

Magnets: guess what they'll pull

Lesson at a glance

Hold up one chunky magnet and take a few playful class guesses about what it can pull — no testing yet. Model one live guess-then-test cycle with a paperclip, then take a thumbs vote on a wooden peg. Groups of three or four work a mixed tray: guess first, test slowly, sort into yes/no piles. Children draw one pulled and one not-pulled object on the Investigation Journal page. Close with a display-only talk on matched guesses and surprises.

Learning objectives

- Guess whether a magnet will pull an object before testing
- Test objects safely with a chunky magnet
- Notice whether the guess matched what the magnet did

Before the bell – prep

Day before: gather one chunky magnet and one mixed tray per group of 3–4. Pre-test every object yourself. Include paperclip, spoon, large coin (€1/50c), wooden peg, plastic brick, crayon, rubber, fabric scrap, foil ball — at least two surprises. Mark yes/no spaces on each table. Print one Investigation Journal drawing page per child. Chunky magnets only.

Materials

Item	Qty	Per	Source	Low-cost substitute
chunky bar or block magnets (large, child-safe)	1	group	school kit	one large fridge magnet per group (still chunky; never button-sized)
mixed objects tray (large paperclip, metal spoon pre-tested, larger coin e.g. 50c or €1, large safe key if pre-checked, wooden peg, plastic brick, crayon, rubber, small fabric scrap, aluminium foil ball)	1	group	classroom	any safe classroom mix of larger metal and non-metal bits from the stationery drawer (avoid tiny loose pieces)
small trays or clear table spaces labelled yes and no (for sorting piles)	2	group	classroom	two sheets of paper marked with a tick and a cross
Investigation Journal page	1	pupil	platform printable	blank A4 paper for drawing one pulled and one not-pulled object

Safety watch-point

Chunky magnets only, never near mouths. Children sit while testing. Small metal tray items stay on the table, one at a time, under adult watch — not in pockets or near faces.

Teaching moves

- **Getting Started:** Hold up one chunky magnet only. Take three or four quick hands-up ideas. Keep the tone playful — every guess is welcome. Do not start testing yet.
- **Guess then find out:** Model one worked cycle live with the paperclip only: I wonder → I guess → I test slowly → I noticed the jump → my guess matched. Then hold up the wooden peg for a class thumbs-up/thumbs-down vote. Do not reveal the answer — send groups to tables after the vote.
- **Magnet hunt: guess then test:** One magnet and one tray per group of three or four. Watch that the guess comes before the magnet touches the object; point to guess → test → sort if groups race. Circulate and ask: What do you notice? Did your guess match? Slow any group that grabs several objects at once.
- **Watch and draw:** Hand out the Investigation Journal page now. Hold one up and show the two drawing spaces: one pulled, one not pulled. Two drawings are enough; a surprise mark or circle is optional only. Drawing is the record — no long sentences.
- **Make-sense talk:** Whole-class oral talk only. Revoice real yes-pile and no-pile objects children offer. If a spoon or coin stayed still in some groups, treat it as useful data rather than correcting toward a metal rule. Keep it gentle: notice, guess, test, compare.

What it should show

Most groups will find the paperclip pulls and wood, plastic, crayon, rubber and fabric do not. Spoons and coins may stick in some groups and stay still in others — treat that as real data, not an error. Foil often does not pull strongly. Affirm careful sorting; do not push a full 'all metal' rule today. Redirect only if a child sorts without testing.

Misconceptions & interventions

- **Children think the magnet will pull everything on the tray.** — Point to a clear no-pile object (peg or plastic brick) after testing: 'Some things are pulled, some are not — we find out by testing.' Keep the rule that simple.
- **Children think the magnet only pulls heavy things, or only things that look shiny.** — Hold a light paperclip that stuck beside a heavier wooden peg that did not. Ask: 'Was it about heavy, or something else? We keep testing to find out.'

Differentiation

Emerging	Developing	Proficient
• Let the child point and use thumbs only; an adult or peer models the sentence 'I guess... then I test...' without sorting for them.	• Prompt a short why after the test ('I think metal') and ask whether the guess matched.	• Fast finishers re-test one surprised object and tell a partner whether the guess matched — no extra kit.

Cross-curricular hook

Links to Aistear/playful sorting and oral language — children justify a thumbs guess in a short spoken sentence.