

Topic Vocabulary

air resistance – a force that slows objects moving through the air

contact force – a force that acts when two objects are touching

force – a push or a pull that can make an object move, stop or change direction

force meter (Newton meter) – a piece of equipment used to measure force

friction – a force that slows things down when two surfaces rub together

gear – a toothed wheel that transfers movement and force

gravity – a force that pulls objects towards the centre of the Earth

lever – a rigid bar that pivots on a point to lift or move a load

mechanism – a device that makes work easier by changing force or movement

Newton (N) – the unit used to measure force

non-contact force – a force that acts without objects touching (e.g. gravity)

pulley – a wheel and rope system used to lift heavy objects more easily

surface area – the amount of space on the outside of an object

water resistance – a force that slows objects moving through water

Useful Websites

<https://www.bbc.co.uk/bitesize/topics/znmmn39>

<https://www.bbc.co.uk/bitesize/topics/zvr3nrd>

<https://www.bbc.co.uk/bitesize/articles/zywcrdm>

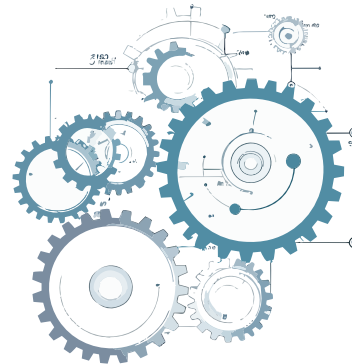
<https://www.bbc.co.uk/teach/class-clips-video/articles/zfxvcxs>

<https://www.twinkl.co.uk/homework-help/science-home-work-help/forces-facts-for-kids/top-10-forces-facts-for-kids>

<https://kids.kiddle.co/Force>

Autumn Term Science Learning Grid for Year 5

Forces



Science Facts to Learn

- A force is a push or a pull and it can make objects start moving, stop moving or change direction.
- Gravity is a force that pulls all objects towards the Earth.
- Friction, air resistance and water resistance are forces that slow objects down.
- Air resistance increases when an object has a larger surface area, such as a parachute.
- Water resistance slows objects moving through water depending on their shape.
- Heavier objects do not fall faster than lighter ones if their shape is the same.
- Forces can be measured using a force meter in Newtons (N).
- Levers, pulleys and gears are mechanisms that make work easier by reducing the force needed.
- A longer lever or more pulleys can reduce the effort needed to lift a load.
- Gears can change the direction and speed of movement.

Home Learning Challenge Ideas

Can you investigate friction at home? Try sliding the same object across different surfaces (e.g. carpet, table, towel). Which surface creates the most friction?

Record your results.

Can you design and make a parachute using materials from home? Test different sizes to see which one falls the slowest.

Can you build a simple machine? Try making a lever or pulley to lift an object and explain how it makes the job easier.

Can you observe forces in everyday life? Create a poster showing examples (e.g. pushing a door, riding a bike, objects falling).

Can you design a vehicle or boat that moves efficiently? Think about how shape affects air resistance or water resistance.

Can you research a famous scientist such as Isaac Newton or Galileo and create a fact file about their discoveries?