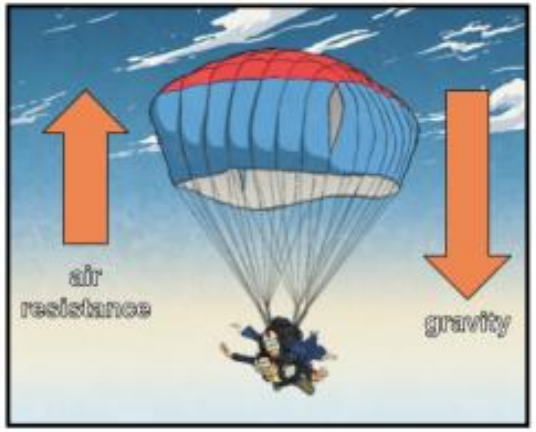
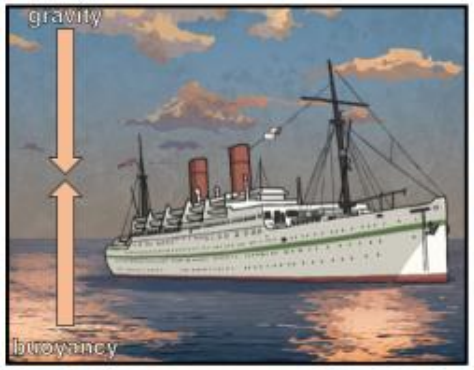
Year 5: Science – Physics: Forces

Glossary

Force	A push, pull, twist or turn
Gravity	A pushing force exerted by the Earth, it attracts objects towards the centre of the Earth.
Air Resistance	The force that air exerts on a moving object.
Water Resistance	The force that water exerts on a moving object.
Friction	The force between two moving surfaces.
Mechanisms	Machines or devices which help to achieve a result
Weight	The measure of the force of gravity on an object, measured in Newton's (N)
Mass	The measure of how much matter is inside an object, can be measured in g/kg etc.
Streamlined	when an object is shaped to minimise the effects of air or water resistance.
Pulleys	They are used to reduce the amount of force needed to lift a load. The more wheels in a pulley the less force is needed to lift the weight.
Levers	They can be sued to make a small force lift a lighter load. A lever always rests on a pivot or fulcrum.
Gears or Cogs	They are used to change speed, direction or force of a motion. When 2 gears are connected they always turn in the opposite direction to one another.
Parachute	A parachute is a device used to slow down an object that is falling towards the ground. As the parachute opens, the air resistance increases.

Key Information





Curricular Goals

What is Gravity and how does this impact our lives?
Gravity is the pulling force acting between the Earth and a falling object, for example when you drop something. Gravity pulls objects to the ground. If the earth did not have gravity then everything would float away including us!

What is friction?
Friction is a force between two surfaces that are sliding, or trying to slide, across each other. For example, when you try to push a book along the floor, friction makes this difficult. Friction always works in the direction opposite to the direction in which the object is moving, or trying to move. Friction always slows a moving object down.

What is air resistance?
Air resistance is the force on an object moving through air, such as a plane moving through the sky. Air resistance affects how fast or slowly objects move through the air.

What is water resistance?
Water resistance is the force on objects floating on or moving in water (up thrust or buoyancy). If you go swimming, you have to push the water out of the way in order to move forward. This is because there is friction between your skin and the water particles.

How do levers, pulleys and Gears have an effect?
Simple machines can be used to turn a small force into a bigger force; this means we can use these machines to accomplish things more easily. Examples of simple machines are levers (which give us extra pushing or pulling force and help us lift great weights), gears (different-sized cogs which work together and give a machine extra force or speed) and pulleys (wheels and ropes used together to lift heavy objects)

Who was Isaac Newton and why is he significant?
Sir Isaac Newton was an English mathematician and mathematician and physicist who lived from 1642-1727. The legend is that Newton discovered Gravity when he saw a falling apple while thinking about the forces of nature.