HOME GEOLAB: RESTLESS EARTH

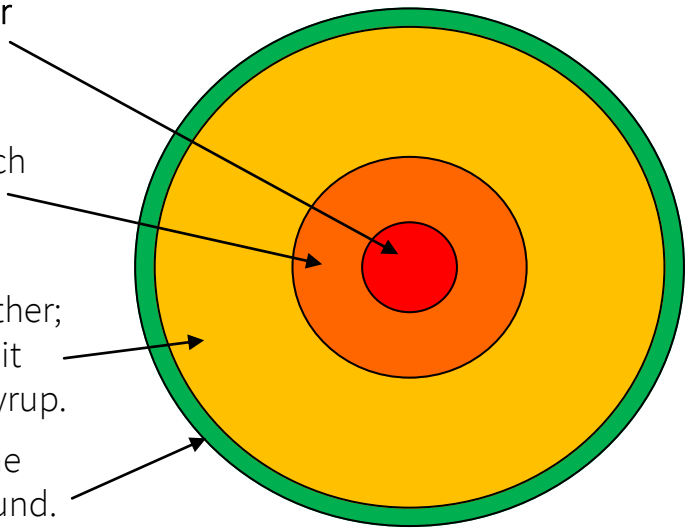
Did you know that the Earth is made up of layers of different rocks? From a solid ball of mostly metal in the middle to the thin, rocky crust that we live on, there's a lot going on under our feet. Let's explore the Earth's layers!

At the very centre of the Earth is a solid **inner core**, made of metal - it's mostly iron, like a giant metal marble.

Around the inner core is the **outer core**, which is made of liquid rock.

Most of the inside of the earth is the **mantle**. It's not quite a liquid but not quite a solid either; scientists say it is **viscous** - you can imagine it being a bit like thick toothpaste or golden syrup.

On top of the mantle is the **crust**, which is the thin, hard, rocky skin that we see as the ground. In some places the crust is covered by ocean, lakes or seas.



The crust looks like a single piece but it's actually broken into lots of sections that geologists call **plates**. Imagine it like a giant jigsaw, only the pieces are always floating around on top of a gooey kind of slime underneath.

Sometimes the pieces push against one another, sometimes they pull apart. When they create a gap, liquid rock comes up into the space and hardens to form new crust - that liquid rock is called **magma**. Scientists use the phrase **plate tectonics** to describe the constant movement of the plates.

Turn over for some activities to do at home!

You can create a model of the Earth's layers at home using two paper plates!

You'll need; two paper plates, colouring crayons or pens, scissors

1. Turn the first plate into the outside of the Earth by drawing the continents and the ocean. You'll want to do it on the front and back of the plate.
2. Turn the second plate into the outside of the Earth by drawing the layers inside the planet. Start with a small circle in the middle, then a larger circle around that for the outer core. Lastly draw a big circle right by the edge. This is the boundary between the crust and the mantle. Now you can colour in each of the layers. If you need help imagining what the layers look like, check out the picture on the front of this sheet.
3. With your scissors, cut a line from the top to the middle of the first plate.
4. Now cut a line from the bottom to the middle of the second plate.
5. Assemble your Earth by slotting your two plates together. Congratulations, you have created your very own model of the planet Earth, inside and out!

Fancy recreating the movement of the plates on the mantle at home?

Watch out - you might get a bit messy!

You'll need; a deep plate or bowl, golden syrup, lasagne sheets

1. Pour some golden syrup into your bowl or deep plate.
2. Take two lasagne sheets, or snap a large sheet into two.
3. Place the lasagne sheets next to one another on top of the golden syrup. Now you can try moving the sheets like the plates of the earth!

Try moving the sheets apart from one another. See how the golden syrup mantle is revealed underneath? If this was the real mantle it would cool into solid rock, creating more crust.

Try moving the sheets towards one another. What happens?

- Sometimes one lasagne sheet slips under the other. When this happens with pieces of the crust, the crust that goes into the mantle melts because the mantle is very hot.

- Sometimes the lasagne sheets just push against one another. When this happens with the crust, this can cause earthquakes. When the plates both push upwards, this can create mountains. Mountain ranges like the Himalayas were created like this.