

Vocabulary

force – a push or a pull



contact force – a push or a pull that affects objects which are touching



frictional force – a contact force that is caused by one object being pushed across the surface of another



precision – when all of the measurements obtained in an experiment are close to each other

repeatability – the likelihood of getting similar results if the experiment is carried out again

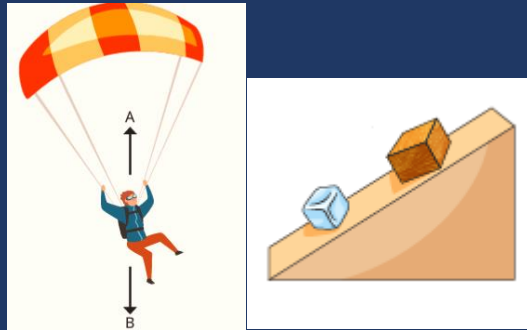
Prior Knowledge

- In Year 3, children were introduced to the concept of forces, and they explored friction. Children should know that friction is a contact force between two surfaces.
- Children have previously learnt that objects can interact by touching each other, such as pushing a toy car or pulling a drawer.
- When learning about Space, they have explored the idea of gravity on Earth and the pull from the Sun within the solar system

Key Skills

- Identify the effects of air resistance, water resistance and friction
- Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Using specific scientific vocabulary, including “independent” and “dependent” variables

Science - Forces



Key Knowledge

- Friction is a contact force that is caused by one object being pushed across the surface of another.
- A stationary object will only move when the force applied is greater than the friction, which acts in the opposite direction to the movement.
- Friction can stop or slow down a moving object, which can be useful in many contexts.
- Air resistance is a type of friction force on an object moving through air. The greater the surface area of an object, the greater the air resistance.
- Water resistance is a type of friction force on an object moving through water or another liquid.

Vocabulary

- **water resistance** – a type of friction force on an object moving through water



- **streamlined** – having a shape which reduces air or water resistance



- **air resistance** – a type of friction force on an object moving through air



- **frictional force** – a contact force that is caused by one object being pushed across the surface of another



Key Questions

- What is friction?
- How can friction help us?
- What causes friction between two surfaces?
- What is air resistance?
- How does speed affect the amount of air resistance?
- When conducting an experiment for air resistance, why is it important to drop the parachutes from the same height?
- Which shapes are most streamlined?