# 1.1 A slice through the Earth

You know quite a lot about the outside of the Earth, where you live.
But what's the inside like? You'll find out in this unit.

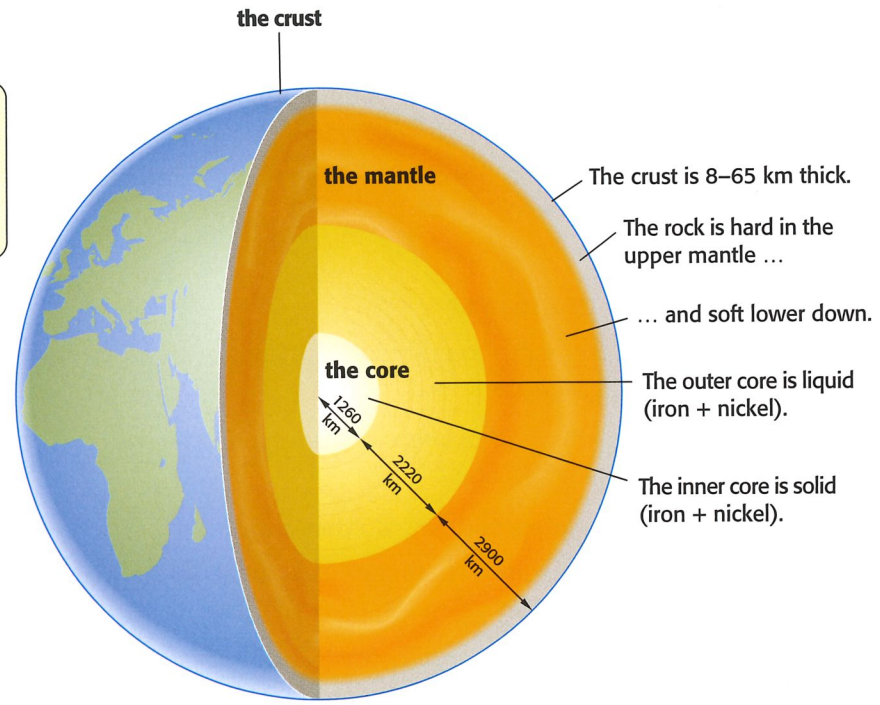
## The Earth's three layers

The Earth is made up of three layers:

**1 The crust**
This is the layer you live on. It is a thin skin of rock around the Earth, like the skin on an apple (shown here by the thin blue line).

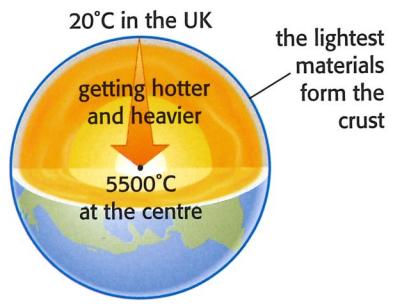
**2 The mantle**
It forms about half of the Earth. It is made of heavier rock.
The upper mantle is hard. But the rock below it is hot and soft, like soft toffee. It is runny in places.

**3 The core**
It is a mainly iron, mixed with a little nickel. The **outer core** is liquid. The **inner core** is solid.




## How did the layers form?

Some time after the Earth formed, it got so hot that everything inside it melted. The heavier substances in the liquid sank and the lighter ones rose, making layers. As the Earth cooled, some of the layers hardened.




## Hot hot hot

It's still very hot inside the Earth. It gets hotter as you go down through it. 200 km down, the rocks are glowing white hot. At the centre of the Earth, the temperature may be around 5500 °C. (We don't know for certain.)

▲ *A bubble of boiling rock reaching the Earth's surface in Hawaii.*

▲ *Several countries have dug holes to find out more about the Earth's crust. The deepest is in Russia – over 12 km!*



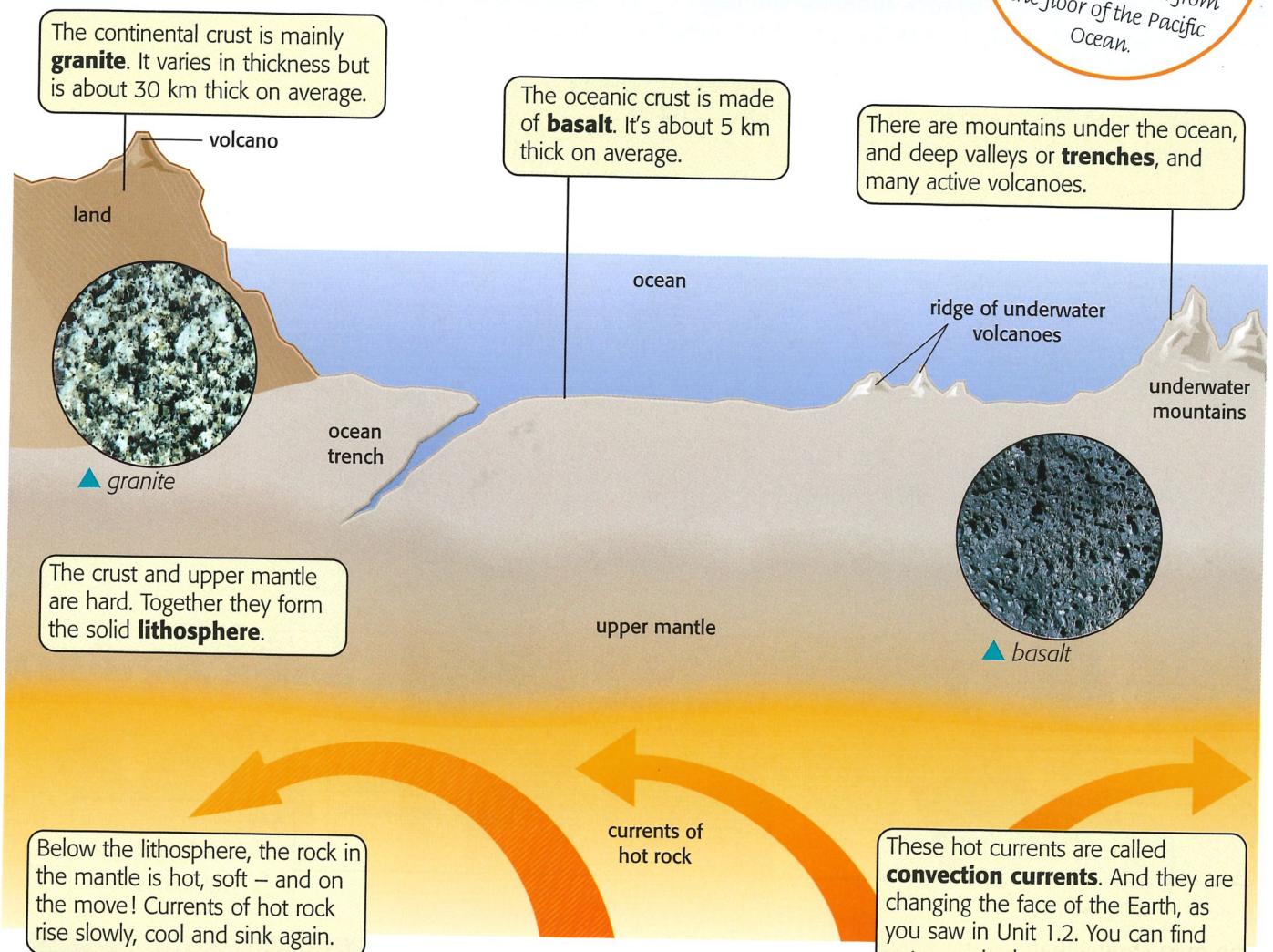


## More about the crust, and what's below it

This drawing shows part of the crust and mantle.

The crust under the oceans is a thin layer of heavy rock. It is called the **oceanic crust**. The crust that forms the continents is made of lighter rock. We call it the **continental crust**.

*Did you know?*
- The world's tallest mountain is Mauna Kea in Hawaii.
- It rises 10.23 km from the floor of the Pacific Ocean.




## Your turn

**1** Make a table like this, and fill it in for the Earth's layers.

| Layer | Made of … | Solid or liquid? | How thick? |
|---|---|---|---|
| crust | | | |
| mantle | | | |
| core<br>– outer<br>– inner | | | |

**2 a** What is the Earth's radius, in km, at the thickest part of the crust?
**b** If you cycle at 20 km an hour, how long will it take you to cycle to the centre of the Earth?

**3** Make a larger drawing like this, and complete the labels.