by a river. When a lot of clay and silt are deposited at the mouth of a river, they can build a **delta**, extending the land out into the ocean.



Besides these particles of rock, soil also contains humus - decaying matter from plants, animals, and other organisms. Humus is what supplies nutrients to growing plants, making the soil fertile. Humus is also carried downstream by rivers.