

materials

Which material is waterproof?

Lesson at a glance

Open with a hands-up: paper bag or raincoat in Irish rain? Name waterproof and absorb, then hold up four dry squares — soft fabric, paper, foil, plastic — for a quick prediction mark on the Investigation Journal. Groups drip the same small amount of water on each square over a tray, watching whether it stays on top, soaks in or goes through. Record observations beside the predictions, then talk why raincoats and lunchbox lids use waterproof materials.

Learning objectives

- Predict which materials will keep water out and say why
- Observe and record which material squares let water through and which do not

Before the bell – prep

Cut four dry squares per group the day before: soft fabric scrap, copy paper, foil, clear plastic wallet. One shallow tray and dropper or spoon per group; jug of water ready. Hold a real raincoat or waterproof jacket if you have one. Newspaper for wet squares; Investigation Journal pages out.

**Materials**

Item	Qty	Per	Source	Low-cost substitute
fabric squares (cotton scrap or old t-shirt, about 10 cm)	1	group	classroom	a scrap from an old tea towel or sock
paper squares (copy paper, about 10 cm)	1	group	classroom	newspaper squares
foil squares (kitchen foil, about 10 cm)	1	group	supermarket	the foil lid from a clean yoghurt pot, flattened
plastic squares (cut from a clear document wallet or clean food bag)	1	group	classroom	a piece of clean plastic packaging or a zip-bag panel
shallow tray	1	group	classroom	a baking tray or large plastic lid
dropper or small spoon	1	group	classroom	a clean medicine syringe without needle, or a teaspoon
small jug of water	1	group	classroom	a cup of water from the tap
raincoat or waterproof jacket to show	1	class	classroom	a picture of a raincoat, or a plastic book bag
cloths or paper towels for spills	4	class	classroom	old tea towels
Investigation Journal page	1	pupil	provided printable	plain paper with teacher-led oral prompts

Safety watch-point

Wipe floor spills straight away; sleeves rolled up; no tasting water from the trays. Wash hands after tidy.

Teaching moves

- **Getting Started:** Keep trays and squares stacked aside. Ask paper bag vs raincoat with a quick hands-up, then hold a real coat if you have one and ask what the material feels like compared with paper. Link lightly to Irish rain and why outdoor coats and bag covers use certain materials.
- **Today's words and our question:** Show only the short waterproof and absorb lines on screen. Hold up each dry square as you name it — soft fabric, paper, foil, plastic — and say material means what something is made of. Keep water off tables. Head off 'thick things are always waterproof' by promising the drip test will show.
- **Predict first:** Show the four dry squares once, one short partner whisper, then hands-up and journal mark together for each material in turn. One tick or dry-face/wet-face mark per square — no sentences. No water yet; every prediction must be on the page first. If time is tight, drop the whisper.
- **The drip test:** Model the full I wonder–predict–test–observed–think cycle on paper only, then send groups of four to trays. Order paper → fabric → foil → plastic; same drip amount each time; roles rotate. Circulate asking where the water is now. If a group is slow after two squares, drip the last two while they watch so every group still has evidence for all four.
- **Record what we saw:** Keep trays in front of them. Tell them what to mark for each material — stay on top, soak in, or go through — rather than walking the page layout. Accept drawings or dry-face/wet-face codes. Check they record what they saw, not only their first guess; if foil leaked through a tear, note that honestly.
- **Make sense together:** Show one IWB prompt at a time. Wait for group results before naming foil and plastic as waterproof. Link the raincoat to plastic or a coated coat, not ordinary cloth. Invite one or two everyday uses — wellies, lunchbox lids, bag covers — then stop. Pour trays, bin or dry wet squares, wash hands.

What it should show

Expect paper to darken, soak and often drip through; many soft fabric squares darken and let some water through; foil and plastic usually hold beads on top. A square that leaks oddly often has a crease, tear or hole — name that as a clue about joins, not a failed test. Record what actually happened.

Misconceptions & interventions

- **Children say thick things are always waterproof.** — Point back to the tray: thin plastic kept water out while thicker fabric let it through. Thickness is not the rule — stick to what the drip test showed.
- **Children say our soft fabric square should work like a raincoat because both are fabric.** — Hold the coated coat beside the wet fabric square. Raincoat material is chosen because it behaves like the waterproof squares, not like ordinary cloth.

**Differentiation**

Emerging	Developing	Proficient
• Pair for recording with oral rehearsal first — I observed... — and accept a dry-face/wet-face mark or simple drawing per square. • If a group is slow, drip the last two squares yourself while they watch and agree the observation.	• Prompt one reason stem after the test: I think plastic kept water out because... • Ask where the water is now — on top, inside, or on the tray — for each square as they record.	• Challenge early finishers to name one everyday object that matches a waterproof material they tested (spoken or a quick spare-paper sketch). • If a square leaked through a tear, ask what that tells us about damaged coats or joins.

Cross-curricular hook

Link to Irish weather and Geography — why outdoor coats, wellies and school-bag covers need waterproof materials in frequent rain.

