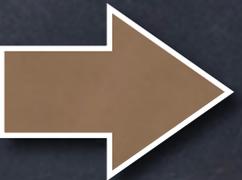


Rocks, Fossils and Soils

Learning Objective:

To explore soil and how it is formed.



What is soil?

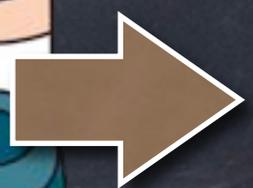
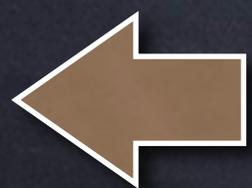
What
is soil used
for?



Today we are going to be pedologists. Pedologists are scientists who study soil.

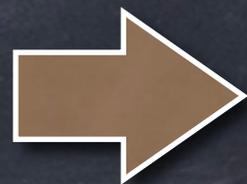
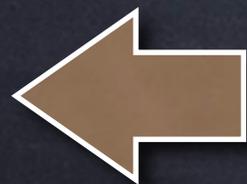
Did you know...?

- There are more micro-organisms (tiny living things) in a handful of soil than there are people on Earth.
- Soil contains lots of nutrients that help plants grow.
- Soil contains 0.01% of the Earth's water.
- It can take 1000 years to form one inch of soil.





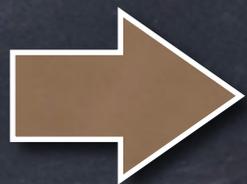
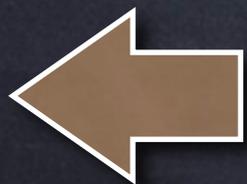
From what we have just read, why is soil so important?



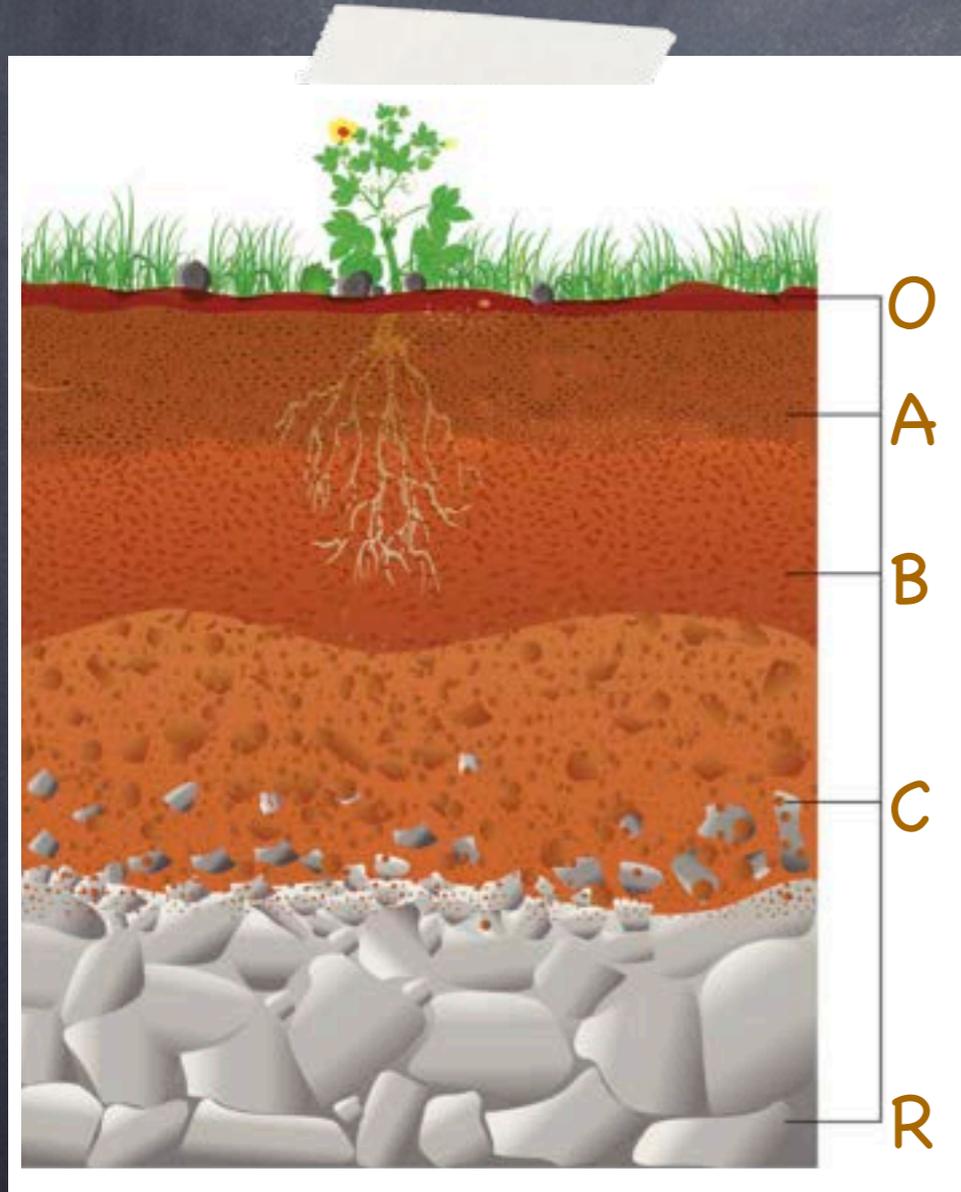


Rock expands when it heats and contracts again when it gets cool. This can cause the the rock to crack which creates tiny fragments. These fragments, as well as fragments broken off through weathering, help to make soil.

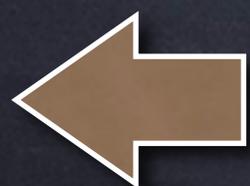
As well as rock, soil is made from decaying organic matter, such as dead plants or animals. Over time, these all combine to make soil. Soil takes a very long time to form.

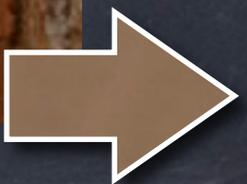


There are different layers of soil. Each layer is known as a 'horizon'.

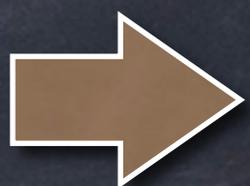
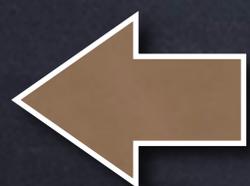


O horizon (Organic layer)	This layer is mainly made from decaying organic matter, such as leaves and animals. It is usually very dark in colour.
A horizon (Topsoil)	This is the layer where seeds germinate and plant roots grow. It is made up of organic matter and minerals.
B horizon (Subsoil)	This layer contains clay and other minerals, such as iron. There is less organic matter in this layer.
C horizon (Regolith)	This layer contains broken-up bedrock. Plant roots cannot grow as far down as this layer.
R horizon (Bedrock)	This bottom layer is made up of large slabs of unweathered rock.

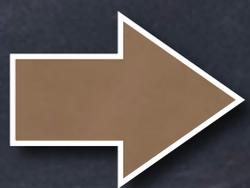
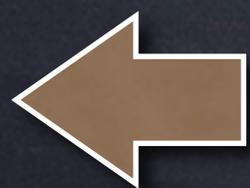




Soil is really important because it provides the nutrients and water that plants need to survive. It also anchors the plants to the ground. Without soil, there would be no plants. Without plants, the animals that eat plants could not survive which in turn would affect the rest of the food chain. Soil helps to keep all the organisms on Earth alive.



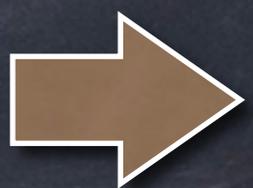
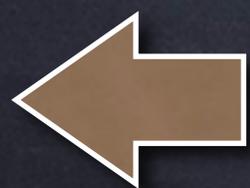
Just like rocks, there are many different types of soil. The three main types of soil are sand, silt and soil. Sandy clay is made up of fine particles and is very grainy. Silty soil is soft and smooth and holds a lot of water. Clay soil has little space between particles and is more compressed. When clay soil dries, it forms very hard lumps.



What differences can you see between these different soil samples?



How could you order these soils?



Can you organise them by colour? Number the samples - 1 for the lightest to 6 for the darkest.

