

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 three or four objects, then in small groups test a mixed tray 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 foil so shiny-does-not-always-stick). Close with the picture-sort interactive on the IWB 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

Print one Investigation Journal page per child. Per small group: one mixed objects tray (paperclip, steel nail, wooden peg, crayon, plastic brick, eraser, soft foil ball or can ring-pull, a coin) and one or two chunky magnets only. Two sorting hoops or labelled trays ready beside each group. Keep magnet trays covered 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	provided printable	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:** Keep it light. Hold one chunky magnet and let it quietly pull a paperclip from your palm so the class sees the jump. Name the recycling-crew link in one sentence. Leave the full trays covered on side tables.
- **Look and Wonder:** Hold up three or four objects one at a time (paperclip, wooden peg, steel nail, crayon). Class shows thumbs up or down — do not test yet. Speak only the two sort labels; leave the word metal off the board. Model one full cycle aloud with a nail before groups start.
- **Test with Magnets:** Start with one shared demo object at each table, then set the rule: each child tests about three objects. Give a one-minute warning so turns stay fair. Circulate asking What happened? Did it jump? Did nothing happen? Keep the six minutes lively.
- **Sort into Hoops:** Label hoops with tick/cross magnet picture cards if you have them. Children move dry tested objects and say the reason as they place each one. Revoice: the magnet pulled the paperclip, so it goes in the magnetic hoop. If two groups disagree on the same kind of object, retest together.
- **What Do We Notice?:** Gather eyes on one magnetic hoop. Named whole-class turns: look and gently touch — draw out hard, shiny, cold-feeling things. Must-do: hold up the soft foil ball (or ring-pull), retest in front of everyone, and keep the infant message simple — many pulled things feel like metal, and we only know when we test.
- **Sort on the Board:** Open the picture-sort interactive in explore mode after the real magnets, never before. Read Does the magnet pull it? every time. Six cards: paperclip, nail, peg, crayon, plastic brick, eraser. Invite different children; if a class test differed from the default, follow the real magnet and say so out loud.
- **Draw Your Sort:** Hand out the Investigation Journal page. Success bar is light: one or two drawings in each group; labels optional. As you circulate, ask them to point and say the magnet pulls it or it does not. Early-stop at about four minutes so two minutes remain on the carpet.
- **Make Sense and Tidy:** Take one or two child answers, revoice the two sort lines and the hard-and-shiny noticing, then move straight into tidy. Count every magnet back into the tub; wipe trays; sleeves and floor check.

**What it should show**

Expect steel paperclips and nails to jump to the magnet; wooden pegs, crayons, plastic bricks and erasers to stay put. Soft foil or a drinks-can ring-pull usually does not stick even though it looks shiny — use that as the class retest. Many magnetic objects feel hard and shiny like metal. A surprising stick often means the object had a hidden steel part or a child pushed it onto the magnet rather than holding the magnet near.





Misconceptions & interventions

- **All metal sticks — or anything shiny will jump to the magnet.** — Hold up the soft foil ball or ring-pull and retest in front of everyone. Revoice: it looks shiny, but the magnet did not pull it — we only know when we test.
- **Heavy things stick and light things do not.** — Compare a light steel paperclip that jumps with a heavier wooden peg or plastic brick that does not. Point back to the two hoop labels: the rule is what the magnet does, not how heavy it feels.

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. • On the Investigation Journal page, one drawing in each group is enough; adult can scribe a short label if wanted.	• Test about three tray objects independently and say the sorting reason aloud as each goes into a hoop. • On the journal page, draw one or two in each group and point to say the magnet pulls it or it does not.	• Try a trickier tray item such as foil or a coin, notice what happens, and tell the group. • Circle one surprise on the journal page and say why it was unexpected; help retest if another group disagrees.

Cross-curricular hook

Link to Aistear sorting and Maths early data — two hoop groups is a simple yes/no sort children can count.