

What should I already know?

Compare how things move on different surfaces
 Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance

Enquiry Question

Does the size of a parachute affect the time it takes for it to fall to the ground?

Vocabulary

Force	a push or a pull
Contact force	a push or a pull that affects objects which are touching
Frictional force	a contact force that is caused by one object being pushed across the surface of another
Motion	the change in the position of an object
Air resistance	a type of friction force on an object moving through air
Gravity	The force that causes things to fall
Water resistance	Force that slows things down as they move through water.
Mechanisms	Parts that make a machine work.
Lever	a rigid object that can rotate around a pivot
Gear	a wheel with teeth
Pulley	a cable on one or more wheels

There are contact forces and non-contact forces.



contact force
 a push or pull that affects objects that are touching



non-contact force
 a push or pull that affects objects which are not touching

Forces

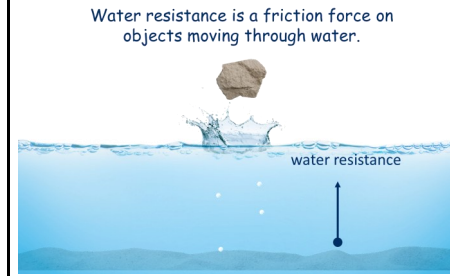
Air resistance: A type of friction force that pulls against an object travelling through the air. Some objects are more 'streamlined', meaning that the air pulls on them less, and they travel faster.



Parachutes have a large surface area which increases air resistance, slowing the parachute down.

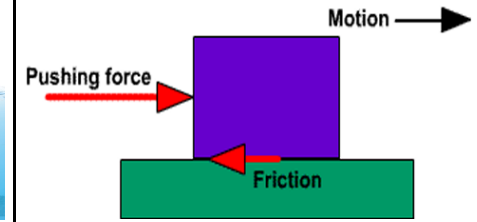
Water resistance: A friction force on objects floating or moving in water.

Water resistance is acting in one direction, either horizontally or vertically.



Surface resistance: The friction force of objects moving across a surface.

A stationary object will only move when the force applied is greater than the friction.



Gravity

Gravity is a force that acts at a distance. Everything is pulled to the Earth by gravity.

It has been around since the beginning of the Universe, and applies to all matter in the Universe.

The bigger an object's mass, the more gravity it will have. The smaller the mass of an object, the less gravity it will be subject to.

Without gravity we would fly right off the planet! The moon's gravity causes our ocean tides on Earth. The Sun's gravity keeps Earth in orbit around the Sun.

We don't actually 'feel' gravity. We only feel the effects of trying to overcome it by jumping or when we fall.

Sir Isaac Newton discovered gravity around 300 years ago. The tale is that he saw an apple fall from a tree, and wondered what force made it fall to the ground.

Gravity is a non-contact force caused by objects with mass pulling each other. The apple falls in a downward motion due to a force called gravity.



gravity

