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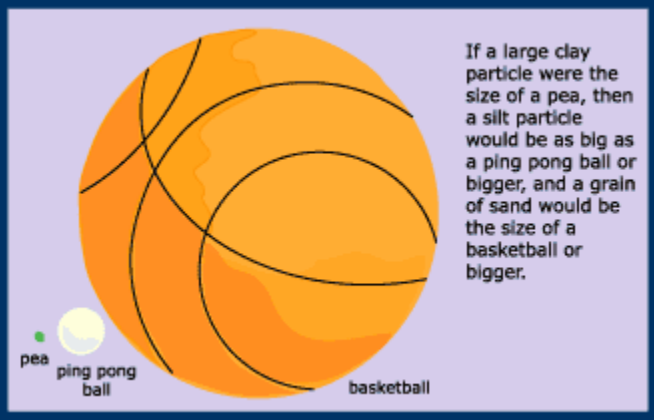
Soil Texture

SOIL PARTICLES

Soil is made up of particles of rock that have broken down over time. These particles vary in size. They are classified into three sizes—sand, silt, and clay. Soil texture is a measure of how much sand, silt, and clay a soil contains.

Soil texture is important because it determines how fast water drains through a soil. It also determines how much water a soil can hold, and can be used by plants.



If a large clay particle were the size of a pea, then a silt particle would be as big as a ping pong ball or bigger, and a grain of sand would be the size of a basketball or bigger.

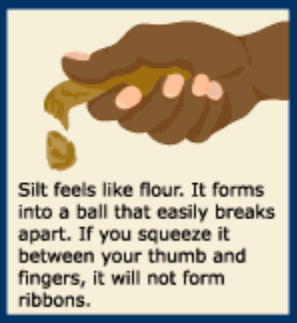
CLAY

Clay is less than 0.002 mm in diameter. Clay particles are extremely small, and can be seen only through an electron microscope.

Clay feels sticky when wet. It easily forms into a ball and a ribbon at least 5 cm long.

SILT

Silt is 0.002-0.05 mm in diameter. You can see silt particles only through a microscope.



Silt feels like flour. It forms into a ball that easily breaks apart. If you squeeze it between your thumb and fingers, it will not form ribbons.

SAND

Sand is the largest size rock particle in soil—0.05-2 mm in diameter. You can see sand particles without a microscope.

Sand feels gritty. You cannot make wet sand form a ball that holds together.

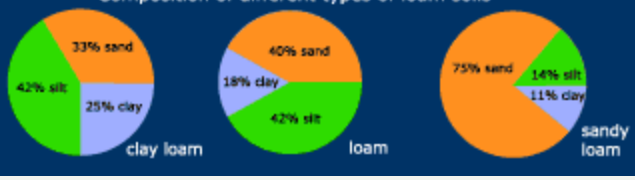
Water drains very slowly through clay soil. Therefore, clay soil remains saturated after a heavy rain. When this happens, there is little air in the soil, and plant roots cannot find oxygen. Clay soils can be difficult for gardeners to plant in.

Sandy soils have lots of air spaces between particles, so water drains quickly through these soils. Because they do not hold water and nutrients very well, you must water and fertilize sandy soils frequently.

LOAM

Loam is a mixture of sand, silt, and clay particles. It is ideal for gardeners. Usually, loam is easy to dig, and is neither too dry nor too wet during the growing season.

Composition of different types of loam soils



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