PRIMARY 3 SCIENCE

Discover the power of magnets

NAME: _____

Observe • Compare • Explain

MAGNETIC MATERIALS

Attracted to magnets:
iron and steel.

Not attracted: wood, plastic, rubber, glass, ceramic and fabric. Aluminium and copper are also **non-magnetic metals**.

Not all metals are magnetic!

INTERACTIONS

Magnets interact with magnets and magnetic materials.

POLES & DIRECTION

A magnet has **North (N)** and **South (S)** poles.
Attraction is **strongest at its poles**.
A freely suspended magnet rests in the **North–South direction**, like a compass.

ATTRACT OR REPEL?

Unlike poles attract (pull together).



Like poles repel (push apart).



N–N and S–S repel.
Repulsion confirms an object is a magnet.

MAKE A MAGNET

Stroke method
Stroke an iron or steel object using the **same pole** of a magnet, in the **same direction**, repeatedly.
Lift the magnet to return to the start.
More strokes → stronger magnet.

Electrical method
Coil wire around an iron nail.
Connect the wire ends to a battery.
This makes an **electromagnet**.

STRENGTH & FAIR TESTS

Make an electromagnet stronger:
- Increase the **number of wire turns**.
- Increase the **number of batteries**.

Measure: number of steel clips attracted.
More clips indicates a stronger magnet.

Fair test: change **one variable** only.
Keep other variables the same.
For example, change wire turns but keep the nail, batteries and clips the same.
Repeat the test for more reliable results.

MAGNETS AROUND US

Compass: helps us find direction.

Fridge door: magnetic strips help keep the door closed.

Scrapyard crane: electromagnet lifts iron and steel objects.

Whiteboard: magnets stick to the steel sheet below its surface.

Doorstop: holds a door in place.

Experiment with teacher guidance: use batteries only; disconnect promptly because wires may get hot.

Based on Inspiring Science Primary 3, Interactions (pp. 100–120). Summary of key ideas.