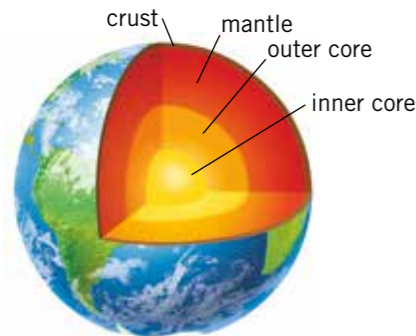


### The Earth

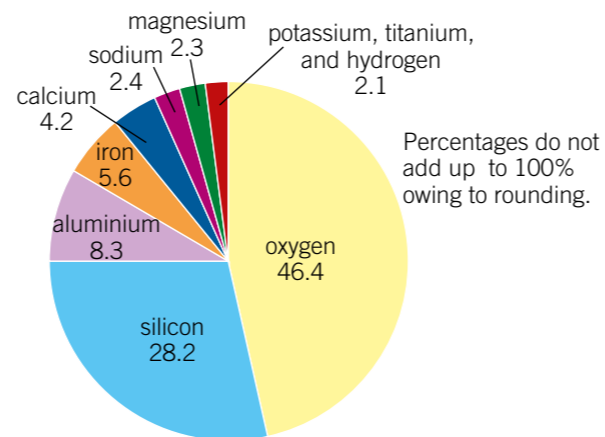


The Earth is made of several layers:

- The **crust** is rocky and solid.
- The **mantle** is solid rock but can flow.
- The **outer core** is liquid metal and the **inner core** is solid metal.

### The crust

The Earth's crust contains many naturally-occurring elements in different proportions.

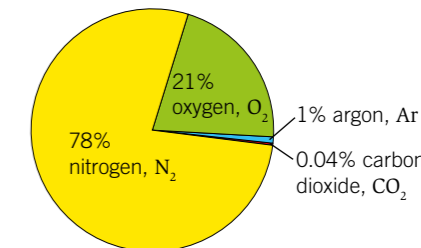


### Types of rock

There are three types of rock that make up the Earth's crust. These are formed by different processes in the **rock cycle**, and have different properties.

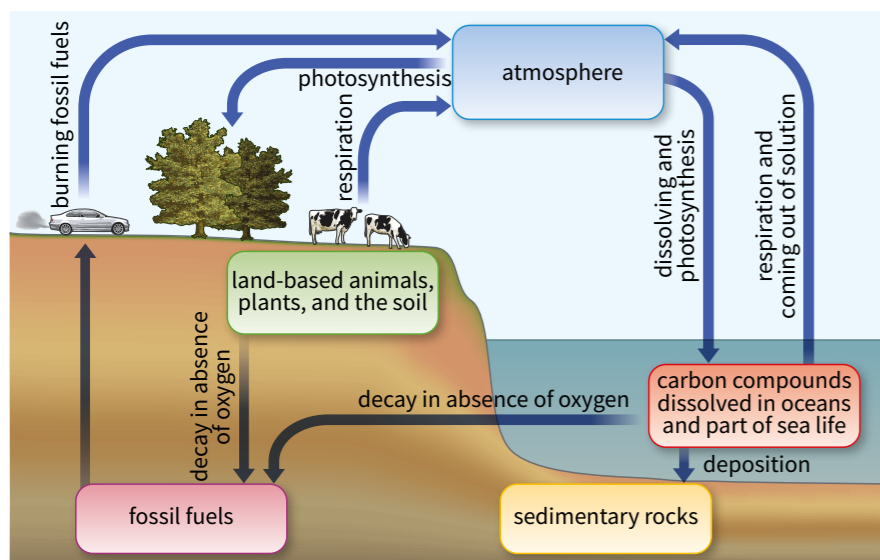
### The atmosphere

The **atmosphere** is a layer of gas surrounding the Earth. It is mainly composed of nitrogen and oxygen.



### The carbon cycle

The carbon cycle shows how carbon atoms move between carbon dioxide in the atmosphere, and carbon compounds on Earth.



### Climate change

Greenhouse gases like carbon dioxide trap energy in the Earth's atmosphere. Humans are adding more of these gases and this is causing global heating. This causes:

- melting of glaciers and polar ice
- changes to local weather patterns.

Long-term changes to weather patterns are called climate change. Climate change has led to the extinction of some plant and animal species. Climate change makes it harder for people to grow food.

### Recycling

Earth's resources are limited and come from the ocean, crust or atmosphere. To make sure there are enough resources to live our lives as we wish we can:

- **Reuse:** you or someone else uses an object again, either for its original purpose or for a different purpose.
- **Recycle:** collecting and processing used objects so that their materials can be used again.

Type of rock	How it is formed	Properties	Uses
<b>sedimentary rock</b>	<ul style="list-style-type: none"> <li>• <b>sediment</b> piles up in one place and over many years stick together by <b>compaction</b> or <b>cementation</b></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>• porous: 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 <b>crystals</b> locked tightly together</li> <li>• <b>Magma:</b> liquid rock underground – cools slowly and forms large crystals.</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>• Durable 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 the 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

### Key words

Make sure you can write definitions for these key terms.

atmosphere cementation climate change compaction crust Earth global heating global warming greenhouse effect greenhouse gases igneous rock inner core lava magma mantle metamorphic rock outer core porous recycle resource reuse rock cycle sedimentary rock

