

Module 03

Understanding the properties of soil and the importance of soil biology

For outcome 1 (assess the physical characteristics and pH of soil) you are required to:

Demonstrate skills by	How to evidence (Note: you may put more than one piece of evidence on a form)
examining a soil profile to assess the horizons and structure.	Use form 3 Candidate's Performance of Activities. Dig a soil profile pit or examine a soil profile. Use the form to describe what you did and attach image(s) of the profile.
carry out a soil texture test	Use form 3 Candidate's Performance of Activities. Carry out a soil texture test either by 'the suspension method' or by the 'feel method'. Use the form to describe what you did and attach the results of your test.
carrying out a soil pH test	Use form 3 Candidate's Performance of Activities. Carry out a pH test using any suitable test equipment capable of giving you a reliable result. Use the form to describe what you did and attach the results of your test. An image would also be useful to show the result.

Demonstrate knowledge by	How to evidence (Note: you may put more than one piece of evidence on a form)
explaining why knowledge of soil characteristics is important to the organic gardener	Use form 4 Written Evidence Recording Sheet Write a short statement making it clear why knowledge of the soil's characteristics is important to the organic gardener
defining the terms 'soil profile', 'organic matter', 'top-soil', 'sub-soil' and 'parent material'	Use form 4 Written Evidence Recording Sheet Write a short statement defining each of the terms listed.
naming the components of soil and their approximate proportions in a typical soil	Use form 4 Written Evidence Recording Sheet Name each of the main components of soil and give the approximate proportions of each as a percentage. (This could be given in the form of a diagram if preferred).
defining the term 'soil structure'	Use form 4 Written Evidence Recording Sheet Write a short statement defining the term.
explaining how soil structure can be affected by primary and secondary cultivations	Use form 4 Written Evidence Recording Sheet Using bullet points make it clear in what ways cultivation can affect soil structure.
defining the term 'soil' texture'	Use form 4 Written Evidence Recording Sheet Write a short statement defining the term.
stating the physical characteristics of sand, silt and clay soils	Use form 4 Written Evidence Recording Sheet Write a short statement giving the physical characteristics of sand, silt and clay soils.

Demonstrate knowledge by	How to evidence (Note: you may put more than one piece of evidence on a form)
explaining the impact of pH on soil health and plant growth.	Use form 4 Written Evidence Recording Sheet Write a concise account of how pH impacts on both soil health and plant growth.

For outcome 2 (understand the essential role of living organisms in the soil) you are required to:

Demonstrate knowledge by	How to evidence (Note: you may put more than one piece of evidence on a form)
describing the importance of organic matter in soil	Use form 4 Written Evidence Recording Sheet Write a concise account of the importance of organic matter in soil. (Illustrations or diagrams may be a useful addition).
describing the role of soil flora, fauna, fungi and bacteria in soil health and nutrient availability	Use form 4 Written Evidence Recording Sheet Write a concise account of the role of soil flora, fauna, fungi and bacterium in soil health and nutrient availability (Illustrations or diagrams could be used as an alternative to a written description).

For outcome 3 (understand the role of plant nutrients and nutrient cycling) you are required to:

Demonstrate knowledge by	How to evidence (Note: you may put more than one piece of evidence on a form)
listing the major, minor and trace nutrients required for plant growth	Use form 4 Written Evidence Recording Sheet Provide a list naming the major, minor and trace elements required for plant growth.

Demonstrate knowledge by	How to evidence (Note: you may put more than one piece of evidence on a form)
describing the symptoms of major nutrient deficiencies and excesses	Use form 4 Written Evidence Recording Sheet Describe in writing or by using coloured drawings deficiencies of the following; nitrogen, potassium, sulphur, calcium, magnesium and phosphorus. State what an excess of each might look like.
describing the effects of pH on nutrient availability	Use form 4 Written Evidence Recording Sheet Describe in writing or by using a diagram the effect of pH on nutrient availability.
outlining the carbon and nitrogen cycles	Use form 4 Written Evidence Recording Sheet Using diagrams provide just the main details of both the carbon and nitrogen cycles.

Once you have had all of your work assessed you will be ready to take the on-line test.