

In this unit: Pupils will revisit their learning on properties of rocks and rock formation from year 3. They will explore coal as a fossil fuel and as a sedimentary rock.

Children should already know:

- that there are three different types of rocks that are formed naturally.
- that igneous rocks are formed when molten magma from a volcano cools and mixes with other minerals. Igneous rocks are strong, hard-wearing and non-porous.
- that sedimentary rocks are formed over millions of years when sediment collects and is compressed. Sedimentary rocks are porous and can be easily worn away.
- that metamorphic rocks are formed when some igneous or sedimentary rocks are heated and squeezed. Metamorphic rocks are strong.
- that fossils are the remains of prehistoric life.
- that fossils are formed when a living thing dies and is covered by sediment over tens of thousands of years.
- that fossils tell us about the Earth and about life from millions of years ago.
- that soils are made from pieces of rock, minerals and decaying plant and water.
- that there are layers to soil.

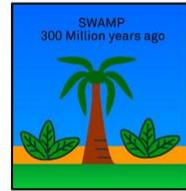
At the end of this unit, children will know:

- that coal is created when giant plants and trees died and created layers at the bottom of lakes and sediment piled up on top.
- that coal is a fossil fuel and can be burned to create energy.
- that the energy created by burning coal comes from energy stored in giant plants that lived hundreds of millions of years ago in swamp forests.

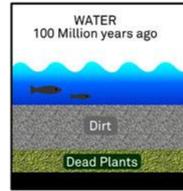
Pupils could investigate:

- how the energy from burning coal is used.
- how coal was created.
- why coal is seen as not being environmentally friendly.

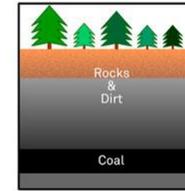
How coal was formed:



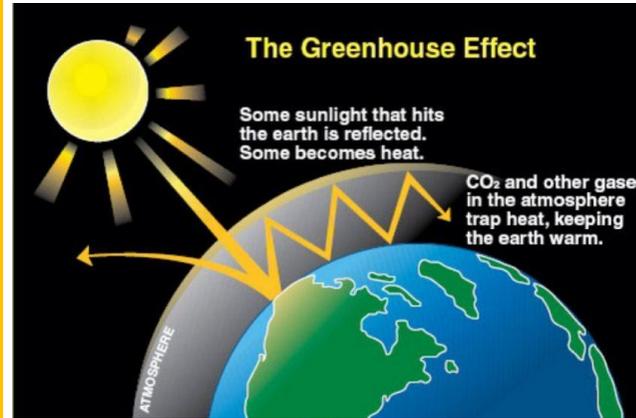
Before the dinosaurs, many giant plants died in swamps.



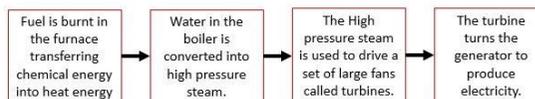
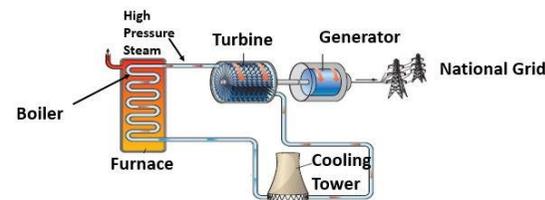
Over millions of years, the plants were buried under water and dirt.



Heat and pressure turned the dead plants into coal.



Fossil Fuel Power Station



Key Vocabulary

crystals	a clear, transparent mineral found in some rocks
decaying	gradually rotting away and being destroyed by a natural process
energy	power created from a chemical reaction when coal is burned
environmentally friendly	not harmful to the environment
erosion	the process of being worn away by wind or water
fossils	the remains or imprint of a prehistoric plant or animal in a rock
fossil fuel	a natural material such as coal or gas formed in the geological past from the remains of living organisms
geologist	a person who is an expert in the physical structure of earth and rocks
grains	a tiny, hard piece of something such as sand or salt
igneous	rocks that are formed by molten magma from volcanoes
magma	molten rock that is formed inside the earth
metamorphic	rocks that are formed when their original structure is changed by heat and pressure
mineral	something that is formed naturally within rocks
molten	melted at a really high temperature
non-porous	doesn't have tiny holes to allow liquid or gas through
permeable	allows water and other liquid or gases to pass through
porous	has tiny holes that allow water and gas to pass through
preserve	to protect from decay
rocks	a solid mass made up of minerals
sediment	solid material that settles at the bottom of a liquid
sedimentary	rocks that are formed by sediment
volcano	a mountain from which molten magma escapes

Key Questions:

- what is coal?
- what is a sedimentary rock?
- how was coal formed?
- why is coal called a fossil fuel?
- why is coal seen as not being environmentally friendly?