

1. Describe two different ecological aspects of soil that can be determined by finding the soil's texture.

- ability of soil to retain water (clay = more water
sand = less water)
- what types of plants/animals might live best in that soil

2. What is the difference between sand, silt, and clay?

sand > silt > clay
(particle size)

50% silt
22% clay
28% sand
or
"Silty loam"

3. If I describe a soil sample as being a "loam", what does that tell you about the soil's texture?

good mix for most plants { There is a mixture of sand, silt, & clay -
with a significant amount of each type }

1. Explain WHY it is necessary to use a color chart to determine a soil's color.

- It helps you identify the soil type

- For consistency – and comparisons

2. Describe two ecological properties of soil that you could infer by looking at the soil's color.

- You can identify certain micronutrients

- You can estimate the amount of organic material – lots of very dark brown/ black

1. Describe one similarity and one difference between centipedes and millipedes; between nematodes and annelids; between springtails and mites.

lots of segments
millipedes: 4 legs/segment
centipedes: 2 legs/segment
mites: 8 legs
s.t.: 6 legs
annelids: segmented
nematodes: not
arthropods - exl. skeletons
jointed legs
no legs!

2. What ecological purposes do soil organisms serve? Describe as many functions as you can think of.

— help break down organic material
— potentially eat pest organisms
— add organic material (poop)
— create structure
(clumps / pathways)
↑
nutrient/
water banks

3. Why did we use a light bulb in the Burlese Funnel set-up? (Why didn't we just leave the funnel open to the daylight?)

The light bulb added heat and removed moisture —
driving the organisms downward

1. In the experiment we did in class, it appeared that the CV soil mixed with sand had a lower water holding capacity than the CV soil on its own. Why do you think this is true? (Hint - the soil texture has everything to do with it!)

Sand doesn't hold that much water!

When you mix sand into other types of soils, they'll hold less water.

2. Why is soil water content such an ecologically important factor to consider?

water is critical for plants and animals

3. Suppose you have a sample of soil that you collected from the Noyes property. You put it in a Petri dish that has a mass of 47.2 g. You find that the wet soil and the Petri dish together have a mass of 116.1 g. Then, you put the soil in a drying oven for 48 hours. After drying, the soil and the Petri dish together have a mass of 96.2 g. What is the water content of the soil?

(a) Mass of Petri: 47.2 g

(b) Mass of wet soil & Petri: 116.1 g

(c) Mass of dry soil & Petri: 96.2 g

$b - c \rightarrow$ mass of water: $\frac{19.9 \text{ g}}{49 \text{ g}} = 0.41 \times 100 =$

$c - a \rightarrow$ mass of dry soil: 49 g

41%

41g water for every 100g of dry soil