

Pushes and pulls all around us

Lesson at a glance

Open with three everyday puzzles — a door opening, dough going flat, an elastic band lengthening — and ask if they are the same kind of thing. Name force as a push or a pull through three quick live models (door start, book stop, dough squash). Pupils predict one push and one pull, then rotate a classroom force hunt using doors, drawers, chairs, books and shared dough/elastic stations. Back at seats they record at least three finds in the Investigation Journal. Close with a display-only share of surprising finds.

Learning objectives

- Identify pushes and pulls in everyday school examples, including when they squash or stretch something
- Describe how a force can make something start, stop or change shape
- Record at least three force examples with what happened

Before the bell – prep

Set two shared shape-change tables with one small ball of modelling dough and two wide elastic bands on each. Clear door, drawer, chair and book as movement stops already in the room. Optional yard kit: one soft ball and a marked boundary. Board ready with Push / Pull columns for predictions and three class finds.

Materials

Item	Qty	Per	Source	Low-cost substitute
modelling dough / play-dough (shared station balls)	2	class	classroom	soft modelling clay or a piece of blu-tack
elastic bands (wide, classroom type)	4	class	classroom	a strip of stretchy fabric or a hair bobble
everyday push and pull objects already in the room (door, drawer, chair, book)	1	class	classroom	any safe classroom objects children may push or pull gently
soft playground ball (optional outdoor stop)	1	class	school kit	skip the ball stop and use the school gate or a swing only



Safety watch-point

Push chairs and doors gently; pull elastic bands low and away from faces; keep the run clear of feet; outdoors stay inside the agreed boundary.



Teaching moves

- **Getting Started:** Keep it light and oral. Point to the classroom door, a ball of dough or an elastic band if handy, but do not open the full hunt. Take three or four quick guesses; hold back the word force unless a pupil offers it.
- **What is a force?:** Run the three think-alouds in about 3–4 minutes: push the door to start it, gently stop a rolling book with a flat hand, squash the dough once. After each, revoice push or pull and what happened. Stress the hierarchy: every force today is first a push or a pull; squash and stretch name the shape change, not a third force type.
- **What forces will we find?:** Pairs name one predicted push and one pull aloud; jot two or three on the board under Push / Pull only. If a pair names a shape change, park it beside the matching push or pull. Remind them unexpected finds count. Quick safety rules and point out the two shared dough/elastic stations before leaving the carpet.
- **Force hunt:** Rotate groups stop to stop, or walk the whole class if space is tight. At every stop ask the two-step questions: push or pull? Start, stop, or change shape? After one or two stops, freeze 20 seconds for pairs to say place, force word and result; revoice one clear find and jot three short class hooks on the board for the recording beat.
- **Name the force:** Send pupils to the Investigation Journal page only — no extra homemade sheet. Tell them what to record: place, push or pull, and what happened. Point back to the three board finds if anyone blanks. Circulate with the prompt push or pull first; accept labelled drawings from slower writers.
- **Forces people have always used:** Display-only science talk. Take several hunt shares first. Only if time allows, weave one familiar object already used (door, gate, chair push) and note people used pushes and pulls long before the word force. Keep any Irish flavour brief — a field gate, a wheelbarrow, a GAA push on a ball.



What it should show

Expect a mix of pushes (door, chair, book stop, dough squash) and pulls (drawer, elastic stretch, bag or gate). Each journal entry should name place, push or pull, and start / stop / shape change. A surprising blank page usually means the board hooks were skipped; send them back to the three class finds. Squash or stretch written as the force word needs a revoice: push or pull first, shape change second.





Misconceptions & interventions

- **A force only counts if it is a big shove, or if something is already moving.** — Hold the gently squashed dough and the still-stretched band: a gentle push, a held stretch and a squash that changes shape are all forces, even when nothing races across the room.
- **Pupils treat squash and stretch as force types instead of push and pull.** — Revoice on the spot: Push is the force; squash is what happened to the shape. Have them add the push or pull word beside any squash or stretch they wrote.
- **Only machines or big tools make forces — not our own hands.** — Point back to their hands on the hunt door, drawer or dough and ask who applied that force.

Differentiation

Emerging	Developing	Proficient
• Let the pupil point and say push or pull with a partner; accept a labelled drawing of place and force word rather than full sentences.	• Prompt a second look-for at one stop: find a clear stop, or name whether the shape change was a squash (push) or a stretch (pull).	• Challenge them to find a force that both starts movement and changes shape, or two different pulls, and explain both results.

Cross-curricular hook

Link to oral language: pairs must justify push or pull in a full sentence before recording each find.