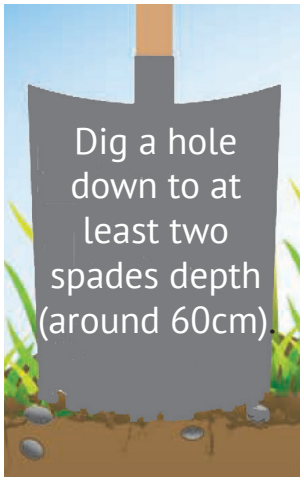
A Garden Organic Factsheet

Know your Soil

Healthy soils lead to healthy plants so getting to know the properties of your soil will give you a much greater understanding of what your plants may need from you. A healthy soil is one that shows high levels of biological activity, is well structured and free draining. Take the time to observe your growing space and see how your soils react to weather conditions such as heavy rainfall or lengthy dry spells.

Soil profile

One way to get to know your soil is by digging a hole in your growing space and identifying each of the distinct layers.



What to look for...

How deep is each section?
Was the soil hard to dig?
What is the texture?
Are there earthworms?
Does the hole start to fill with water?
Does water drain easily if you tip in a bucket of water?

Topsoil, this should be dark in colour and crumbly.

Subsoil, this should be lighter in colour and is usually more compacted.

You might get closer to the bedrock or more likely builders rubble in a UK garden.

Soil texture

This refers to the size of the particles. It is not possible to change the texture of your soils however the texture will give you a good indication of the type of soils you have.

Sandy soils have predominantly large particle size grains, are usually free draining, nutrient poor, warm up quickly and are easy to work.

The best soils fall somewhere in between these two extremes, and are called loams. They have approximately equal parts of sand silt and clay particles to give a good, crumbly, workable soil that also has good water retention and nutrient holding capacity.

Clay soils are sticky, prone to water-logging, cold in spring, difficult to dig, but hold nutrients well.

What to look for...

Grittiness: A measure of the amount of sand present. The greater the amount of sand the more the individual particles will rub together causing a gritty feel which can also be heard if held near the ear. Sandy soils will not form cohesive balls or rings when worked in hand. Grain size between 2mm and 0.2mm.

Smoothness: A measure of the amount of silt. As the silt content increases so does the smoothness or slipperiness, which sometimes makes the soil feel soapy or silky. This is because the silt particles glide or slip over one another.

Stickiness: Plasticity and cohesion are measures of the amount of clay. They become more marked as the clay content increases. The greater the plasticity the easier it is to mould the sample into balls and threads. The surface of the clay also takes on a 'polish' when rubbed gently.

Organic soils: Soils are termed organic when they contain 7.5 - 15% organic matter. Where levels of organic matter exceed this soils are termed peaty. Peat soils are very dark in colour, give no polish and are easily deformed (they will not form rings or balls).

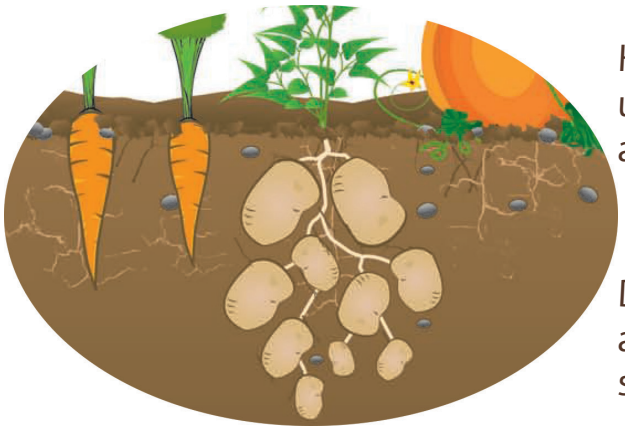
Soil structure

For plants to grow healthy and strong they require water, nutrients and oxygen; all of which are available from a healthy soil. A good structure can be maintained by; not digging the soil when it is too wet or too dry, avoiding walking on the soil, adding organic matter as a soil conditioner, and sowing green manures over winter to protect bare soil.

A good soil structure will unlock each of these elements:

Allows roots to grow

Retains a reservoir of nutrients



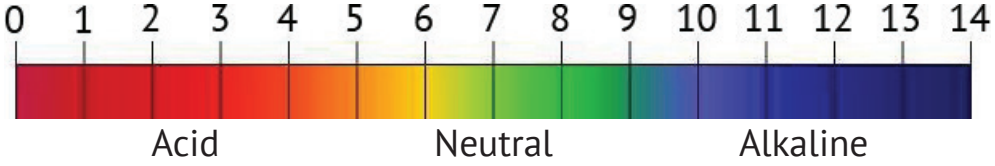
Holds together well under cultivation, wind and rainfall

Drains water well yet also retains water in smaller pores

Soil pH

Most plants grow best in a pH range of 6.5 to 7. This is also the range where most plant nutrients are most freely available for uptake by the feeding roots. Most UK soils fall into this range however there are some variations.

You can test your soil pH using kits available online or from your local garden centre.



Areas of high rainfall, sandy and peaty soils may be distinctly acid from pH 4 to 6.

Areas of chalky and limestone soils may be distinctly alkaline from pH 7 to 8.

Lowering pH for 'acid loving' plants is hard to achieve, it is often easier in pots using ericaceous compost or applying a pine needle mulch.

To raise the pH of your soil, ground limestone can be applied in the autumn at a rate of around 250g per square metre.