

# Bishop Bronescombe C of E Primary School



Topic: Forces (Y5)

Year 5/6

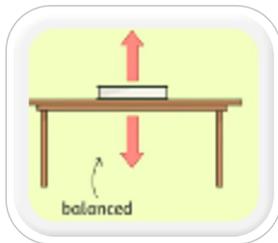
Strand: Physics

## What your child should already know:

- compare how things move on different surfaces .
- notice that some forces need contact between two objects, but magnetic forces can act at a distance.
- observe how magnets attract or repel each other and attract some materials and not others.
- compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.
- describe magnets as having two poles predict whether two magnets will attract or repel each other, depending on which poles are facing.

## By the end of the unit, your child should be able to:

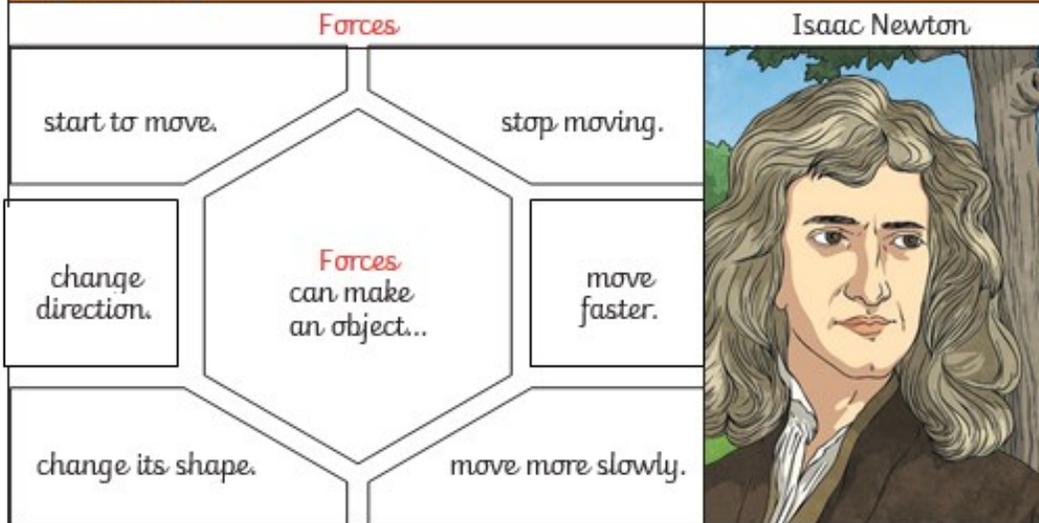
- explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
- identify the effects of air resistance, water resistance and friction, that act between moving surfaces.
- recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.



## Key Vocabulary

Word	Meaning
forces	Pushes or pulls.
gravity	A pulling <b>force</b> exerted by the Earth (or anything else which has <b>mass</b> ).
weight	The measure of the <b>force</b> of <b>gravity</b> on an object.
mass	A measure of how much matter (or 'stuff') is inside an object.
friction	A <b>force</b> that acts between two surfaces or objects that are moving, or trying to move, across each other.
air resistance	A type of <b>friction</b> caused by air pushing against any moving object.
water resistance	A type of <b>friction</b> caused by water pushing against any moving object.
buoyancy	An object is buoyant if it floats. This is because the weight of the object is equal to the <b>upthrust</b> .
streamlined	When an object is shaped to minimise the effects of <b>air</b> or <b>water resistance</b> .
upthrust	A <b>force</b> that pushes objects up, usually in water.

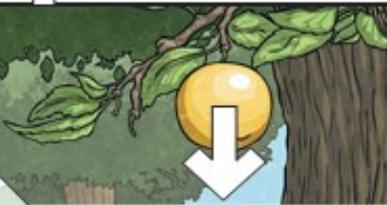
## Key Knowledge



**Mass** is how much matter is inside an object. It is measured in kilograms (kg).



**Weight** is how strongly **gravity** is pulling an object down. It is measured in newtons (N).



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 Knowledge

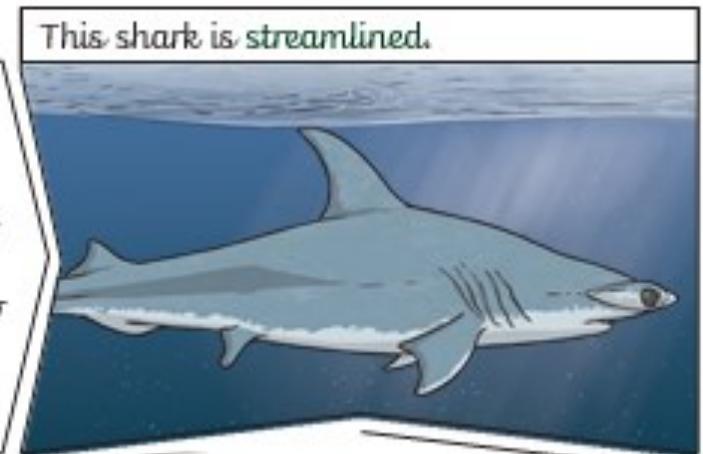
Examples of **forces** in action:



**Water resistance** and **air resistance** are forms of **friction**. **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.

This shark is streamlined.

It has a pointed nose to cut through the water, and a smooth, low, curved back to allow the water to flow over and around it.



It does not create much **water resistance** so it can move through the water quickly.