The Tithe Farm Way:
Resilient pupils who have a life-long love of learning and are ready, respectful and safe in their choices.

Science - Year 5: Forces

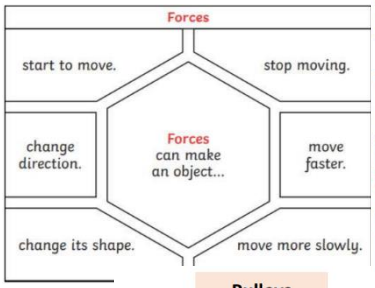
What I already know

That when **forces** are applied to an object they allow them to move. That the strength of a **force** determine how fast an object moves. **Friction** is the **resistance** of motion when there is contact between two surfaces. The **force** that cause objects to fall to the ground is **gravity.** That magnets have poles, opposite poles **attract** and similar poles **repels**

Key vocabulary

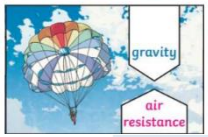
Buoyancy	An object is **buoyant** if it floats. This is because the **weight** of the object is equal to the **up thrust**.
Friction	**Friction** is a force that slows moving objects when surfaces rub together.
Gears	**Gears** are wheels with small bumps on their rim called teeth.
Magnetic field	The '**magnetic field'** is the area around the magnet where its force can be felt.
Mass	**Mass** is a measurement of the amount of matter something has.
Matter	**Matter** is anything that has weight and takes us space.
Newtons	**Newtons** are a measure of force named after scientist Sir Isaac Newton.
Newton meter	A **newton meter** is a piece of equipment that is used to measure the forces acting on an object.
Particle	A **particle** is an extremely tiny piece of matter
Pulley	A **pulley** is a machine that helps to move objects around by making a small force a large force.
Up thrust	**Up thrust** is a force that pushes objects up, usually in water.
Weight	**Weight** is a measurement of the force exerted on a mass by gravity.

Diagrams



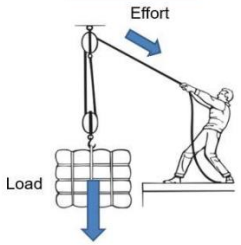


Water resistance is a type of **friction** caused by water pushing against any moving object.



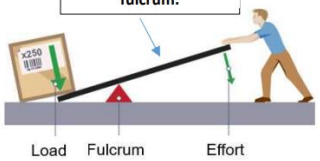
Air resistance is a type of **friction** caused by air pushing against any moving object.

Pulleys



Levers

A **lever** is a long beam that rests on a **fulcrum.**



The **load** is the force being lifted

The **fulcrum** is what the **lever** turns on.

Effort is the force needed to move a

ISAAC NEWTON

Is considered by some as one of the most important scientists in history. One of his achievements was developing the theory of gravity. It is thought he developed the theory when he saw an apple fall from a tree.



FORCE METER – is marked in Newtons and measures the weight of an object.



What will I know by the end of the unit?

What is gravity and resistance?
Gravity is the name for the force that pulls everything down towards the centre of the earth. Resistance is a force that opposes or slows down another force.

What is air resistance?
Air resistance is a type of friction between air and another material. For example, when an aeroplane flies through the air, air particles hit the aeroplane making it more difficult for it to move through the air.

How do levers and pulleys work?
Levers make an object easier to lift. They rely on force being applied to one side. Pulleys are the wheels which are joined by a cord or belt. They can change the speed, direction or force of a movement

What are the effects of friction?
The force of friction opposes the motion of an object, which causes it to lose energy and slow down.

What is water resistance?
Water resistance is a type of force that uses friction to slow things down that are moving. It is often called drag.

Related previous knowledge: Forces

Related future learning: Working scientifically