



We're the Kids in America.

What stops me from moving?

Applying Past Knowledge

This learning links with the lessons you had in year 3 about magnets.

- how magnets can be used in everyday life; compare how things move on different surfaces; notice that some forces need contact between two objects.
- It will also link to your learning in Year 5 about the Earth and Space.

How will I investigate successfully?

- Identify the **variables** you will need to change.
- Identify the **variables** you will need to keep the same.
- Identify what results you will need to collect.
- Use a stop watch to time accurately.
- Observe accurately.
- Record your results carefully in a table.
- Decide what your results tell you (your conclusion)
- Create a graph showing your results.



Why do objects fall to the ground?

- Unsupported objects fall towards Earth because of the **force of gravity** acting between the Earth and the falling object.

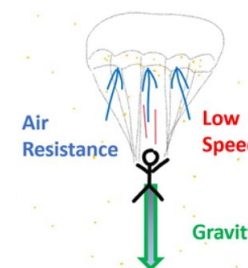


- **Gravity** was discovered by Sir Isaac Newton.



Why do objects fall at different rates?

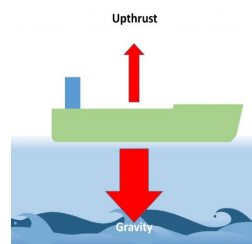
- Objects fall at different rates because of **air resistance**.
- **Air resistance** is a type of friction that occurs between air and another object.
- The greater the **air resistance** the slower the object through the air.



Key Vocabulary

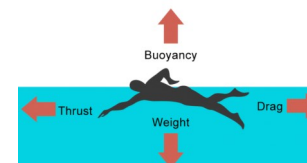
- **Force** – A push or pull upon an object.
- **Gravity** – the name for the force that pulls objects towards the centre of the Earth.
- **Friction**—the force that stops moving objects slide against each other.
- **Air Resistance** – A type of friction that slows objects down in the air.
- **Water Resistance** – A type of friction slows objects down in the water.

Why do some objects float?



- Objects float because of **water resistance** and **upthrust**.
- **Water resistance** is a type of friction that occurs between water and another object.
- The greater the **upthrust** the more the object will float.

- The greater the **water resistance** the slower the object through the water.



Why should I wear trainers for P.E.?

- **Friction** is a force between 2 surfaces that are sliding, or trying to slide, across each other.
- **Friction** slows a moving object down.
- The **rougher** the surface, the **stronger** the friction.
- The **smoother** the surface, the **weaker** the friction.

