

## UKS2 – Forces: a cracking idea or an accidental discovery?

### Procedural knowledge

Plan different types of scientific enquiries to answer questions, including controlling variables  
Take measurements, using a range of scientific equipment, with increasing accuracy  
Use test results to make predictions to set up further comparative and fair tests  
Report and present findings from enquiries, including conclusions

### Factual and Conceptual knowledge

#### What is a force?

A force is a push or a pull.

#### What can forces do to objects?

Forces can make objects start to move, move faster or move more slowly and stop moving. They can make objects change direction as well as change shape.

#### Which forces are there?

##### Gravity

This is the force that pulls objects down towards the centre of the Earth. The Earth is held in its orbit round the Sun by the Sun's gravitational pull. Gravity stops things from floating away into Space.

When things go into the air (like a football) gravity pulls them down.



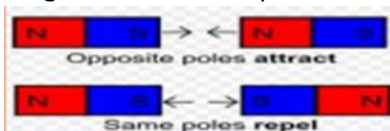
##### Friction

Water resistance and air resistance are forms of friction. Friction happens when two surfaces touch each other. It gives us grip, produces heat and slows things down. Smoother surfaces don't slow things down as easily. Friction is sometimes helpful and sometimes unhelpful. For example, air resistance is helpful as it stops the skydiver hitting the ground at high speed. Friction on a bike chain can make the bike harder to pedal so it is unhelpful.



##### Magnetism

Magnets attract or repel each other or other objects.



#### Who discovered forces?



Isaac Newton is famously thought to have developed his theory of gravity when he saw an apple fall to the ground from an apple tree.

#### Key Vocabulary

force, gravity, friction, gravitational pull, air resistance, buoyancy, upthrust, streamline, balanced and unbalanced forces, mechanism and newton

