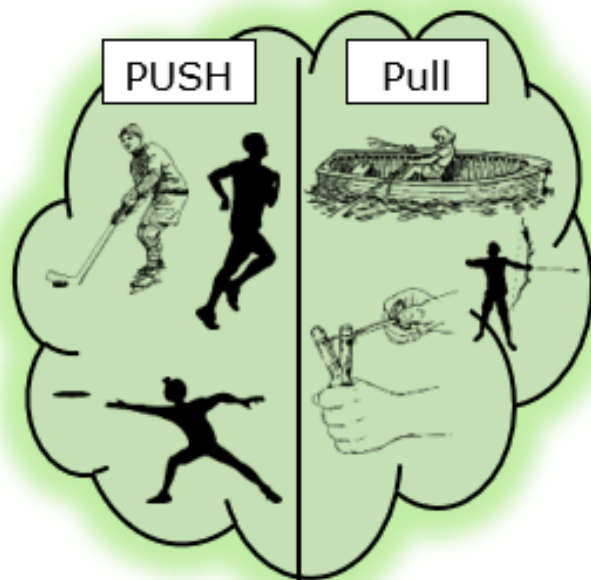


PUSHING AND PULLING

A force is a push or pull acting on an object as a result of the object's interaction with another object. Forces can make objects stop or start moving.



FUN FACTS ABOUT MAGNETS

- The most powerful magnet in the universe is a star called 'Magnetar'.
- Animals can be affected by magnetic pulls. Birds and turtles navigate by them and sharks are repelled by them!
- Earth's core is said to be filled with iron and nickel (metals which give it a magnetic field).

Forces and Magnets

Friction

When objects are pushed or pulled, an opposing force can be felt. This opposite force is called 'friction'. Friction causes things to slow down or stop. The grip on our shoes stops us slipping. Therefore, friction is great.

Ice-skates on an ice-rink will move for a long time because there is very little friction. The rougher the surfaces, the greater the friction.



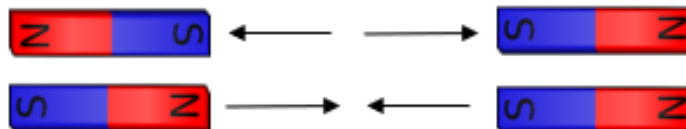
This rubbing of two surfaces can release energy, causing heat. (Try rubbing your hands together!)

Magnetic Poles

When two magnets are close, they create pushing or pulling **forces** on one another. These forces are strongest at the ends of the magnets. The two ends of a magnet are known as the **north pole (N)** and the **south pole (S)**.

The Same poles repel / The opposite poles attract

If you try to put two magnets together with the **same** poles pointing towards one another, the magnets will push away from each other. We say they **repel** each other. Opposite poles **attract** and are brought together.

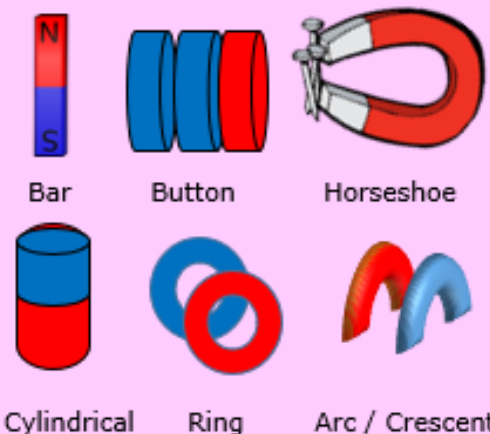


What is a Magnet?

A magnet is a special object which produces an area of magnetic force around itself called a **magnetic field**.

If a **metal** object enters this magnetic field, they will be attracted towards the magnet and end up sticking to it. (Non-metallic objects such as wood, plastic or fabric would not be attracted to it.)

Here is a range of different magnets:



Inside a compass is a small magnetic pin which constantly points north.

Earth has a natural magnetic field which means the pin turns to always face north and helping people find their way.

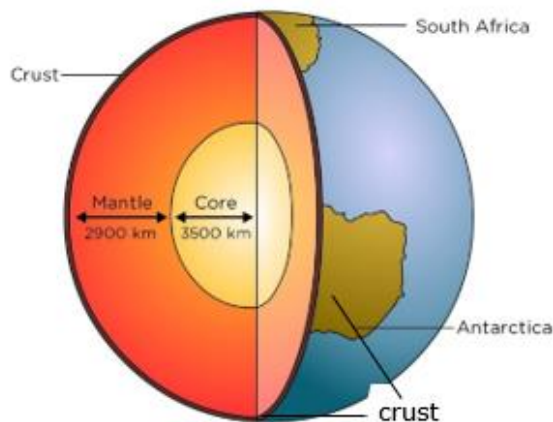


Shake, Rattle and Roll



Earthquakes

Formation	When tectonic plates move parallel to each other it causes friction that sticks them together. When they get unstuck, it can cause a violent jolt which causes an earthquake.
Magnitudes	Shockwaves spread out from the epicentre (the strongest point of the earthquake). Magnitude, measured on a Richter scale, measures how strong an earthquake is. 1 is a small tremor and 9 is catastrophic!



Inside Earth

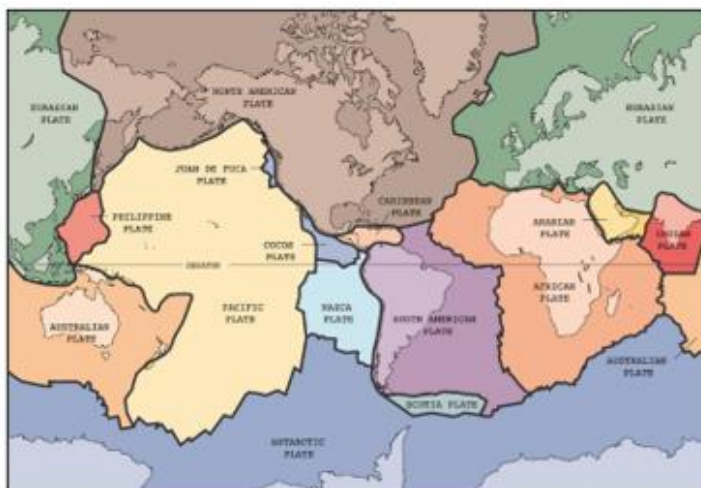
Earth is made up of three sections. The crust consists of solid rock. Below this is the mantle, so hot that the rock has melted and flows like liquid. Finally, the core which is a hotter ball of iron and nickel.

Suggested website to find out more:

<http://www.easyscienceforkids.com/all-about-earthquakes/>

Plate Tectonics

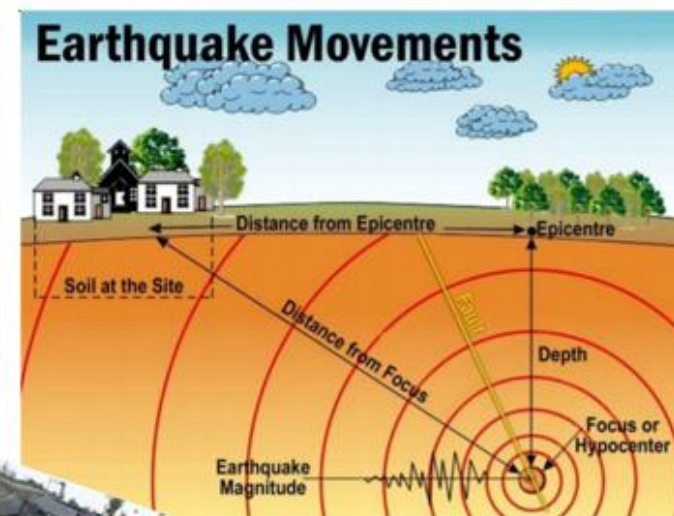
The part of the land that is moving in the Earth's crust is called the lithosphere. The lithosphere is made up of the Earth's crust and a part of the upper mantle. It moves in big chunks of land called tectonic plates. Some of these plates are huge and cover entire continents. They are around 62 miles thick and the movement of these help with the creation of mountains, volcanoes and earthquakes. They move between 1cm-10cm per year.



Key Vocabulary

crust	the outer layer of the Earth made up of plates
mantle	below the crust and made up of molten rock
core	centre of earth with a temperature of about 6000°C
plates	massive plate of solid rock on the Earth's crust
lithosphere	softened by the mantle, this helps move the plates
converge	two plates pushing together
diverge	two plates moving away from each other
magnitude	how strong an earthquake is
seismograph	instrument used to detect an earthquake

Earthquake Movements



The Richter Scale:

