



FORCES

Useful Vocabulary

Forces: pushes and pulls

Gravity: A pulling force exerted by the Earth (or anything else which has mass)

Earth's gravitational pull: The pull that Earth exerts on an object, pulling it towards Earth's centre. It is the Earth's gravitational pull which keeps us on the ground

Weight: The measure of the force of gravity on an object

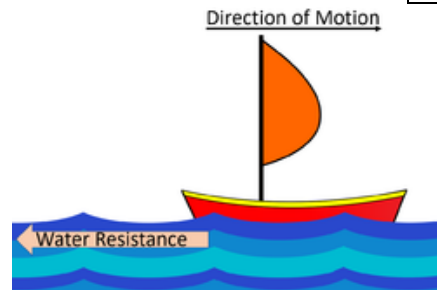
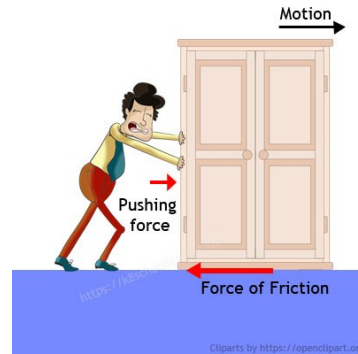
Mass: A measure of how much matter (or 'stuff') is inside an object.

Friction: A force that acts between two surfaces or objects that are moving, or trying to move, across each other

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

Buoyance: An object is buoyant if it floats. This is because the weight of the object is equal to the upthrust



twinkl.com

Key Knowledge

Forces: can make an object start to move, stop moving, change direction, move faster, change its shape and move more slowly.

Mass: how much matter is in an object and is measured in KG.

Weight: is how strongly gravity is pulling an object down. It is measured in Newtons.

Examples of forces

Water resistance and **air resistance** are forms of **friction**. **Friction** is sometimes helpful and sometimes unhelpful. For example, **air resistance** is helpful as it stops the skydiver hitting the ground at high speed. **Friction** on a bike chain can make the bike harder to pedal so it is unhelpful.

Pulleys, gears/cogs, levers

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/cogs: 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: Levers can be used to make a small **force** lift a heavier load. A lever always rests on a pivot.

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

