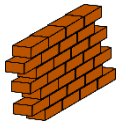
Soil types

Soil is the top layer of the Earth where plants grow. It isn't just dirt, soil is a super important part of how our world works! The type of soil controls how much water the soil holds. This is important because it decides which plants can grow in that soil. If it's too wet roots can rot, but if it's too dry plants get thirsty. Soil type also controls how healthy the soil is, or how many nutrients it holds. Nutrients are like vitamins for plants. This means that farmers test the soil to know what crops will grow best. Some soil is perfect for growing rice, whereas other soil is better for wheat or potatoes. Overall, soil keeps the Earth happy. This is because healthy soil helps tree and plants grow, keeps rivers clean, and helps stop flooding and erosion (when soil washes away).

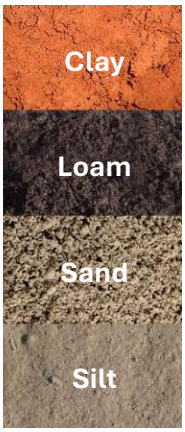
There are different types of soil, and each one feels different and works better for different plants. Let's explore the main types. **Firstly, sandy soil feels g**ritty and dry, like beach sand. There are large spaces between the soil which means water drains through it quickly, so it doesn't stay wet for long. This makes it **good for p**lants that don't need much water, like carrots or cactus. The second main type of soil is clay soil. This feels sticky and smooth when wet, but hard when dry. This makes it ideal for making bricks. Clay soils have lots of overlapping particles meaning they hold water very well. But they can get too soggy if there is lots of rain. Plants like roses or vegetables like clay soils, because it means the soil is more likely to stay wet. Thirdly, you get silty soil. This is in between sandy and clay soils. It feels soft and soapy, smoother than sandy soil. Silty soils holds water better than sand, but can get packed tightly. This means it is good for plants that like moist soil, like lettuce or ferns. Lastly, there is loamy soil. This is the best one for growing plants because it is a mix of sand, silt, and clay, which makes it soft and crumbly. It holds water just right and has lots of nutrients This makes it ideal for growing almost all garden plants.



Not all soil is the same. We get different types of soil because of how they are made and what they are made from. Soil starts as rock! Over many, many years, wind, rain, sun, and ice break big rocks into tiny bits. These tiny bits become the particles in soil: sand, silt, or clay.

Soil scientists (or pedologists) use two main test to find the type of soil. The first is the touch or squeeze test. To do this, dig up some soil, add a tiny bit of water to it, and then squeeze it into a ball. Open your hand to look at how the soil behaves:

- If it makes ball and keeps it shape when you open your hand, you have clay soil. It feels a bit like playdough.
- If it crumbles a bit when you squeeze it but still makes a ball shape, you have silty soil. If feels like flour.
- If it's very gritty (like sugar) and falls apart quickly you have sandy soil.
- You can also have a mix of these, this will be loamy soil.



A different test to find out soil type is the jar test. Simply add soil to a jam jar (or similar), till its half full. Fill it up with water, close the lid, and shake will. Leave it overnight. The next day you should see layers. The bottom layer will be sand because it's heavy. Then you get silt in the middle and clay at the top layer. The floating stuff is bit of plants (organic matter).

Try work out the types of different soils around your school. Just dig down a little bit (using a trowel) so there isn't any grass or plants in your sample. Think about why some of these difference might occur.