

Fold in half at the line

----->

Glue on this side

# Earth's Structure

- 1 I can name the three different types of rocks and describe how these are formed
- 2 I can explain in detail how the three different types of rocks are formed, with reference to factors that may alter the appearance and properties of these rocks
- 3 I can link the formation of rocks together to describe and explain the rock cycle in detail
- 4 I can label the three rock layers inside the Earth as the crust, mantle and core
- 5 I can list some properties of ceramics

1	ceramic	A compound such as a metal silicate or oxide that is hard, strong, and has a high melting point.
2	core	The innermost layer of the Earth, which extends about halfway from the centre of the Earth to the surface.
3	crust	The rocky outer layer of the Earth.
4	igneous rock	Formed when liquid rock (lava or magma) cools or freezes. Their minerals are arranged in crystals. Examples are granite, basalt, and obsidian.
5	lava	Liquid rock that is above the Earth's surface.
6	magma	Liquid rock below the Earth's surface.
7	mantle	The layer of Earth that is below the crust. It is solid but can flow very slowly.
8	metamorphic rock	Formed from existing rocks exposed to heat and/or pressure over a long time. Examples are marble, slate, and schist.
9	porous	A porous material has small gaps that may contain substances in their liquid or gas states. Water can soak into a porous material.
10	sedimentary rock	Formed from layers of sediment, which can contain fossils. Examples are chalk, limestone, and sandstone.

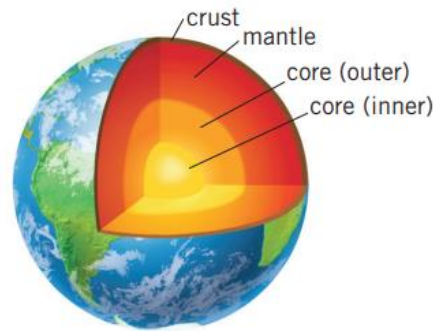
Prior knowledge from KS2: At KS2 you will have covered the model of the Sun and Earth that enables them to explain day and night. Pupils should learn that the Sun is a star at the centre of our solar system and that it has eight planets

**Future learning:**  
At GCSE physics you learn in more detail about structure of the Earth, our Solar System, the life cycle of stars and the Red Shift. In GCSE chemistry you will also cover in more detail how the Earth's atmosphere has changed and consequences of global warming.

**Why?**  
The impact of the change in the atmosphere is affecting resources, wildlife and is a huge issue around the world.

**Careers:**  
Astrologist  
aerospace engineer,  
Astrophysicist  
Climatologist

## The Earth



The Earth has three main layers:

- The **crust** is rocky and solid
- The **mantle** is made from mainly solid rock but this can flow
- The **outer core** is liquid metal and the **inner core** is solid

## Types of rock

Type of rock	How it is formed	Properties	Uses
<b>sedimentary rock</b>	<ul style="list-style-type: none"> <li>• sediment piles up in one place and, over many years, sticks together by compaction or cementation</li> <li>• <b>compaction:</b> weight of sediments above squeeze them into rocks</li> <li>• <b>cementation:</b> another substance sticks the sediments together</li> </ul>	<ul style="list-style-type: none"> <li>• <b>porous:</b> made of small grains stuck together so there are holes that water can pass through</li> <li>• soft: easy to break apart the sediments</li> </ul>	building materials (e.g. sandstone and limestone)
<b>igneous rock</b>	<ul style="list-style-type: none"> <li>• when liquid rock cools it turns into igneous rocks these are made of crystals locked tightly together</li> <li>• <b>magma:</b> liquid rock underground-cools slowly and forms large crystal</li> <li>• <b>lava:</b> liquid rock above the ground-cools quickly and forms small crystals</li> </ul>	<ul style="list-style-type: none"> <li>• <b>durable</b> and hard (difficult to damage): the crystals are locked tightly together</li> <li>• not porous: there is no space between crystals</li> </ul>	pavement rail tracks
<b>metamorphic rock</b>	<ul style="list-style-type: none"> <li>• other rocks under that Earth are heated and put under pressure</li> <li>• over time, these rocks become metamorphic</li> </ul>	<ul style="list-style-type: none"> <li>• not porous: there is no space between crystals</li> </ul>	marble used for kitchens slate used for roofing tiles



Complete some of the tasks below to reach a total of \_\_\_\_\_ points over this unit of work – Highlight the box once completed.

Topic	1 Point	2 Points	4 Points	6 Points	10 Points
Earth's structure 	Create a way of remembering the different layers that form the Earth	Make a labelled model of how the layers of the Earth are arranged	On a new page, create a glossary of all of the keywords from today's lesson. Draw and colour in a drawing for each keyword	Explain how fault lines and volcanoes are related. Make sure to talk about how volcanoes are formed.	Research how earthquakes occur. Create a storyboard from your findings
Sedimentary rock 	Give three examples of types of sedimentary rock	Create a storyboard to show how sedimentary rocks form	Write a letter to a friend to explain how igneous rocks form. Explain it in a way that someone who understood very little science could understand it	Explain how a rock with large crystals forms in comparison to a rock with fine crystals	Research what other planets igneous rocks form on and the conditions on the planets that cause these rocks to form.
Igneous and metamorphic rock 	Create a poem about the three different types of rock	Create a poster to show the similarities and differences between the three different types of rock	Create a flowchart to decide if a rock is sedimentary, igneous or metamorphic	Research what beachrock is and how it forms. Is it sedimentary, igneous or metamorphic? Why?	You have one of each type of rock. Write out a method to determine what type of rock each rock is
Rock cycle 	Create a 140 character "tweet" explaining what the rock cycle is	Create a poem to help you remember the rock cycle.	Draw a labelled diagram of the rock cycle, explaining what happens at each step.	Write a story about a rock that goes through the rock cycle.	Create a Venn diagram/mind map to compare the different stages of the rock cycle and show how they link

