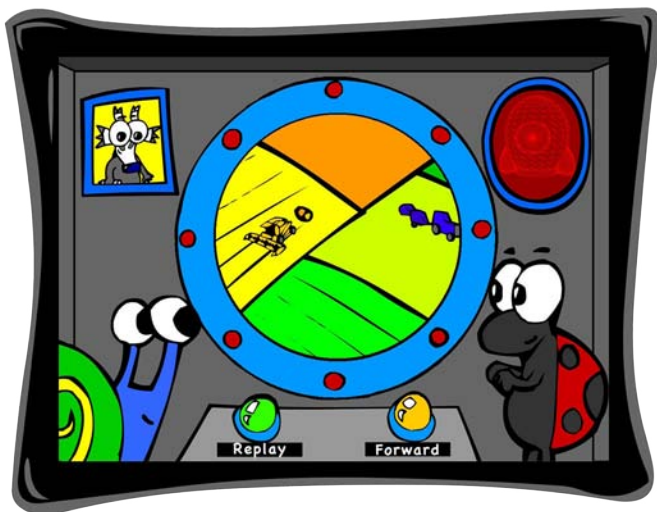




# Topic 2: Why Does Soil Matter?

**Introduction** Soil is extremely important as it supports several vital functions allowing life on earth as we know it to develop and prosper. There are many reasons why soils matter, why we should appreciate soils and why we need to look after them. Let's try and learn about them and have fun doing so.



**Soils and Farming** Farming the soil to produce crops has gone on for as long as man has been on the earth. We rely on the farmers of today to till the soil, plant seeds and then to harvest the crop that grows. This annual sequence of events is the source of most of the world's food. In the more developed parts of the world, farming the soil has become very intensive, using fertilisers, more mechanisation and chemicals to control pests, so as to produce higher yields of crops and keep pace with a rapidly growing population.

**Soils and Forestry** Soils, together with climate, play a major part in producing the world's forests. These forests are the source of timber and fuel for mankind and home to a wide range of plants and animals. The wide range of soils and climate across the world leads to a wide range of trees needed to meet the needs of the world population. It is an amazing to think that the soils in the hot moist climates of the tropics are able to sustain such a dense, luxuriant forest and maintain its growth year after year.

When next you are in a woodland, think about the soil and how it helps all the trees to grow.



When next you visit a farm ask the farmer about his soils and how they are used to produce crops, which eventually become our food.





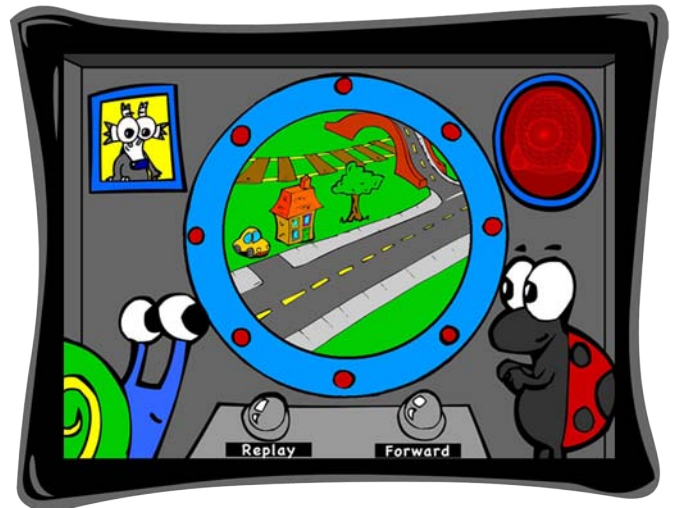
**Soils and the Countryside** Soils play a major part, together with climate, in the wide range of flowering plants that occur in the world. The nature of the soil at any point in the landscape is important in determining what will grow and where it will grow. Thus we have plants that love chalky soils and those that do not; we have plants, such as heather, that like the wet, acid soils of the uplands, and we even have flowering plants in which the colour of the flower depends on the soil in which it grows.



When next you are out walking in the countryside look at the vegetation and appreciate that soil is one of the major reasons for it.

## Soil as Foundations for Buildings

All our towns and cities over the years have been constructed on or in the soil. The nature of the soil plays an important part in ensuring the stability of all these buildings. Some soils can be a problem to build on. For example, some clay soils swell when wet but shrink when dry. This change can cause a problem for some buildings. Increasingly dry summers have caused a problem for the structures of some buildings because of this. It is important to realise that when we build on soils they are unlikely ever to be used for other purposes, such as farming, ever again.

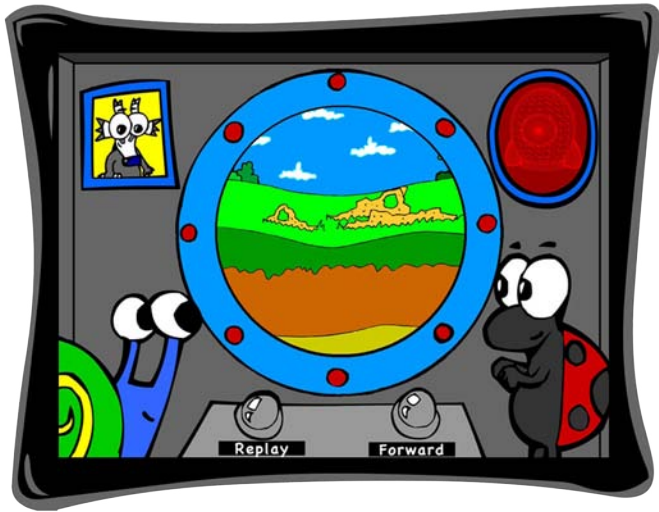


Think when next you enter the town that much of this was once farmland. We must ensure we do not use up too much of our precious soil for building so that one day we cannot produce enough crops.



**Soil and our Water Supply** Soils help to regulate the flow of water from the moment that rain-water reaches the soil surface. Some will flow over the surface, some will enter the soil and be retained and some will flow almost straight through to the aquifers below. Much of the water reaching the soil will be retained in the soil where it can be used by the plants that grow in the soil and by the organisms that live in the soil. Soils can also act as a filter, helping to clean up the water before it flows through to the lakes and rivers.





## Soils as a Preserver of Our History

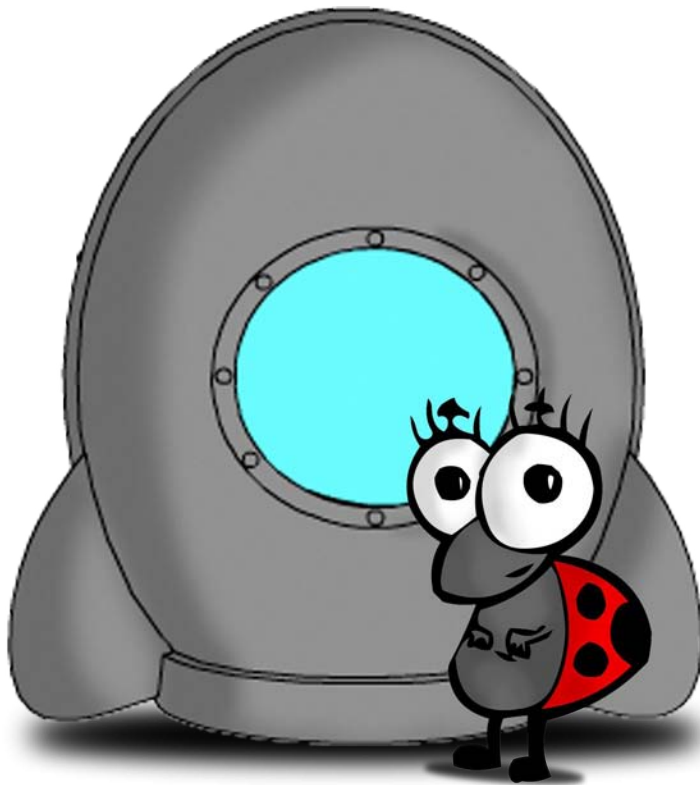
Over many centuries the soil has acted to preserve historical objects within it. By digging into the soil it is sometimes possible to unearth remains of previous generations. Much information can be obtained on how previous generations lived by excavating the soil. Thus many of the Roman remains in our museums today have come from excavating the soil. Analysis of the soils in which the archaeological remains occur can also tell us much about the diet of the people, the crops they grew and the vegetation that occurred in that period.



It is estimated that there will be billions of organisms in just a teaspoonful of good soil!



We must not forget that the soil is very important as a home to millions of organisms that play a vital part in the use that can be made of soil.



Soils also play an important part in modifying pollutants that enter the soil. Thanks to the many organisms, the soil is able to 'clean up' many pollutants that are spilled on its surface.

There is currently much concern that the climate appears to be changing. The soil stores huge amounts of carbon in its organic matter. How this stock of carbon is managed can greatly affect the rate of climate change.

It is important to realise that soils that are built upon are lost to other uses for ever. Currently, the spread of towns and cities swallows up about 5,000 hectares each year, the equivalent of a new city the size of Norwich.

