

Dirt Discovery

Plain old dirt is a very important ingredient in growing plants in a garden. Do you know what the dirt around your house is made of? What is in your dirt has a big impact on how well plants grow in it.

Dirt is made up of two types of material: **minerals** and **organic matter**. **Minerals** come mostly from rocks that get ground up into very tiny pieces due to the forces of nature, like wind and water wearing them away. **Organic matter** is made from living things like leaves, plants and insects that die and decay. For example, when dead leaves fall apart in the dirt, they feed the soil and help new plants grow.

The gardener's word for dirt is *soil*, and the texture, or feel, of the soil can be clay-like, sandy, silty (a very fine texture), loamy (a combination of several soils) or maybe even rocky. Some soils are good for plants. Some soils are less good. How can you know if your soil will grow things?

Do:

1. Cover your work table, or do this activity outside.
2. Fill a clear jar halfway with dirt you dig up in a flower bed or garden spot. (Be sure to ask permission before you dig!) Dig down at least 5 or 6 inches deep. Pick out any big roots, sticks or other stuff.
3. Fill the jar up with water and screw the lid on tight.
4. Shake the jar briskly for two minutes, so that all the dirt gets wet and is swirling around in the jar.
5. Set the jar down and go do something else for at least a half hour.
6. Come back and see what happened inside your jar. Then use the jar on the next page to draw a picture of your jar.

Approx. Time: 45 minutes

Materials:

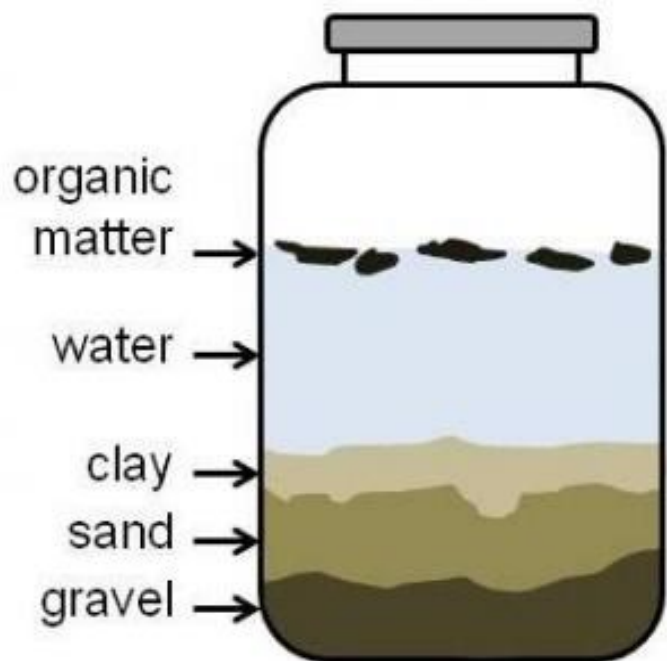
- Waterproof table cover
- Jar with a tight-fitting lid
- Spoon
- Dirt
- Pitcher of water
- Crayons or colored pencils
- Paper towels
- Magnifying glass



Soil Guide

- **Sandy soil** – if your soil is sandy, you will notice particles sinking and forming a layer on the bottom of the jar. The water will also appear fairly clear. Gravel is the only thing that will sink faster than sandy soil.
- **Clay soil** – when your water remains cloudy with only a thin layer of dirt particles that settle out of the water, then you have clay-like soil. The water stays cloudy because it takes longer for the clay particles to settle.
- **Silty soils** - your water may stay cloudy with silty soil as well. Clay and silty soils do not drain well and may cause soggy plant roots and very hard soil when it dries out.
- **Peaty soil** – if you have a lot of stuff floating on the surface, then your soil may be peaty. This also results in somewhat cloudy water, though not as murky as with clay soil. This soil has a lot of organic matter in it, and that's good, but it might stay too wet.
- **Loamy soil** – this is the soil that is best for growing most plants. If you're lucky enough to have loamy soil, then you will notice clear water on top of several layers forming in your jar.

Use this picture to help you decide what type of soil you have. If your jar doesn't form layers, let it sit overnight and see if there are layers the next



Use this jar to draw what you see!

Observe the layers in the jar and see what you can tell about them:

How many layers are there?

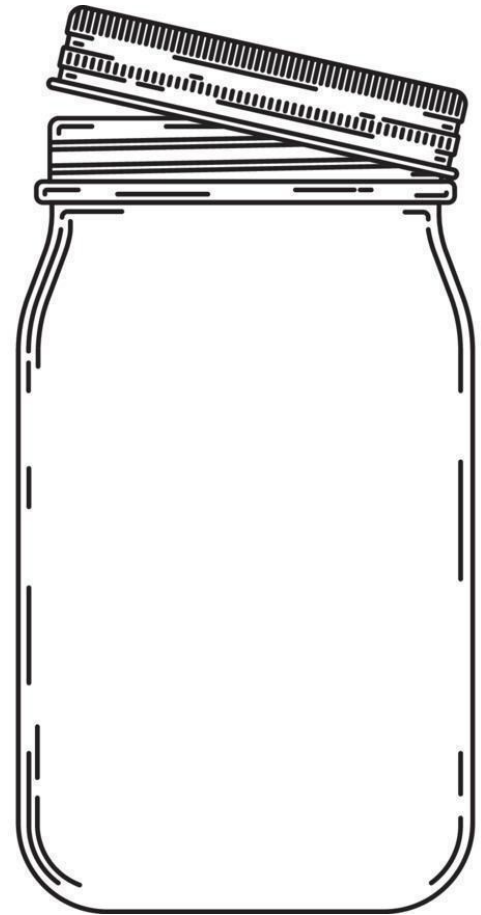
Which layer is made of the biggest particles?

Which layer is made of the smallest?

Why do you think that is?

Is the water cloudy or clear?

Why do you think that is?



Look more closely at the layers and what they are made of. Use a spoon to skim off anything floating in the water and place it on a paper towel.

SLOWLY and CAREFULLY pour off the water on the top and scoop out the grains of each level onto paper towels.

Use the magnifying glass to take a closer look at each kind of soil. How are the soils different?

Use the soil guide on the next page to decide what kind of soil you have. Would your soil be good for growing plants? Why or why not?

Share pictures of your dirt experiment on social media with the hashtag **#MCMuseumFromHome**.