

Sorting magnetic and not magnetic

Lesson at a glance

Open with the recycling-centre magnet that lifts only some rubbish, then demo a paperclip jumping to a chunky magnet. Infants thumbs-guess a few objects, then at tables test about three each and sort into two hoops: the magnet pulls it, or it does not. Notice that many pulled things feel hard and shiny like metal (retest soft foil so shiny ≠ magnetic). Finish with the picture-sort interactive and one or two drawings per hoop in the Investigation Journal.

Learning objectives

- Test objects with a magnet and sort into magnetic and not magnetic
- Notice that many magnetic objects are metal
- Say the sorting reason: the magnet pulls it or it does not

Before the bell – prep

Day before: one mixed tray per group (paperclip, steel nail, wooden peg, crayon, plastic brick, eraser, coin, soft foil ball) plus one or two chunky magnets and two sorting hoops or labelled trays. Print the Investigation Journal page. Cover trays until Test with Magnets.

Materials

Item	Qty	Per	Source	Low-cost substitute
chunky magnets (large bar or disc magnets, too big to swallow)	2	group	school kit	large fridge magnets that are firmly sealed and too big for a mouth
mixed objects tray (steel paperclips, steel nail, coins, wooden pegs, crayons, plastic bricks, rubber erasers, soft foil ball, plastic lids)	1	group	classroom	any safe classroom odds and ends with a clear mix of steel items and wood, plastic or rubber
sorting hoops (or two shallow trays) with simple picture labels	2	group	classroom	two sheets of paper or two cardboard box lids labelled with a magnet picture and a cross
Investigation Journal page	1	pupil	classroom	a plain page folded in half with the two sort groups drawn as circles

**Safety watch-point**

Chunky magnets only — never small enough to fit fully in a mouth. Keep magnets away from mouths; count every magnet back into the tub at tidy.

**Teaching moves**

- **Getting Started:** Hold one chunky magnet and let it quietly pull a paperclip from your palm so the class sees the jump. Keep trays covered. Link lightly to recycling crews who pull metal from rubbish to reuse.
- **Look and Wonder:** Hold up three or four objects one at a time (paperclip, peg, nail, crayon). Class shows thumbs up or down — no testing yet. Speak only the two sort labels. Model one full cycle aloud with a nail before groups start.
- **Test with Magnets:** Short table bursts: shared demo object first, then each child tests about three. Circulate asking ‘What happened? Did it jump?’ One-minute warning for fair turns. Keep magnets away from mouths; count them back later.
- **Sort into Hoops:** Children move dry tested objects into the two labelled hoops. Listen for the reason said aloud and revoice it. If groups disagree on the same kind of object, retest together — the magnet settles it.
- **What Do We Notice?:** Gather eyes on one magnetic hoop. Named turns: what feels the same? Hold up soft foil and retest in front of everyone so they see a shiny thing that does not pull. Keep the message light: many pulled things feel like metal, and we still only know when we test.
- **Sort on the Board:** Open the picture-sort interactive after the real tests. Read ‘Does the magnet pull it?’ each time. Invite different children to place paperclip, nail, peg, crayon, plastic brick, eraser. Follow the class’s real results if a nail behaved differently.
- **Draw Your Sort:** Hand out the Investigation Journal page. Success bar is light: one or two drawings in each group; labels optional. Ask them to point and say the reason. Early-stop at about four minutes so two minutes remain on the carpet.

**What it should show**

Expect steel paperclips and nails (and some coins) in the magnetic hoop; peg, crayon, plastic brick, eraser and soft foil in the not-magnetic hoop. Most infants will notice many pulled things feel hard and shiny. If foil or a drinks can is sorted as magnetic, retest together — shiny is not the rule.

**Misconceptions & interventions**

- **‘All metal sticks’ or ‘shiny things stick to magnets.’** — Retest the soft foil ball (or drinks-can ring pull) in front of everyone. Revoice: many pulled things feel like metal, but we only know when we test.
- **‘Heavy things stick’ or guessing by look without testing.** — Point back to the two hoops and the real magnet: ‘We sort by what the magnet did, not by how heavy or shiny it looked.’ Retest the disputed object together.



Differentiation

Emerging	Developing	Proficient
• Work with the teacher on two clear objects only (paperclip and wooden peg) and place them into the hoops together, saying the pull / no-pull reason.	• Test about three tray objects independently and draw one in each hoop on the Investigation Journal page, saying the reason when asked.	• Try a trickier object such as foil or a coin, say what they noticed, and circle one surprise on their journal page.

Cross-curricular hook

Link to Aistear sorting and oral language: pupils justify each place with ‘the magnet pulls it’ or ‘it does not’.