




## Learning Scientific Skills Outside the Classroom

### Scientific Skills

Predicting	Observing	Recording
Country of Origin	Suggested Age Range	Suggested Theme
 UK	6 - 7	Rocks
Location outside the classroom	Benefits of using this location	
School grounds	Children can collect soil samples from different locations within the school grounds	
Learning Objectives – Scientific Skills	Learning Objectives - Knowledge	
To predict what they think they will find in soil To make careful observations of soil from different locations To record their findings using a picture	To know that soil is a mixture of tiny pieces of rock, dead plants and animals, air and water To know that soil is essential for life on Earth	
Key Vocabulary		
Scientific skills vocabulary – predict, prediction, observe, see, record, picture Knowledge vocabulary – soil, rock, dead, plants, animals, air, water, essential, needed, life, Earth, components, parts		
Resources / Equipment		
<ul style="list-style-type: none"> <li>• Equipment to share predictions – white board and pens</li> <li>• Equipment to collect soil samples - trowel/small spade, white observation trays</li> <li>• Equipment for observation and separation of components – magnifying glasses, tweezers, spoons, sieves</li> <li>• Equipment for recording – paper and pencils or a camera to take photographs of images created from the components of soil</li> </ul>		

#### Teaching Activities

**Activity** – Pupils write the word ‘soil’ in the middle of a whiteboard and on the outside write or draw what they know about soil, where do you find soil and predict some items, they think you can find in soil. Discuss their initial thoughts. Clarify difference between soil and mud (soil and water) and raise awareness of living and dead components within soil.

**Explain** – Today they are going to take a closer look at soil and investigate what soil is made of and whether all soil is the same. They are going to dig up soil from different areas in the school grounds and observe the soil closely to see what it is made of.

#### Activity 1: Soil Observation



**Activity** – Children dig up some soil from one area in the school grounds and put it in a white observation tray. Using magnifying glasses, they make careful observations and using sieves, spoons and tweezers they try to separate out the different components they find. They repeat this in a second location. Locations could include a flower bed, next to a path, by a pond, under a tree, in a shady area, in a sunny area or by the playground.

**Record** – Children produce a ‘picture’ which shows the different components they found in the soil in each location.

**Compare** – What did they find in their soil sample? How easy was it to separate the items they found? Were their predictions correct? What did they find in their second sample of soil? What was the same? What was different?

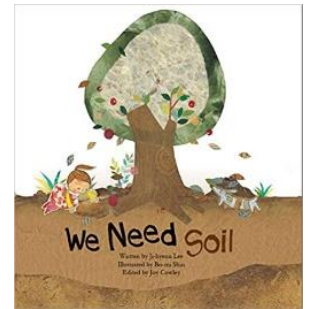


### Activity 2 – Comparing Soil Pictures

**Compare** – Compare the pictures produced by different groups. Do the pictures look the same or different? What does this tell us about the soil in different locations?

**Discuss** – Why do we need soil? Did their soil samples show any examples of the things described in the story? Talk about how some of the things in the soil might be too small to see.

**Share a story** – Read a book - for example 'We Need Soil' by Ji-Hyeon Lee - which describes how many kinds of living things need soil e.g. different creatures live in the soil and the soil contains nutrients that plants need to grow. The story also explains how living things become part of the soil when they die.



### Examples of children's work and teacher comments from country of origin

*This lesson worked well for the pupils to observe what components make up the soil. Making the pictures encouraged them to look more closely at the soil. This activity could be repeated at various intervals throughout the year to observe changes across the seasons e.g., in autumn/winter they would see a higher proportion of leaves decomposing in the soil whereas in the spring or summer they would find more invertebrates in the soil.*

