Y3 Science: Forces & Magnets

Prior Learning

- Explore how things work. (Nursery – Forces)
- Explore and talk about different forces they can feel. (Nursery – Forces)
- Talk about the differences between materials and changes they notice. (Nursery – Forces)
- Explore the natural world around them. (Reception – Forces)
- Describe what they see, hear and feel whilst outside. (Reception – Forces)
- Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (Y2 - Uses ofeveryday materials)

Future Learning

- Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object. (Y5 - Forces)
- Identify the effects of air resistance, water resistance and friction, that act between moving surfaces. (Y5 - Forces)
- Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. (Y5 - Forces)
- Magnetic fields by plotting with compass, representation by field lines. (KS3)
- Earth's magnetism, compass and navigation. (KS3)

What Pupils Need To Know Or Do To Be Secure

- Show understanding of a concept using scientific vocabulary correctly

Key Learning

- A force is a push or a pull. When an object moves on a surface, the texture of the surface and the object affect how it moves. It may help the object to move better or it may hinder its movement e.g.ice skater compared to walking on ice in normal shoes.
- A magnet attracts magnetic material. Iron and nickel and other materials containing these, e.g. stainless steel, are magnetic. The strongest parts of a magnet are the poles.
- Magnets have two poles, a north pole and a south pole. If two like poles, e.g. two north poles, are brought together they willpush away from each other – repel. If two unlike poles, e.g. a north and south, are brought together they will pull together – attract.
- For some forces to act, there must be contact e.g. a hand opening a door, the wind pushing the trees.Some forces can act at a distance e.g. magnetism. The magnet does not need to touch the object that it attracts.

Key Vocabulary

Force, push, pull, twist, contact force, non-contact force, magnetic force, magnet, strength, bar magnet, ring magnet, button magnet, horseshoe magnet, attract, repel, magnetic material, metal, iron,steel, poles, north pole, south pole

Possible Evidence

- Can give examples of forces in everyday life
- Can give examples of objects moving differentlyon different surfaces
- Can name a range of types of magnets and showhow the poles attract and repel
- Can draw diagrams using arrows to show the attraction and repulsion between the poles of magnets