

Subject:	Science	Title of unit:	Rocks, Fossils and Soils	Year group/term:	Y3 – Autumn 1
Unit intent statement:					
By the end of this unit, pupils will have developed a thorough understanding of how rocks, fossils and soils are formed. They will also be able to describe different types of rocks and soils and how/why they change over time.					
Links to previous learning:					
This unit links well to the History unit children will have studied in Y1 when looking at the life of Mary Anning – both in terms of fossils but also the types of sedimentary rocks Anning would have chipped away at when fossil hunting (limestone and shale).					
This unit will start with a brief retrieval quiz on the following past unit studied by the children:					
Plants – types of trees (Y2)					
Knowledge pupils will acquire (related NC statements in bold):					
Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.					
<ul style="list-style-type: none"> - Know the names of the three different types of rock: igneous, sedimentary and metamorphic. - Know that igneous rocks are formed by the cooling of magma (molten rock) inside the Earth or on the surface. - Know that sedimentary rocks are originally formed at the bottom of bodies of water from the broken remains of other rocks that become joined together because of pressure (e.g. compacted layers of the rock at the bottom of the ocean). <i>Children should be able to name at least one type of sedimentary rock, e.g. limestone, shale, slate, sandstone.</i> - Know that metamorphic rocks are formed by igneous and/or sedimentary rocks that have been subjected to extreme pressure and heat below the Earth's surface. 					
Describe in simple terms how fossils are formed when things that have lived are trapped within rock.					
<ul style="list-style-type: none"> - Know that fossils are the preserved remains or traces of a dead organism and that this is called 'fossilisation'. - Know that fossils are evidence of previous life, but that it is only under very special conditions that an organism becomes fossilised. Most dead organisms do not become fossilised. - Know that fossilisation works particularly well in certain types of sedimentary rock (such as shale, which is made up of clay and is easy to break up into layers) - To know that fossilisation happens as follows: <ol style="list-style-type: none"> 1) The soft parts of an organism's body decompose, leaving the hard parts, like the skeleton, behind. 2) These hard parts become buried by small particles of rock called sediment. 3) As more layers of sediment build up on top, the sediment around the skeleton begins to compact and turn to rock. 4) The bones then start to be dissolved by water seeping through the rock. Minerals in the water replace the bone, leaving a rock replica of the original bone called a fossil. 					
Recognise that soils are made from rocks and organic matter.					
<ul style="list-style-type: none"> - Know that soil is a mixture of tiny particles of rock, humus (dead plants and animals broken down by microorganisms), air and water. - Know about and describe the following types of soil: <ol style="list-style-type: none"> 1) Sandy soil is pale coloured and has large particles. These create lots of small air gaps. Water drains through them easily so it usually feels dry. 2) Clay soil is usually sticky and has small particles. It contains very few air gaps and water does not drain through it easily. 3) Chalky soil is a light brown soil. Water drains through it quickly. 4) Peat does not contain any rock particles. It's made from very old decayed plants and is dark, crumbly and rich in nutrients. 					
During this unit, children should use the knowledge they acquire to work scientifically. E.g:		This unit will end with the following retrieval quiz, 'Rocks, Fossils and Soils':			
<ul style="list-style-type: none"> - Pupils could compare, name and categorise rock samples by looking at colour, weight, hardness and other physical properties. They could carry out tests to see if they are magnetic, permeable, hard or easily split. Children could decide how to collect, record and present data linked to this investigative work. - Pupils could apply their knowledge of fossil formation by creating their own simulation of the fossilisation process using appropriate resources/equipment. 		Questions:	Option A	Option B	Option C
		1. Which rock type is formed by pressure and heat below the Earth's surface?	Igneous	Sedimentary	Metamorphic
		2. Which rock type is formed through the pressured joining of other rock-remains?	Sedimentary	Igneous	Metamorphic
		3. Which rock type is formed by the cooling of magma?	Metamorphic	Sedimentary	Igneous
		4. What is a fossil?	An organism's bones	A replica of an organism's bones	An organism's muscles
		5. Which soil type is light brown and lets water drain through easily?	Sandy soil	Clay soil	Chalky soil
		6. What soil type is sticky and doesn't let water drain easily?	Clay soil	Chalky soil	Peat
		7. What soil type does not contain rock particles and is rich in nutrients?	Chalky soil	Peat	Sandy soil
		8. What soil type is pale, has large particles and is quite dry?	Peat	Sandy soil	Clay soil