

Mud, glorious mud



Do you know there are different types of soil? It all depends on which rocks were worn down to make the soil.

You will need:

- paper or cardboard
- soil
- water
- a stirring stick
- old clothes or an apron. It's best to do this outside as it makes muddy mess, but if you are inside, put down old newspaper or covers to protect surfaces.

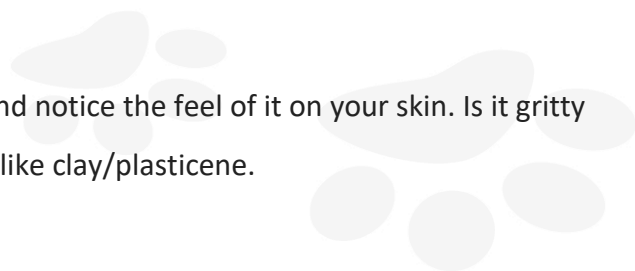
To begin, gather a few spoonfuls of soil and put them in a tub. Don't collect your soil where dogs wee and poo. Check to make sure there is no broken glass in your soil.



Look closely at the dry soil and think about the questions you could ask about it...

- notice the colours and shapes, is it crumbly or tough?
- are there stone in it?
- Are there any creatures in it?

Smell the soil. Rub it between your fingers and notice the feel of it on your skin. Is it gritty like sand, is it smooth like soap or is it sticky like clay/plasticene.



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Now...

...add a spoonful of water and stir it into the soil. You are trying to make the soil damp, not wet. Do you notice any changes? Pick up a spoonful of slightly wet soil.

Can you make your spoonful of soil into a ball? If not, try adding another few drops of water.



Squeeze the soil in your hand lots of times to get the water well mixed in. Can you make a ball now?

If not, and your soil feels gritty, you have **sandy soil**.



If you can make a ball, squeeze it for about a minute to make it warm and soft. Try to make a worm.



If your worm breaks easily, and the soil feels soapy, you have **silty soil**.



If you can make a worm easily and the soil feels sticky, you have **clay soil**.

Try marking some segments and a mouth, like a real worm.



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Test what soil is made of

You will need:

- A jam jar with a lid (or similar)
- Your soil sample from your walk
- A marker pen for the jar
- Water (approx. 250ml)



What to do:

1. Put soil into the jar until the jar is about 1/3 full. (Remove any animals first).
2. Add water to the jar until it is about 2/3 full.
3. Screw the lid on tightly.
4. Shake the jar vigorously for 2 minutes to thoroughly mix the soil and water.
5. Place the jar somewhere flat and leave the soil to settle in the water.

After 1 minute: Draw a line to mark the top of the soil where it has settled. Don't shake it or mix it up. This shows the amount of sand in your soil sample.

After 1 hour: draw another line at the top of the soil where it has now settled. This shows the amount of silt in your soil sample.

After 24 hours: Mark another line at the top of the soil where it has now settled, you should now have 3 lines. The final line shows the amount of clay in your soil.

Why do you think the sand appears first, the silt next and the clay last (see if you can spot the answer on the next page)



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Soil is made from:

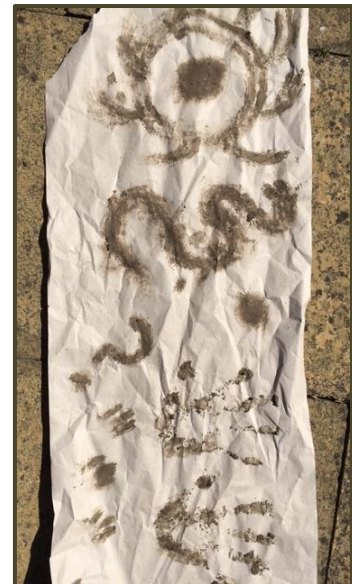
- lots of tiny bits of rock minerals – e.g. sand, silt, clay (40%)
The sand is heavier and settles quicker, then silt, and last of all the tiny, light clay
- air in all the spaces between everything in the soil (25%)
- water in these spaces too (25%)
- Organic matter – living and dead creatures, plants and fungi (5 – 10 %)
living creatures eat the rotting stuff and turn it into nutrients for the plants

Now to get even muddier!

Make some wetter soil, by stirring in a little more water and use it to do some painting.

You could make fingerprints, hand prints, your name, a picture of something you have seen on your walk, or something you would like to see.

For even more arty-soil activities have a look at the national galleries of Scotland's website:



<https://www.nationalgalleries.org/art-and-artists/features/home-where-art-is/week-nine>

Whenever you have been touching soil, remember to wash your hands well afterwards.