



Year 5



Forces

Statutory Requirements:

- 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

Key Knowledge:

- Forces can be classified as 'push' or 'pull'.
- We can create forces by pushing, pulling, lifting, squashing etc.
- Gravity is a pull force. Gravity pulls objects towards the ground.
- Air resistance, water resistance and friction are push forces. They act against the direction of travel.
- Levers, pulleys and gears allow small force to have a greater effect.

Key Vocabulary:

- | | |
|--------------------|-----------|
| ➤ Force | ➤ Push |
| ➤ Gravity | ➤ Pull |
| ➤ Friction | ➤ Balance |
| ➤ Air resistance | ➤ Mass |
| ➤ Up thrust | ➤ Weight |
| ➤ Water resistance | ➤ Gear |
| ➤ Newtons (N) | ➤ Lever |
| ➤ Surface area | ➤ Pulley |

Key Scientists:



Classic

Archimedes

(c.287 - c.212 BC)

Ancient Greek physicist, and engineer, famous for principles of buoyancy.



Classic

Sir Isaac Newton

(1642 – 1727)

English scientist and mathematician famous for his laws of motion.



Contemporary

Torin Clark

(???? –)

Investigating artificial gravity at the University of Colorado Boulder.

Working Scientifically:

- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- Using test results to make predictions to set up further comparative and fair tests
- Reporting and presenting 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