

# Year 3 Science: Forces and Magnets

## Key Questions

Can you describe the effect of 1) simple forces that act at a distance  
2) magnetic forces including those between like and unlike magnetic poles

### Knowledge

- To compare how things move on different surfaces.
- Some forces need contact between two objects, but magnetic forces can act at a distance.
- Magnets attract or repel each other and attract some materials and not others.
- To compare and group together a variety of everyday materials based on whether they are attracted to a magnet and identify some magnetic materials.
- Magnets have two poles.
- To predict whether two magnets will attract or repel each other, depending on which poles are facing.

### Skills

#### Observe and Compare

Look closely, to gather more information and viewpoints. What do you notice about...? What happens when...? Make comparisons to what they already know and express relationships between things. How are these the same and/or different? Where have you seen similar?

#### Sort and Organise

Classify things by recognisable traits and begin to understand that objects can belong to more than one group at a time. Record findings in pictures and graphs.

#### Predict

Question and speculate, based on prior knowledge. What will happen if? Begin to generalise about things.

#### Experiment

Plan investigation How can we test it...? Discuss appropriate form of scientific enquiry (such as observing changes over time.) Test out predictions and try out ideas. Make systematic observations and take accurate measurements and record findings and evaluate whether their test was fair

#### Conclude

Communicate the findings of their experiments with others, taking their concrete experience, verbalising it, and representing the information abstractly with graphs, drawings, charts, and field books. Use results to draw simple conclusions using scientific evidence to support their findings

#### Apply

Apply the understandings gained from the experiment to a larger field of experience, broaden the scope of their experiments, try them again with new materials, and see if their understandings are consistent.

What would happen if?

Key Vocabulary	Definition
Magnets	A magnet is an object that has a magnetic field (an invisible pattern of magnetism).
Attract	When two different poles are close, they attract (pull together) each other.
Repel	When two of the same poles are placed close together they repel (push apart) each other.
Poles	Magnets have two ends. We call these their north pole and south pole.
Magnetic	A magnet is a rock or a piece of metal that can pull certain types of metal toward itself. The force of magnets, called magnetism, is a basic force of nature, like electricity and gravity. Magnetism works over a distance. This means that a magnet does not have to be touching an object to pull it.
Force	A force is a push or pull. Sometimes forces cause objects to move, and sometimes forces slow, stop, or change the direction of an object's motion. Gravity is an example of a force that pulls all objects toward the centre of the Earth. When you jump on a trampoline, gravity constantly pulls you down.
Materials	<b>Magnetic materials</b> are always made of metal, but not all metals are magnetic. Iron is magnetic, so any metal with iron in it will be attracted to a magnet.
Strength	How intense the magnetic field is – how strong the magnets repel or attract.

