

Forces

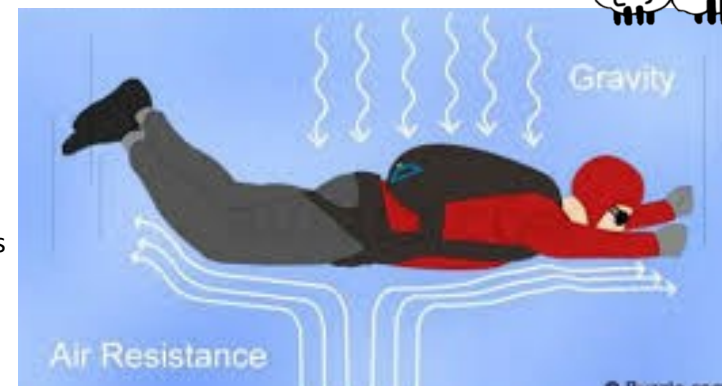


Curriculum Links:

- 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 Facts:

- Forces are pushes and pulls. These forces change the motion of an object: they can make it move, speed up or stop
- Friction is the resistance of motion—when one surface rubs against another
- Gravity is the force which pulls objects to the centre of the Earth
- Air resistance opposes the force of gravity. This can slow down an object falling to the ground
- Water resistance is friction created between water and an object. If objects are streamlined they can move through water more easily
- Levers make it easier to move heavy objects
- Pulleys are attached to ropes and wheels. The pulley can lift heavy objects upwards
- Gears are toothed wheels, the teeth fit together to move across a surface
- Springs can be stretched or squashed. The greater force put on them, the greater force is exerted



Key Vocabulary

Attract	When an object attracts another, it causes it to move towards it
Friction	The resistance a surface encounters when moving over another
Force	The push or pull on an object
Gravity	The force which attracts something to the centre of the Earth
Lever	A tool used to lift something
Motion	The action of moving or being moved
Pulley	A machine which makes lifting something easier
Repel	Gives a force which pushes away
Resistance	A force which slows down a moving object
Spring	A spiral of wire which returns to its original shape

Possible experiences:

We should already know:

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| <ul style="list-style-type: none"> • Create rafts/boats to explore resistance in water • Make parachutes to test air resistance - change variables • Investigate how surface area affects air resistance • Design and make products which use leavers, pulleys, gears and springs • Explore friction and motion | <ul style="list-style-type: none"> • Know a push and pull are types of forces • If force is applied it can allow an object to move or stop • The strength of a force determines how far/fast an object moves • Gravity causes objects to move to the ground • Magnets have poles: opposites attract and similar repel |
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