

Magnets: guess what they'll pull

Lesson at a glance

Hold up one chunky magnet and collect quick ideas about what it might pull. Model one live guess-then-test cycle with a paperclip, then take a class thumbs vote on a wooden peg. Groups of three or four work a mixed object tray: guess, test slowly, sort into yes/no piles. Each child draws one pulled and one not-pulled object on the Investigation Journal page, then a talk compares guesses with what really happened.

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, chunky magnets — no small or loose ones.

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 items stay on the table, one at a time, under adult watch.



Teaching moves

- **Getting Started:** Hold up one chunky magnet only — no testing yet. Take three or four quick ideas with hands up. Keep every guess welcome and playful.
- **Guess then find out:** Model one full cycle live with the paperclip: wonder, guess, bring the magnet slowly, notice the jump, check if the 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 with one magnet and one tray each.
- **Magnet hunt: guess then test:** Children take short turns: guess aloud first, test slowly, place in the yes or no pile. Watch that the guess always comes before the magnet touches. Circulate asking 'What do you notice? Did your guess match?' Slow any group that races — one object at a time.
- **Watch and draw:** Hand out the Investigation Journal page and show the two drawing spaces. Say clearly: two drawings are enough — one pulled, one not pulled. An optional circle or mark for a surprise is fine; no long writing.
- **Make-sense talk:** Whole-class oral talk only. Revoice real yes-pile and no-pile objects children name. Treat a spoon or coin that stayed still as useful data, not a wrong answer. Keep it gentle — no metal rule today.



What it should show

Most groups will see the paperclip stick and wood, plastic, crayon, rubber and fabric stay still. Foil often does not pull strongly. Some spoons or coins may stick weakly or not at all — affirm that as real finding, not error. Typical drawings show one stuck object and one that stayed put.



Misconceptions & interventions

- **Children think the magnet will pull everything on the tray.** — Point to their no pile and say 'some things are pulled, some are not — we find out by testing.' Keep the rule that simple today.
- **Children think only heavy things stick, or that a guess is wrong if it did not match.** — Name a light object that stuck (paperclip) and a heavier one that may not. Praise a surprise: 'That guess helped us learn.'



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.

Cross-curricular hook

Links to oral language: children practise 'I guess...' and 'I noticed...' when sharing yes and no piles.