



Let's Get Moving

Vocabulary

air resistance: the resistance of air to forward movement.

force meter: an instrument for measuring forces.

friction: the force made when two objects rub against each other.

gravity: the force that attracts a body towards the centre of the Earth.

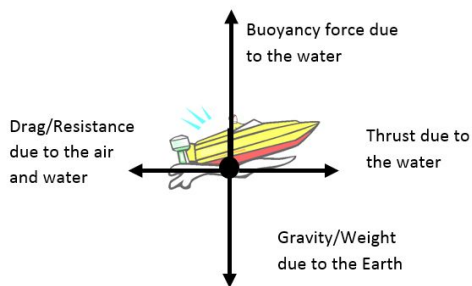
Newton: the unit of force.

non-contact force: a force that does not need to touch an object to work, e.g. magnetic force.

reliable: something that can be depended on.

water resistance: the resistance of water to forward movement.

weight: the force with which something is attracted to the Earth.



We are learning to:

- Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.
- Identify the effects of air resistance, water resistance and friction, that act between moving surfaces
- Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.

WORKING SCIENTIFICALLY

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Use test results to make predictions to set up further comparative and fair tests.
- Report, and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.
- Identify scientific evidence that has been used to support or refute ideas or arguments.

OVERVIEW

- In this topic children learn about forces and machines. They start with the force of gravity then study friction forces, including air and water resistance, before investigating how simple machines work.

PRIOR LEARNING

- A little about forces covered in the magnets topic in Year 3, so they should know what a force is and that some forces do not have to be in contact to act.

FORCES

Gravity – the force that pulls things to the ground. Gravity also holds Earth and other planets in their orbits around the sun.

Friction – friction is a force between 2 surfaces that are sliding or trying to slide across each other. Friction works in the opposite direction to which the object is moving. It slows down the moving object and also produces heat. It can be helpful in certain situations but not helpful in others.

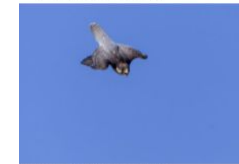
Air resistance – a type of friction between air and another material. Aeroplanes and cars are streamlined so that they can move through the air as easily as possible.

Water resistance – a type of friction between water and another material. When you go swimming there is friction between your skin and the water particles.

LET'S THINK LIKE SCIENTISTS

How do these animals use friction?

Peregrine Falcon



imiler99/shutterstock



Shark

Explain your thinking



©Mikael Hjerpe/shutterstock
Snake

ISAAC NEWTON

He 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.

