

## Unit 3

### Soil Preparation

This page describes how to prepare soil for the activities in the Soil chapter of Unit 3.

Prepare six samples of soil according to the following to the following table. The approximate readings of the Soil Texture Triangle (see *Soil 3b: Soil Texture Triangle*) are listed below the proportional ingredients.

Each sample has 1 part peat moss to add organic material to the soil, and one part of gravel. (The gravel is also used in *Soil 2b: Soil Sieves*.)

The percentages below roughly correspond to the soil texture triangle locations for each type. The exact percentages will depend on the quality of the sand, silt, clay, and peat moss that are used.

Material	Sample A	Sample B	Sample C	Sample D	Sample E	Sample F
<b>Common Name</b>	Sand	Sandy-loam	Loam	Silt-loam	Clay-Loam	Clay
<b>Sand</b>	6 parts	3 parts	2 parts	1 parts	1 parts	0 parts
<b>Silt</b>	0 parts	2 parts	2 parts	4 parts	3 parts	0 parts
<b>Clay</b>	0 parts	1 parts	2 parts	1 parts	2 parts	6 parts
<b>Gravel</b>	1 parts	1 parts	1 parts	1 parts	1 parts	1 part
<b>Peat Moss</b>	1 parts	1 parts	1 parts	1 parts	1 parts	1 part
<b>Sand</b>	90%	80%	33%	60%	30%	10%
<b>Silt</b>	5%	10%	33%	20%	45%	10%
<b>Clay</b>	5%	10%	33%	20%	35%	80%

Crush the peat moss with a mortar and pestle (or with your hands) before adding it to the mixture. Make sure each sample is well mixed together.

Spread each sample on trays to dry for 3-4 days.

For classroom use, label each sample with the letter only. Students will use a series of test in this lesson to identify the soil types.

Do not be alarmed if soils you have mixed are much lighter in color than the topsoil you are used to finding in your schoolyard. These soils have a lower organic component than most topsoil and are therefore not very dark.

Soil components (silt, clay and sand) can be purchased from science supply houses or from the geology departments of many universities.