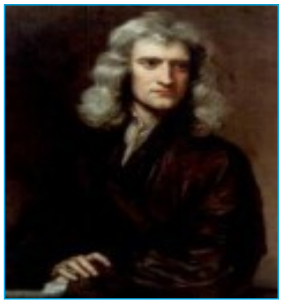
Forces - Year 5

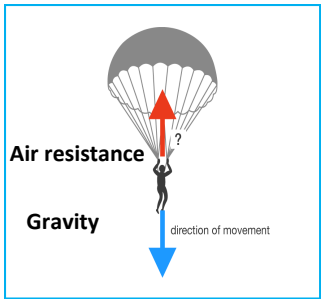
Previous Learning:

In Year 3, you compared how things moved on different surfaces. You also noticed that some forces need contact between two objects, but magnetic forces can act at a distance. You observed how magnets attract or repel each other and attract some materials and not others. You also learnt to compare and group together a variety of every-day materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.

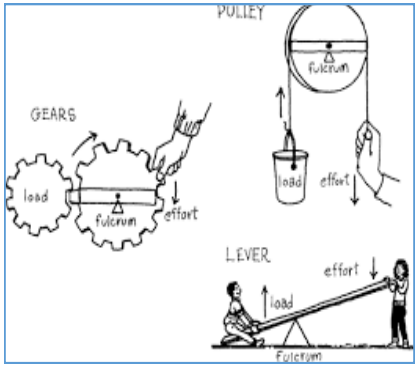
Isaac Newton is famously thought to have developed his theory of gravity when he saw an apple fall to the ground from an apple tree.

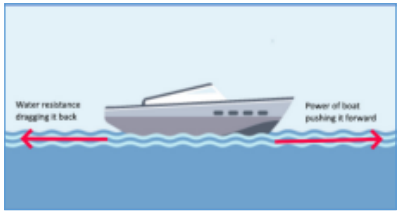


The Moon has a smaller mass than Earth so the gravitational pull on the Moon is smaller than it is on Earth.



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





Water resistance and air resistance are forms of friction.

The Moon has a smaller mass than Earth, so the gravitational pull on the Moon is smaller than it is on Earth.

Jupiter has a greater mass than the Earth so the gravitational pull on Jupiter is stronger than on Earth.

Key vocabulary	Definitions
force	Pushes or pulls
gravity	A pulling force exerted by the Earth (or anything else which has mass).
air resistance	A type of friction caused by air pushing against any moving object.
water resistance	A type of friction caused by water pushing against any moving object.
friction	A force that acts between two surfaces or objects that are moving, or trying to move, across each other.
mechanisms	Mechanisms are simple machines with moving parts that change input forces and movement into a set of useful output forces. Examples of mechanisms are pulleys, gears and levers.
levers	Levers can be used to make a small force lift a heavier load. A lever always rests on a pivot.
pulleys	Pulleys can be used to make a small force lift a heavier load. The more wheels in a pulley, the less force is needed to lift a weight.
gears	Gears or cogs can be used to change the speed, force or direction of a motion. When two gears are connected, they always turn in the opposite direction to each other.
mass	A measure of how much matter (or 'stuff') is inside an object

Future learning:

You will continue to learn about and explore the different forces that are acting around us when you are in secondary school.