

# [Soil pollution assignment](https://assignbuster.com/soil-pollution-assignment-essay-samples-6/)

Soil is a natural body consisting of layers (soil horizons) of mineral constituents of variable thicknesses, which differ from the parent materials in their morphological, physical, chemical, and mineralogical characteristics. [l] Soil is composed of particles of broken rock that have been altered by chemical and environmental processes that include weathering and erosion. Soil differs from its parent rock due to interactions between the lithosphere, hydrosphere, atmosphere, and the biosphere. 2] It is a mixture of mineral and organic constituents that are in solid, gaseous and aqueous Soil is commonly referred to as dirt. Soil particles pack loosely, forming a soil structure filled with pore spaces. These pores contain soil solution (liquid) and air Accordingly, soils are Often treated as a three State system. [6] Most soils have a density between 1 and 2 g/com. [7] Soil is also known as earth: it is the substance from which our planet takes its name. Little of the soil composition of planet Earth is older than the Tertiary and most no older than the Pleistocene. 8] In engineering soil is referred to as resoling, or loose rock material. Soil forming factors Surface-water-glee developed in glacial till, Northern Ireland Soil formation, or pathogenesis, is the combined effect of physical, chemical, biological, and anthropogenic processes on soil parent material. Soil genesis involves processes that develop layers or horizons in the soil profile. These processes involve additions, losses, transformations and transactions of material that compose the soil.

Minerals derived from weathered rocks undergo changes that cause the formation of secondary minerals and other compounds that are variably soluble in water, these constituents are moved (translated) from one area of the soil to other areas by water and animal activity. The alteration and movement of materials within soil causes the formation of distinctive soil horizons. The weathering of bedrock produces the parent material from which soils form. An example of soil development from bare rock occurs on recent lava flows in warm regions under heavy and very frequent rainfall.

In such climates, plants become established very quickly on basaltic lava, even though there is very little organic material. The plants are supported by the porous rock as it is filled with nutrient-bearing water which carries, for example, dissolved minerals and guano. The developing plant roots, themselves or associated with myocardial’ fungi,[9] gradually break up the porous lava and organic matter soon Climate Darkened topsoil and reddish subsoil layers are typical in some regions. Soil formation greatly depends on the climate, and soils from different climate zones show distinctive characteristics. 1 3] Temperature and moisture affect weathering and leaching. Wind moves sand and other particles, especially in arid regions where there is little plant cover. The type and amount of precipitation influence soil formation by affecting the movement f ions and particles through the soil, aiding in the development of different soil profiles. Seasonal and daily temperature fluctuations affect the effectiveness of water in weathering parent rock material and affect soil dynamics. The cycle of freezing and thawing is an effective mechanism to break up rocks and other consolidated materials.

Temperature and precipitation rates affect biological activity, rates of chemical reactions and types of vegetation cover. Biological factors Plants, animals, fungi, bacteria and humans affect soil formation (see soil abominate and soothsayer). Animals and micro-organisms mix soils to form burrows and pores allowing moisture and gases to seep into deeper layers. In the same Way, plant roots open channels in the soils, especially plants with deep taproots which can penetrate many meters through the different soil layers to bring up nutrients from deeper in the soil.

Plants with fibrous roots that spread out near the soil surface, have roots that are easily decomposed, adding organic matter. Micro-organisms, including fungi and bacteria, affect chemical exchanges between roots and soil and act as a reserve of nutrients. Humans can impact soil formation by removing vegetation cover; this removal promotes erosion. They can also mix the different soil layers, restarting the soil formation process as less-weathered material is mixed with and diluting the more developed upper layers.

Some soils may contain up to one million species of microbes per gram, most of those species being unknown, making soil the most abundant ecosystem on Earth. [14] Characteristics Soil color is often the first impression one has when viewing soil. Striking colors and contrasting patterns are especially memorable. The Red River Mississippi watershed) carries sediment eroded from extensive reddish soils like Port Silt Loam in Oklahoma. The Yellow River in China carries yellow sediment from eroding loess soils.

Molehills in the Great Plains are darkened and enriched by organic matter. Pods in boreal forests have highly contrasting layers due to acidity and leaching. Soil color is primarily influenced by soil mineralogy. Many soil colors are due to the extensive and various iron minerals. The development and distribution of color in a soil profile result from chemical and biological weathering, especially redo actions. As the primary minerals in soil parent material weather, the elements combine into new and colorful compounds.

Iron forms secondary minerals with a yellow or red color, organic matter decomposes into black and brown compounds, and manganese, sulfur and nitrogen can form black mineral deposits. These pigments produce various color patterns due to effects by the environment during soil formation. Aerobic conditions produce uniform or gradual color changes, while reducing environments result in disrupted color flow with complex, mottled patterns and points of color concentration.