

# Make it move further



### Lesson at a glance

Open by holding up one toy car or soft ball and asking whether a tiny push or a big push will send it further — hands-up only, no roll yet. A short ramp-and-roll interactive on the IWB practises changing one thing, then groups rotate through one or two shared floor lanes for a real flat-floor test: same object, same start line, one small push and one big push marked S and B. Pupils sketch both marks on the Investigation Journal page and circle which went further, then talk playground links in a close.

### Learning objectives

- Predict whether a bigger push will make an object move further
- Compare how far a small push and a big push send the same object

### Before the bell – prep

Clear one or two floor lanes (2–3 m) and mark a shared start line with masking tape before the bell. One toy car or soft ball per lane, spare tape/sticky notes labelled S and B, and Investigation Journal pages ready to hand out as groups finish.

### Materials

| Item                                          | Qty    | Per   | Source     | Low-cost substitute                                                         |
|-----------------------------------------------|--------|-------|------------|-----------------------------------------------------------------------------|
| toy car or soft ball                          | 1      | lane  | school kit | a tennis ball, marble, or any small rolling toy                             |
| masking tape for starting line and stop marks | 1      | class | classroom  | chalk on a hard floor, or sticky notes as stop markers                      |
| metre stick or measuring tape                 | 1      | class | classroom  | count floor tiles between marks, or use a string and compare lengths by eye |
| clear floor lane space (about 2 to 3 metres)  | 1 or 2 | class | classroom  | one shared class lane if the room is small; groups take turns               |
| Investigation Journal page                    | 1      | pupil | classroom  | plain paper for a quick drawing of two lanes with stop marks                |

**Safety watch-point**

Roll along the floor away from feet and faces; walk around lanes, never step into a roll; peel up all floor tape before the next class walks through.

**Teaching moves**

- **Getting Started:** Hold the same car or ball groups will use later — do not roll it. Ask which push will go further and take a quick show of hands. Accept every idea and say we will find out by trying.
- **What makes something go further?:** Teach with gestures on the real object: small hand push, bigger hand push, point further down the floor. Keep board text short; do not read the concept table as a glossary.
- **Practise changing one thing:** Open ramp-and-roll on the IWB in explore mode (gentle slope, smooth surface, tiles on). Run once, leave the mark, steepen the slope only, run again. Ask what stayed the same and which mark is further, then bridge clearly: real test is flat floor, small then big push, no ramp. Cap at about 5 minutes.
- **Small push, big push:** Model the full cycle on one lane first (~2 min): predict, small push mark S, big push mark B, observe. Then rotate groups of 3–4 for one small and one big push only (1–2 min each). While groups wait, keep them in with class questions — no separate desk task. If the queue is long, stop new groups and finish with a shared class demo so everyone still has S and B marks to record.
- **Mark and compare:** Sketch two simple lanes on the board with S near the start and B further along, then circle B. Main ask for every child: draw the two stop marks and circle which went further. Point stuck pupils at their real floor tape.
- **Pushes in our games:** Whole-class talk only — no extra writing. Draw out that the big push went further and that object, line and floor stayed the same. Link to soft pass vs hard kick, gentle throw vs stronger throw, and when a small push is the smarter choice.

**What it should show**

On a smooth classroom floor the big-push mark should clearly sit further from the start than the small-push mark. If both look similar, the “big” push was not big enough — remodel a clearer contrast. A car that stops oddly short usually hit a bag, foot or chair; clear the lane and re-run.

**Misconceptions & interventions**

- **“The heavier car always goes further” or “the second try wins because it’s better.”** — Hold up the same car and point at the same tape line: “We keep the car and the start the same. The only thing we change is how hard we push.”
- **Children treat the IWB ramp demo as today’s real test and want to keep using a slope.** — Close the interactive after one clear pair of runs and say: “That was only practise at changing one thing. Our real test is flat floor — no ramp.”



Differentiation

| Emerging                                                                                                                                                                                                                                                        | Developing                                                                                                                                                                                                                                                                       | Proficient                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Pair at the teacher lane and point to the real S and B tape: “Which mark is further from the start? Draw that and circle it.”</li><li>• Accept drawing-only journal work — two marks and a circle are enough.</li></ul> | <ul style="list-style-type: none"><li>• After circling further, add a tick for their prediction and one short phrase about what they found out.</li><li>• While waiting, answer the class questions: what must stay the same, and does this roll match the prediction?</li></ul> | <ul style="list-style-type: none"><li>• If a big push hit something, note the blocked lane and explain why that result does not count.</li><li>• Stretch talk: when is a small push smarter than a big one (control, safety, not hurting a friend)?</li></ul> |

Cross-curricular hook

Link to PE games — soft pass versus hard kick — and to Maths length language: further, nearer, more centimetres along the lane.