

Magnets: guess what they'll pull

Lesson at a glance

Hold up one chunky magnet and gather quick class guesses about what it can pull. Model guess-then-test on a fixed classroom metal (door handle or chair leg), then thumbs-vote on a wooden peg. Groups of three or four take turns guessing, testing tray objects with one magnet, and sorting into yes/no piles. Children draw one pulled and one not-pulled object in the Investigation Journal. Close with a short display-only talk on matches 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 tray object yourself. Mark yes/no spaces on each table. Print one Investigation Journal drawing page per child. Use only large, sit-down-safe items (paperclip, spoon, 50c/€1, peg, brick, crayon, rubber, fabric, foil ball).

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	provided 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 under adult watch—one at a time, not in pockets or near faces.

Teaching moves

- **Getting Started:** Hold up one chunky magnet only—no testing yet. Take three or four playful guesses. Keep magnets chunky and away from mouths from the first moment.
- **Guess then find out:** Write the short board line, then model live on a door handle, chair leg or radiator—not a tray object. Say ‘I guess... I test... I noticed...’ slowly so the class sees the grab or the miss. Finish with a thumbs vote on the wooden peg; hold the answer so groups discover it themselves.
- **Magnet hunt: guess then test:** Send groups of three or four to tables—one magnet and one tray each. Enforce guess before the magnet touches; point to the board if anyone skips. Circulate asking ‘Did your guess match?’ Slow racers to one object at a time. Never present the spoon as a guaranteed yes.
- **Watch and draw:** Hand out the Investigation Journal page and show the two drawing spaces: one pulled, one not pulled. Two drawings are enough; a surprise mark is optional only. Drawing is the record—no long sentences.
- **Make-sense talk:** Whole-class oral talk only. Revoice real yes- and no-pile objects children name. Treat a still spoon or coin as useful data, not an error. Keep it gentle—no all-metal or all-heavy rule today.

What it should show

Typically paperclips and some keys stick; wooden pegs, plastic bricks, crayons, rubber, fabric and foil balls stay still. Spoons and coins vary by type—some stick, some barely or not at all. Affirm whatever each group actually found. A ‘surprising’ no on something shiny is good noticing, not a setup error.

Misconceptions & interventions

- **‘The magnet pulls everything’ or ‘it only pulls heavy things.’** — Keep the rule simple: some things are pulled, some are not—we find out by testing. Point to a light paperclip that stuck and a heavy wooden peg that did not.
- **Children test before guessing, or wave the magnet at several objects at once.** — Stop the group, point to the board order guess → test → sort, and restart with one object and a spoken guess first.

Differentiation

Emerging	Developing	Proficient
• Allow thumbs-only guesses; 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 object that surprised them and tell a partner whether the guess matched.

Cross-curricular hook

Links to oral language: children practise ‘I guess... I noticed...’ in full turns before drawing their yes/no piles.