**Describe the processes that affect soil characteristics**

There are a number of processes that affect soil, I will be looking at Humification, Calcification, Salinisation, laterisation, podzolisation and leaching in my essay. As well as these processes weathering is a key element in making soil. Weathering is responsible for breaking down the parent rock or loose regolith into mineral particles. Weathering can be in one of two forms; physical or chemical. Physical such as freeze thaw action help break up the rock while chemical weathering such as carbonation and oxidation dissolve the rock.

**Humification and Calcification;** can be found acting in temperate region such as Europe where the temperature are mild with moderate rainfall. These soils have a ***structure and texture*** that is crumb like and loamy; this means soils are well aerated and drained. Black soils (chernozems) are found in these regions with lush grass vegetation supplying it with nutrients, it is here that calcification can be seen working. Calcification happens as the water passes through the soil washing calcium down to form a brown coloured horizon B. This supplies essential nutrients for the soil and means that chernozems found in the Ukraine are among the most fertile soils. Humification can also be seen taking place in temperate regions though it happens faster in hot wet regions like the equator. Brown soils are an example of a soil that undergoes Humification. Brown soils can be found on lowland areas in Ireland. Brown soils have decedious vegeation are supplied annually with a rich leaf litter. This leaf litter is broken down into Humus due to a rotting procces known as **Humification** where the leafs are broken by the bacteria and micro organism into a substance that can be used by plants.Both these areas have high ***organic content*** and produce fertile soil. Areas with good humification and calcification generally have darker ***colour*** soils due to the amount of humus in the soil.

**Salinisation and Laterisation;** occur in hot regions like arid deserts or tropical rainforests. Salinisation is found in Deserts where temperatures are high and preceipitation levels are low. These soils have a ***sandy texture with low water retention***. The climate here is so hot and evapouration is so high that moisture is brought to the surface by capillarly action and evapourated quickle and leaves behind dissolved salts on the upper layers of the soils that they have gotten from weathered rock. Salinisation can be detramental to land and is not ideal for agriculture. Laterisation takes places in hot, wet regions like the equator. Soil thats have undergone have a distinct red colour and are know as latasols. Heavy rainfall results in heavy leaching of the minerals in the soil, all except iron and alluminum. This iron undergoes oxidation(reaction with oxygen) to give it a red ***colour***. This build up of iron due to weathering and oxidation is known as laterisation.

**Leaching and Podzolisation** occur in areas that receive heavy rainfall like the equator or the west of Ireland. These soils have ***high water retention*** like podzols, and the ***structure and texture*** of these soils are often plate like and clay. Leaching takes places when rainwater carries soluble minerals and organinc matter down through the soil profile away from the A horizon, which can result in the soils ***Ph levels*** becoming more acidic and lose in fertility as a result. If leaching is particularly bad it can lead to the creation of a hardpan which is an impermeable layer of minerals that can lead to the soil becoming waterlogged such as podzols found in the west and upland areas of Ireland. Podzols have a platey structure that are poorly drained. Because they are not ideal for agriculture coniferous forests are often planted in these areas which result in **little humus** for the soil. Any humus they do receive is mainly **acidic**. Podzols undergo a process known as podzoliation where by they experience heavy leaching with iron and aluminium being dissolved by acidic water leaving the A horizon inferile and grey in ***colour.*** These soils usually have a low **organic content** due to the types of vegetation in these areas- coniferious forests