

#### Vocabulary:

Force	A push or a pull.
Friction	Force between two surfaces.
Air resistance	Friction caused by air particles.
Water resistance	Friction caused by water molecules
Lever	A rigid arm braced against a turning point.
Pulley	Rope looped over one or more wheels.
Gear	Wheels with teeth that slot together.

#### What is a force?

A force is a push or a pull. Forces can make objects move, change speed or change shape. Some forces act when two things touch, such as when a ball is kicked. Other forces act from a distance, such as the pull of gravity or a magnet.

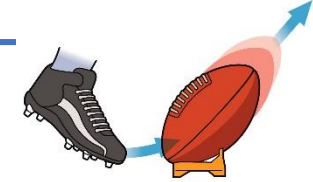
#### Friction

Friction is a force between two surfaces that are sliding against each other. It works in the opposite direction to the object and slow it down.



#### Air resistance

Whenever something or someone moves through air, they experience **air resistance**. This is a type of friction caused as the objects pushes against air particles. Air resistance slows an object down.

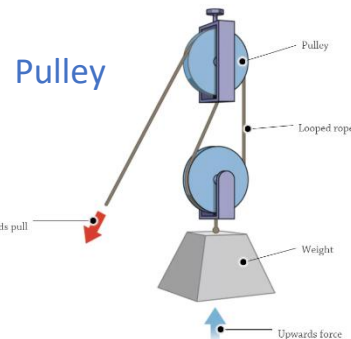
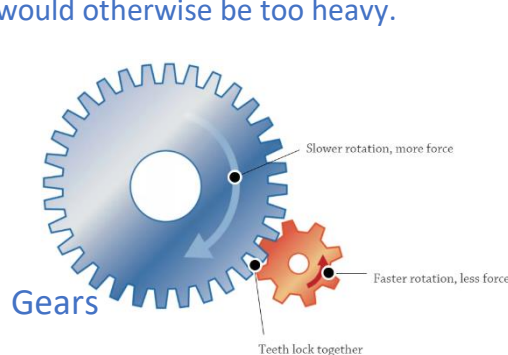


#### Water Resistance

Moving in water feels very different to moving in air. It is more difficult to run and it is possible to float. This is due to the invisible force of water resistance at work. Water resistance is a type of friction caused when water molecules push against an object.

#### Machines

Simple machines work by taking a force and making it bigger. They help to lift or move objects that would otherwise be too heavy.



#### Famous scientist:



**Sir Isaac Newton** was an English physicist and mathematician. He is considered one of the most important scientists in history. During his lifetime Newton developed the theory of gravity, the laws of motion (which became the basis for physics) and a new type of mathematics called calculus.