2 Planet Earth

HEAT FROM INSIDE THE EARTH

You should know ...

In poor and developing countries, an average person only uses about 10 litres of water a day. In comparison, people in Spain consume about fifteen times more water than that. Do you know how much water you can save by only making a few small changes in your daily habits?

- Have a short shower instead of a bath. You can save about 100 litres of water.
- Turn off the shower when you are putting on soap or shampoo. That saves another 10 litres of water.
- Turn off the tap when you are brushing your teeth. You can save between 10 and 20 litres of water.
- Don't leave the tap on when you wash the dishes by hand. Fill the sink with water before you start washing. You can save about 50 litres of water.

1 How many litres of water does the average person in Spain use every day?

2 Imagine you have a short shower every day instead of a bath. How much water can you save in only one week?

3 Why is it a good idea to turn off the water when you brush your teeth?

4 Can you think of more ways to save water? Write down three ideas in your notebook.

1. The layers of the Earth

The Earth is often called 'The Blue Planet' because about 75 % of its surface is covered by water. From space, astronauts can see the Earth's many oceans and seas. They can also see white clouds moving over the surface of the planet.

2.1 The Earth has got three main parts: the atmosphere, the hydrosphere and the geosphere.

The atmosphere

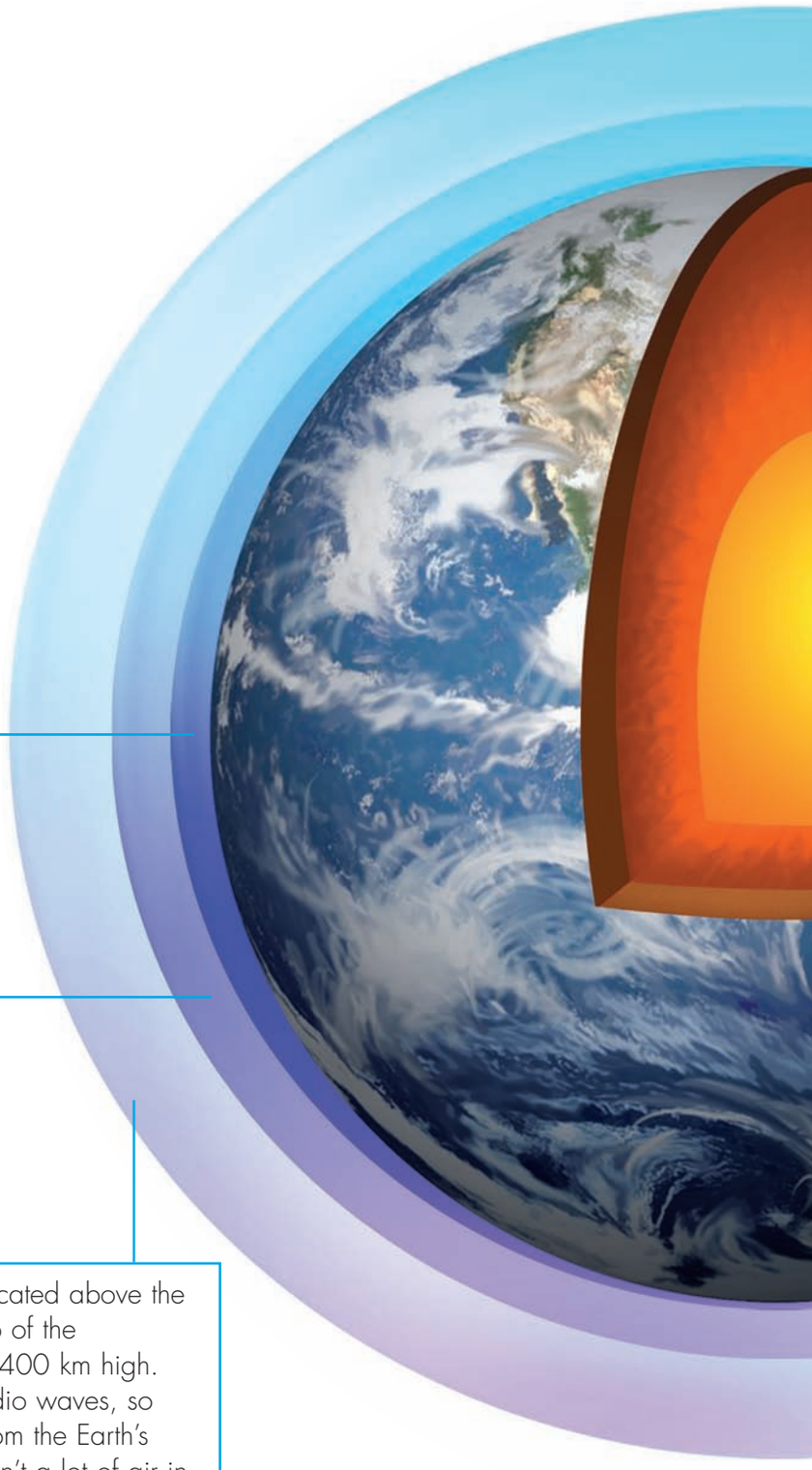
2.2 The Earth's atmosphere is a gaseous layer that surrounds the whole planet.

The Earth's atmosphere contains various gases. The most common gases are nitrogen and oxygen. The atmosphere can also be divided into different layers.

The troposphere is the layer of air that is closest to the Earth's surface. It's 12 km thick. In the troposphere, we can observe meteorological conditions, like clouds, wind and rain.

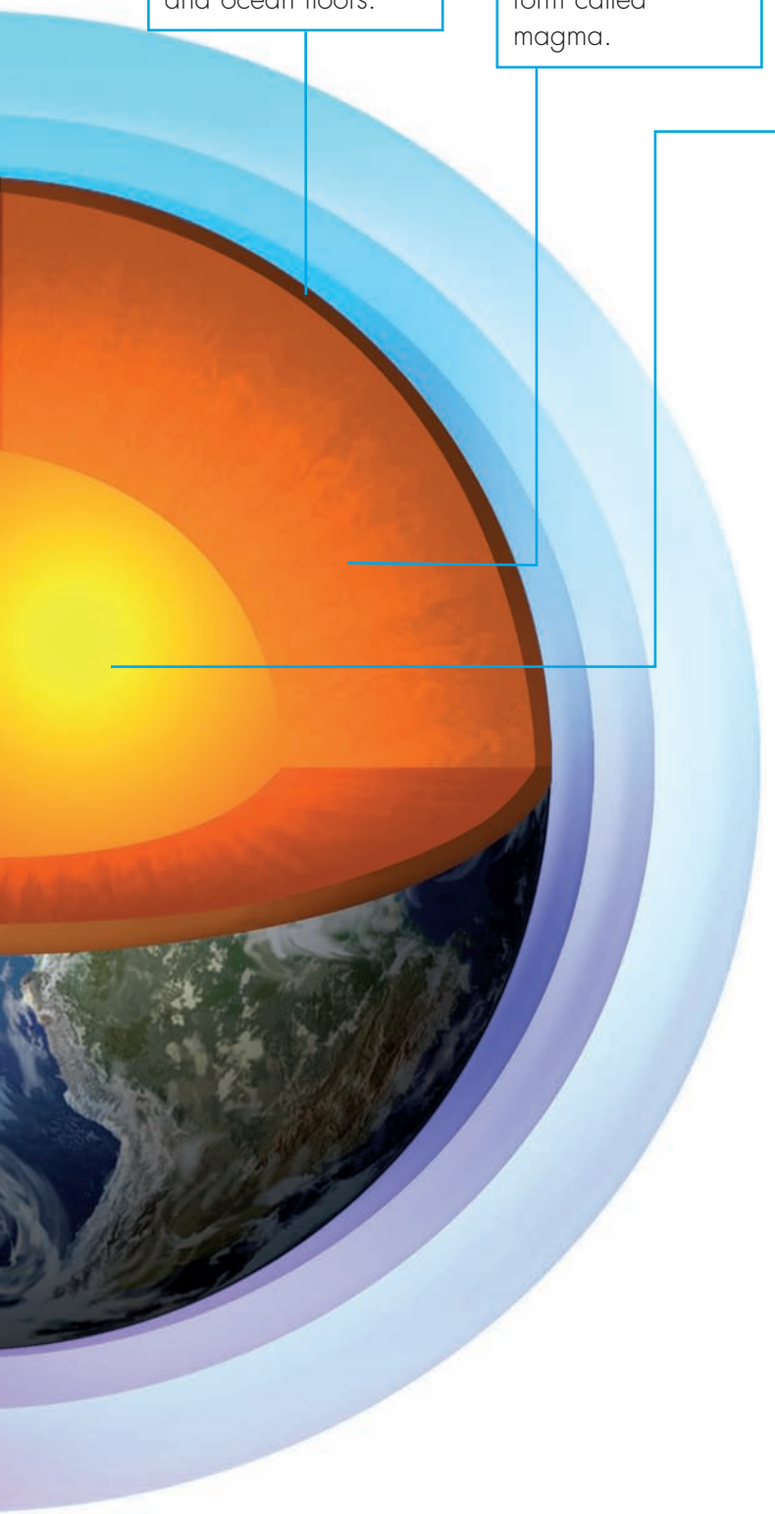
The stratosphere is the layer above the troposphere. The top of the stratosphere is 50 km above the Earth's surface. The stratosphere includes the ozone layer, which protects life on our planet from the Sun's ultraviolet radiation.

The ionosphere is located above the stratosphere. The top of the ionosphere is about 400 km high. This layer reflects radio waves, so they can't escape from the Earth's atmosphere. There isn't a lot of air in the ionosphere.



The crust is the outer layer of the geosphere. It's made of rock and it includes the Earth's continents, islands and ocean floors.

The mantle is a layer of rock under the crust. The mantle can be very hot, so some of the rock is in a liquid form called magma.



The core is the inner layer of the geosphere. It's mostly made of iron. Temperatures in the core are even higher than in the mantle.

The geosphere

2.3 The geosphere is the solid part of the Earth. It can be divided into three different layers: the crust, the mantle and the core.

The hydrosphere

2.4 The hydrosphere includes all the water that exists on the Earth.

On the Earth, we can find water in three different states:

- Water exists in a liquid state, in our oceans, seas, lakes and rivers. There is also lots of liquid water under the Earth's surface.
- Water exists in a solid state, as snow and ice, especially in Greenland and Antarctica.
- Water also exists in a gaseous state, as water vapour in the Earth's atmosphere.

1. Name the layers of our planet's atmosphere.

2. What part of the geosphere has the highest temperature?

3. On which part of the geosphere do people live?

4. Match the three states of water with the examples.

Liquid state	•	• Icebergs and glaciers
Gaseous state	•	• Oceans and rivers
Solid state	•	• Water vapour

5. 2.5 Quiz.