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Factsheet: Soil Components

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What are the different characteristics of soil components?

Sand	Silt	Clay
Forms free draining soils	Forms soils which can be hard to drain	Forms soils which readily become waterlogged
Water runs through it quickly	Holds on to a moderate amount of water	Becomes heavy when wet
Largest mineral particle size - between 2mm and 0.06mm in diameter	Medium mineral particle size - between 0.06 and 0.002mm in diameter	Smallest mineral particle size - diameter less that 0.002mm
Feels gritty to touch	Feels soapy or silky	Feels smooth when dry and sticky when wet
Makes a rasping sound when rubbed together	Makes a squeaky sound when rubbed together	Makes very little sound when rubbed together
Particles do not stick together and cannot be made into a ball	Particles don't easily hold together - a ball of them breaks easily	Particles stick together and are easy to make into a ball
Soils warm quickly in Spring, but cool quickly in Autumn	Soils warm and cool more quickly than clay, but less quickly than sand	Soil takes a long time to warm up in Spring and to cool down in Autumn
Forms soils which cannot hold onto nutrients	Forms soils which can only hold limited nutrients	Forms soils which can hold onto nutrients
No swelling or shrinkage in the soil	Limited swelling or shrinkage in the soil	Soil swells when wet and shrinks when dry
Can be used to make glass	Makes very fertile soils	Can be used to make bricks or pots

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Organisms	Organic Matter
Are responsible for recycling materials	Can increase the amount of air held in some soils
Are responsible for the rotting of dead material	Releases nutrients slowly as it rots
Can produce 20-40 tonnes of casts per hectare	Sticks to soil particles to help form crumbs
Examples include insects, bacteria and earthworms	Examples include manure, straw and peat
Bury stones and leaf litter	Improves water-holding capacity of soil
Convert plant and animal debris to minerals and humus	Creates an open soil structure
Examples include fungi and plant roots	Examples include leaf mould and compost
Absorb water from soil causing it to dry and clays to shrink	Can make soils warmer - increasing heat absorption
Help to reduce damaging effects of pesticides	Helps keep nutrients in the soil
Can create channels for the movement of oxygen and water	Are responsible for the dark brown colours of soil