



Forces and Magnets

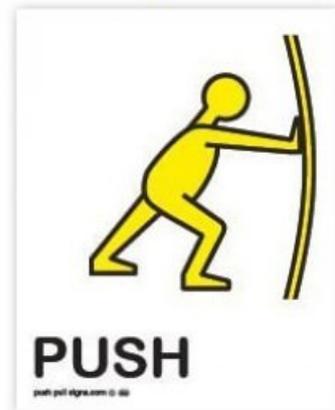
Year 3/4
Autumn Term

Background Information

We use forces all the time when we push or pull things, lift or throw things, squash or break things. Forces are part of our everyday life—they explain why we fall off our chair but don't fall off the planet! Objects can exert a force even when they aren't touching such as a magnet attracting a piece of steel or the Sun's gravity pulling the Earth through space. It may seem like magic, but it isn't! Forces appear whenever two objects interact. Magnets also impact on our lives hugely. Many things around us work by magnetism or electromagnetism—everything with an electric motor in it, from your electric toothbrush to your lawn mower, fridge doors, computer hard-drives, headphones and it's how all of our recycling gets sorted too!

In this unit, the children will:

- Compare how things move on different surfaces
- Notice that some forces need contact between two objects, but magnetic forces can act at a distance
- Observe how magnets attract or repel each other and attract some materials and not others
- Compare and group materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- Describe magnets as having two poles
- Predict whether two magnets will attract or repel each other, depending on which poles are facing



Key Questions:

- How do things move?
- What would happen if we put lots of magnets together?
- Why do some materials attract and not others?

Key Vocabulary:

Force– a push or pull.

Contact force– A force where objects need to touch each other to push or pull.

Non-contact force– A force where objects do not have to touch each other to push or pull.

Magnetic force– A force between magnets.

Magnet– A material that produces a magnetic field.

Attract– To pull together.

Repel– To push away.

Magnetic pole– Where the magnetic field is strongest.

