

Magical Mud

Mud, or soil, is vital for all life on Earth. It is a living thing and, just like us, it needs nutrients and water to stay alive. Discover more about the magical qualities of soil through play and experimentation.

NATURE'S KITCHEN



Find a messy corner of a garden where you can investigate different soil types.

What you need

Water, soil and sand, old pots and plates, sieves, old milk cartons, a rolling pin; perhaps a cardboard box cooker and different natural materials for decoration.

What you do

- Dig up some soil.
- Add water to your soil and mix.
- Separate soil components using sieves with different sized holes; you might find stones, grains of sand, finer soil particles and decaying plant matter.
- Invent and make mud pie recipes e.g. sandy porridge, or clay pastry over a stone pie. Sprinkle sand on sweet mud pies, add twigs or leaves to decorate and bake in your cardboard box oven!
- Discover the qualities of different soil types. Does clay or sand have the smallest particles? Which one sticks together and holds water better?

JAM JAR SOIL EXPERIMENT



Discover more about what soils are made from.

What you need

A jam jar, water and soil.

What you do

- Fill a glass jar about one third full with soil and then top up with water.
- Mix well with a stick. Leave until the layers settle and the water is clear again.
- Larger stones and sand particles will drop to the bottom, then the smaller soil and clay particles, with organic matter floating on the top.
- How many different types of layers is your soil made of?

MAKE A WORMERY



Make a simple wormery to discover how earthworms mix and aerate the soil, dragging organic material down from the surface.

What you need

A large glass jar with a lid, sand, soil, earthworms, dead leaves, grass, veg/fruit peelings, an old towel.

What you do

- Go outside after the rain, gently collect a few earthworms in a bucket of damp soil.
- Put alternate layers of sand, moist soil, and dead leaves in the jar. Leave a 5 cm/2 inch space at the top.
- Add the earthworms and some dead leaves, grass and a few vegetable or fruit peelings on top.
- Carefully pierce a few small holes in the lid, then use it to close the jar. Worms only work in the dark so cover the wormery with an old towel and put it somewhere cool.
- Go back after a week or so; what have the earthworms done? Can you see where they have burrowed? What has happened to the leaves?
- Release the earthworms back to where you found them.

SCIENCE*

- Soil provides ecosystem services critical for all life on earth; providing water and nutrients to nourish microorganisms, plants, and animals.
- There are different soil types and components, e.g. clay, sand, stones and organic matter. [Learn more about what soil is made of.](#)
- Earthworms are 'soil engineers', according to the Soil Association. They improve soil structure and break down dead organic matter to release nutrients. This enables plants to take up oxygen, water and nutrients more easily. [Discover the STEM Learning education pack that will help you learn more about soil and earthworms.](#)

*Click the hyperlinked texts for useful resources and additional information.

Safety tips

- Always wash hands after playing with soil.
- Handle earthworms with care.
- Get adult help when handling sharp tools.