Key points to learn

Structure of the Earth	The Earth consists of the crust, mantle, outer core and inner core
Atmosphere	The atmosphere is the mixture of gases around the Earth. It is mainly nitrogen and oxygen with smaller amounts of argon and carbon dioxide.
Sedimentary rocks	Form as a result of weathering, erosion, transport, deposition and compaction or cementation
Metamorphic rocks	Form when heating, high pressure or both change existing rock. They consist of crystals. They are non-porous.
Igneous rock	Form when liquid rock cools and freezes
Rock cycle	The rock cycle shows how materials in rock are recycled over millions of years
Uplift	Huge forces inside the Earth push rocks upwards to form mountains. This called uplift.

Key points to learn

Carbon stores	Carbon stores include the atmosphere, the oceans, sedimentary rocks, fossil fuels and organisms
Carbon cycle	The carbon cycle shows how carbon compounds enter and leave carbon stores
Sedimentary rocks	Form as a result of weathering, erosion, transport, deposition and compaction or cementation
Carbon Dioxide in the atmosphere	The concentration of carbon dioxide in the atmosphere is increasing because of deforestation and burning fossils fuels. Extra carbon dioxide in the atmosphere causes climate change.
Recycling	Recycling involves collecting and processing materials that have been used to make new objects

KS3: C2.4 The Earth Knowledge Organiser

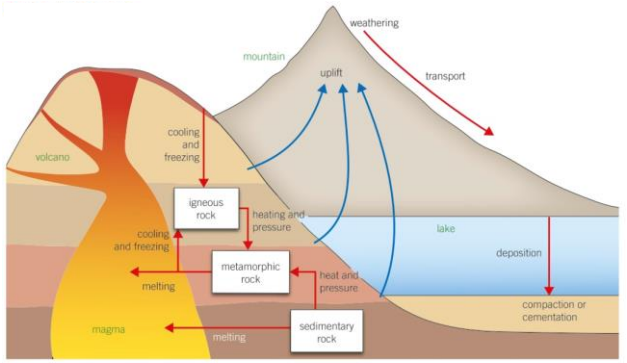
Big picture

- Chemistry
  - 1.1 Particles and their behaviour
  - 1.2 Elements, atoms and compounds
  - 1.3 Reactions
  - 1.4 Acids and alkalis
  - 2.1 The Periodic Table
  - 2.2 Separation techniques
  - 2.3 Metals and acids
  - **2.4 The Earth**

Fantastic fact!

For each mile you drill down into the Earth, the temperature increase by 40 °C.

Additional Information



▲ The rock cycle.

C2 Checklist
Chapter 4

Activate

Lesson	Developing	Secure	Extending
C2 4.1 The Earth and its atmosphere	I can name the layers of the Earth. ☐	I can describe properties of the different layers of the Earth's structure. ☐	I can compare the different layers of the Earth in terms of their properties. ☐
	I can name the main components of the atmosphere. ☐	I can describe the composition of the atmosphere. ☐	I can describe the composition of the atmosphere in terms of abundance of components. ☐
C2 4.2 Sedimentary rocks	I can state a property of sedimentary rocks. ☐	I can explain two properties of sedimentary rocks. ☐	I can explain two properties of sedimentary rocks by linking them to the rock structure and formation. ☐
	I can describe simply how sedimentary rocks are made. ☐	I can explain how sedimentary rocks are made. ☐	I can give a detailed explanation of the sedimentary rock cycle. ☐
C2 4.3 Igneous and metamorphic rocks	I can state one difference between igneous and metamorphic rocks. ☐	I can compare the ways that igneous and metamorphic rocks form. ☐	I can discuss examples of rocks that illustrate the different methods of formation of igneous and metamorphic rocks. ☐
	I can describe very simply how igneous and metamorphic rocks are formed. ☐	I can explain how igneous and metamorphic rocks form. ☐	I can link properties of igneous and metamorphic rocks to their methods of formation. ☐
C2 4.4 The rock cycle	I can give simple facts about how a rock can be changed from one type to another. ☐	I can use the rock cycle to explain how the material in rocks is recycled. ☐	I can give a detailed description and explanation of a rock's journey through the rock cycle. ☐

C2 Checklist
Chapter 4

Activate

Lesson	Developing	Secure	Extending
C2 4.5 The carbon cycle	I can state the changes in levels of carbon dioxide over time. ☐	I can explain why the concentration of carbon dioxide in the atmosphere did not change for many years. ☐	I can explain changes in the levels of carbon dioxide using stages of the carbon cycle. ☐
	I can name one place carbon dioxide may be stored. ☐	I can use the carbon cycle to identify reservoirs of carbon. ☐	I can use equations to explain processes that exchange carbon dioxide to and from the atmosphere. ☐
C2 4.6 Climate change	I can state a cause of global warming. ☐	I can explain why global warming happens. ☐	I can use a model to explain why global warming happens. ☐
	I can state one impact of global warming. ☐	I can explain some impacts of global warming. ☐	I can discuss in detail the impacts of global warming, identifying primary and secondary problems. ☐
C2 4.7 Recycling	I can describe how aluminium is recycled. ☐	I can explain how aluminium is recycled. ☐	I can compare how other materials are recycled with recycling of aluminium. ☐
	I can give one advantage and one disadvantage of recycling. ☐	I can analyse the advantages and disadvantages of recycling. ☐	I can use data to discuss the relative benefits and drawbacks of recycling materials. ☐

Chapter 4 Glossary

Key word	Definition
atmosphere	The mixture of gases surrounding the Earth.
biological weathering	The breaking up or wearing down of rocks by the action of living things.
carbon cycle	The carbon cycle shows stores of carbon, and summarises how carbon and its compounds enter and leave these stores.
carbon store	A place where carbon and its compounds may remain for a long time. Carbon stores include the atmosphere, oceans, sedimentary rocks, fossil fuels, the soil, and living organisms.
cementation	The 'gluing together' of sediments by different chemicals to make sedimentary rocks.
chemical weathering	The breaking up or wearing down of rocks by the action of chemicals such as those in rainwater.
climate change	A long-term change in weather patterns.
combustion	A burning reaction, in which a substance reacts quickly with oxygen, and gives out light and heats the surroundings.
compaction	The process of squashing sediments together to make new rocks by the weight of layers above.
crust	The rocky outer layer of the Earth.
deforestation	The cutting down or burning of trees in forests.
deposition	The settling of sediments that have moved away from their original rock.
durable	A property of a material meaning that it is difficult to damage.
erosion	The breaking of a rock into sediments, and their movement away from the original rock.
freeze-thaw	Weathering of rocks that happens as a result of water repeatedly freezing and thawing.
global warming	The gradual increase in the Earth's mean air temperature.
greenhouse effect	The absorbing of energy by gases in the atmosphere, such as carbon dioxide.
greenhouse gas	A gas that contributes to climate change, such as carbon dioxide.
igneous	Rock made when liquid rock (magma or lava) cools and freezes.
inner core	The solid iron and nickel at the centre of the Earth.
lava	Liquid rock that is above the Earth's surface.
magma	Liquid rock that is below the Earth's surface.

Chapter 4 Glossary

mantle	The layer of Earth that is below the crust. It is solid but can flow very slowly.
metamorphic	Rock formed by the action of heating and/or pressure on the sedimentary or igneous rock.
outer core	The liquid iron and nickel between the Earth's mantle and inner core.
photosynthesis	The process plants use to make their own food, glucose. In photosynthesis, carbon dioxide and water react together to make glucose and oxygen.
physical weathering	The breaking up or wearing down of rocks by the effects of changing temperature.
porous	A porous material has small gaps that may contain substances in their liquid or gas states. Water can soak into a porous material.
radiation	The transfer of energy as a wave.
recycling	Collecting and processing materials that have been used, to make new objects.
respiration	The process that transfers energy from plants and animals. In respiration, glucose reacts with oxygen to make carbon dioxide and water.
rock cycle	The rock cycle explains how rocks change and are recycled into new rocks over millions of years.
sediment	Pieces of rock that have broken away from their original rock.
sedimentary	Rock made from sediments.
transport	Movement of sediments far from their original rock.
troposphere	The part of the atmosphere nearest the Earth.
uplift	Uplift happens when huge forces from inside the Earth push rocks upwards.
weathering	Weathering breaks up all types of rock into smaller pieces, called sediments.