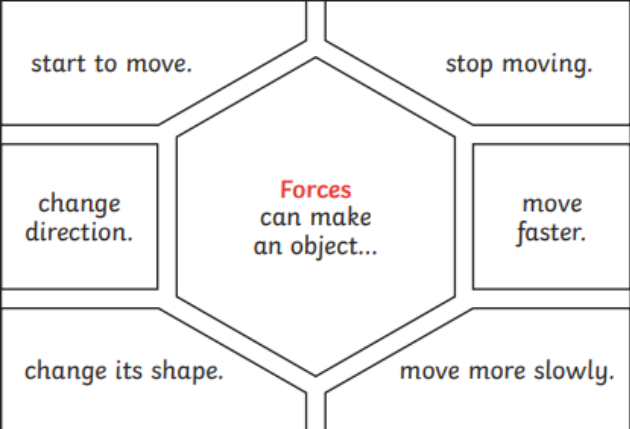



## Upper Key Stage 2: Forces


Key Vocabulary		What can a force do?
Gravity	The force that attracts a body towards the centre of the earth.	
Force	A push or pull upon an object resulting from its interaction with another object.	
Friction	The resistance that one surface or object encounters when moving over another.	
Weight	The measure of the force of gravity on an object.	
Mass	The weight measured by an objects acceleration under a given force or by the force exerted on it by gravity.	
Pull force	To draw or haul towards oneself or itself, in a particular direction.	
Push force	To move something in a specific way by exerting force.	
Water resistance	A force that is caused by water with the force acting in the opposite direction to an object moving through the water.	
Air resistance	A force that is caused by air with the force acting in the opposite direction to an object moving through the air.	
Earth's gravitational pull	The pull that Earth exerts on an object, pulling it towards Earth's centre. It is the Earth's gravitational pull that keeps us on the ground.	
streamlined	When an object is shaped to minimise the effects of air or water resistance.	
Pulleys	A wheel with a grooved rim around that changes the direction of a force applied to the cord.	
Levers	A rigid bar resting on a pivot that is used to move a heavy or firmly fixed load.	
Gears	A toothed wheel that works with others to alter the relation between the speed of a driving mechanism (e.g. engine) and the speed of the driven parts (e.g. the wheels).	

## Newton's 3 laws of motion

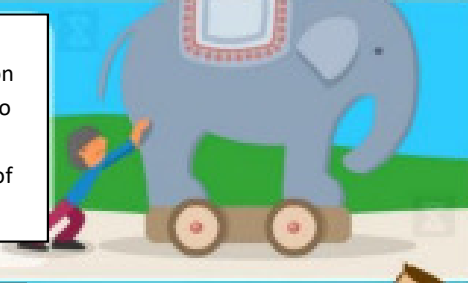
**LAW'S OF MOTION**




**First law**  
Everybody remains in a state of rest or uniform motion unless acted upon by an external force.



**Second law**  
The amount of acceleration of a body is proportional to the acting force and proportional to the mass of the body.



**Third law**  
For every action there is an equal but opposite reaction. If object A exerts a force on object B, then object B will exert an equal but opposite force on object A.


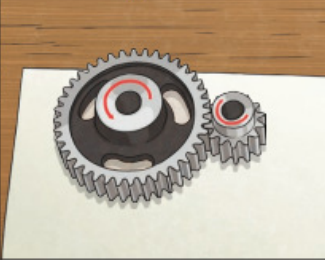



## Forces

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.

Pulleys	Gears/Cogs	Levers
 <p>Pulleys can be used to make a small <b>force</b> lift a lighter load. The more wheels in a pulley, the less <b>force</b> is needed to lift a <b>weight</b>.</p>	 <p>Gears or cogs can be used to change the speed, <b>force</b> or direction of a motion. When two gears are connected, they always turn in the opposite direction to each other.</p>	 <p>Levers can be used to make a small <b>force</b> lift a lighter load. A lever always rests on a pivot.</p>

## Upper Key Stage 2: Forces