Magnets and induced magnetism

Teacher / technician

YEAR 11 / LESSON 79 / PHYSICS + SCIENCE (DOUBLE AWARD)

Staff preparation and answer guidance. Keep separate from student sheets. Record actual measurements separately from labelled practice examples.

Coverage and delivery

Shared Physics / Double Award: 6.2, 6.3, 6.5. Attraction, repulsion, hard and soft magnetic materials.

Allow about 60 minutes. Follow the student sequence and use the answers to check reasoning.

Requisition • class of 30, ten groups of three

Item	Per pair / setup	Class total
Low-strength bar magnets	2 per group	20
Six labelled material samples and two magnetic comparison strips	1 set per group	10 sets
Paperclips	5 per group	50
Booklets	1 per learner	30

Immediate safety

Use low-strength school magnets, not small powerful rare-earth magnets. Keep magnets and clips out of mouths and away from sensitive devices or medical implants according to device guidance. Move poles slowly to avoid pinching; use smooth strips, not sharp nails. Staff arrange an observation-only role where needed.

Preparation and delivery

Read alongside the student method

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1. Check sample identities and initial magnetisation. Select a genuine soft-iron comparison strip and a known hard magnetic material.

2. Pilot the induction observation and record any remanence honestly. Do not promise a fixed clip count or complete demagnetisation.

Close of lesson

• Count clips and samples, store magnets with the recommended keepers and clear benches.

Check before teaching

Check the cards, reference data and quantities against this requisition. Keep the staff answer guide separate until the checking stage. Supplied numerical practice datasets are labelled examples; they are not class measurements.

Answers and teaching notes

Expected explanations • do not give as experimental observations

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- No.
- Like poles.
- A material becomes magnetised in an applied magnetic field.
- It magnetises and demagnetises readily.
- No; alloy and treatment matter.
- An unmagnetised attracted material can be induced, but repulsion shows an interacting magnetic pole.

References and provenance

Pearson Physics specification

Prepared 22 November 2026. Original wording, tables and questions. Sources inform the concepts and technique; the lesson scope and classroom quantities are explicitly described here. No laboratory trial or final school risk approval is claimed.