

The habitats since
they receive little
rainfall. in



**ASSIGN
BUSTER**

The consistency and texture of soil have a direct relationship with one another. Texture is the ratio of sand, silt, and clay in the soil. Consistency is the degree at which soil can resist pressure.

With that, the texture determines the consistency of the soil. For example, Soil that is high in sand is usually loose when it is dry or moist, and both nonsticky and nonplastic when wet. A more loamy soil will typically be softer, friable, nonsticky, and nonplastic. But, as clay content increases, soil becomes harder, firmer, stickier, and more plastic. The consistency of the soil can affect the plants based on the conditions the environment goes through like water and wind. An area with a lot of wind with a good soil consistency does not need plants to have roots that are lengthy and put in place well; however, a windy area with a loose soil consistency would require plants to have lengthy and sturdy roots to make it in the wind. The ability of water to go through the soil helps in the development of plants.

For example, soil that is hard when dry is resistant to root penetration. Also, soil that is sticky and plastic does not drain well and seems to disconnect air penetration when wet. The desert habitat leached the nutrients most quickly. Despite the fact that desert soil allows water to drain faster, it receives less rainfall than most other habitats. Temperate rainforests receive more rainfall, but the soil is composed of more organic material, which replenishes lost nutrients. Because of the high rainfall and level of weathering, soil in temperate rainforests tends to be more clayish, which in turn reduces the permeability of the soil.

Prairies, rainfall wise, fall in the middle of deserts and rainforests. Rainy summer storms expose prairies to a decent amount of nutrient leaching, but these nutrients are replaced by an abundance of decomposing organic material. The habitats that have the greatest potential for groundwater contamination will have relatively low amounts of clay. With this in mind, the temperate rainforest cannot be the answer. The desert habitat leaches nutrients and chemicals the fastest, but usually there are not many nutrients found in the desert soil. Prairie habitats are made up of mainly farmland in which many pesticides have been added within the soil for fertilizer. Deserts tend to have a larger C horizon than other habitats since they receive little rainfall. In addition, the parent bedrock of the desert undergoes little weathering.

This is why there is more parent rock in the C horizon. The lack of rainfall implies that few minerals are leached from the upper horizons to the lower. With low nutrient content, desert soils also experience little biological weathering. Combined, these conditions result in a soil profile with similar A and B horizons.

Based on percentages, structure, texture and consistency it was determined that the unknown soil sample was sandy loam. The main determining factor of which soil it was was tested from the soil texture triangle. This utterly ensured that the soil found right outside Colts Neck High School was in fact sandy loam.

Sandy loam is a type of soil used for gardening. This soil type is normally made up of sand along with varying amounts of silt and clay. In that, the

hypothesis made previous was incorrect because it stated that the soil would be a silt loam. One source of error may have been the test to determine the soil's composition. The chart that was looked at was not as descriptive as it could have been which in turn made determining the composition easier to make a mistake and arrive at the wrong result about the quality of the soil.

Also, this was the only test which does not help with accuracy at all. When recording the permeability, only one trial was done. Having multiple trials and taking an average would help provide a more accurate permeability. From analyzing three different habitats, it was determined that the desert habitat leached the nutrients most quickly. This in fact matches with the hypothesis that the desert will drain the water the quickest because desert ecosystems have a much higher yield of sandy based soil, which is much more porous than any other type. The desert soil has less clay in it -which is made up of very fine particles which are so densely packed that they will form tight, impenetrable layers that may not allow adequate drainage.

These heavy clay soils may become so waterlogged that they will not retain a decent amount of air supply for plants. Heavy clay soils will hold on to water for a very long time, therefore, these soils are the most known to leave a garden left with standing water. But sandy based soils, on the other hand, have plenty of space between sand particles for water to flow through. A source of error may have resulted from uneven quantity of soil and solution measured in each cylinder. If the wrong amount of measurements were mixed, this would create a different solution and therefore deter from the accurate answer.