

materials

Waterproof or not

Lesson at a glance

Open with Irish rain and a raincoat: does water sit on top or go through? Children look at four dry squares — fabric, paper, kitchen foil and plastic — and thumbs-guess which will keep water out. After a teacher model drip on paper, groups take turns guessing then dripping at trays, watching whether water stays on top or soaks through. They sort results on the Investigation Journal picture-cued page, then talk about why a coat-maker would pick a waterproof material, not paper.

Learning objectives

- Guess whether a material will keep water out before testing
- Drip water onto material squares and notice what happens
- Sort materials into keeps water out and lets water through

Before the bell – prep

Cut hand-sized squares of fabric, paper, kitchen foil and plastic (document wallet or clean bag), plus spare dry sets per group. Fill a jug; set one shallow tray, dropper or spoon, cup of cold water and towel per station. Print the sort Journal page per child.

**Materials**

Item	Qty	Per	Source	Low-cost substitute
shallow tray or washing-up basin	1	group	classroom	a large roasting tin or plastic storage-box lid
fabric squares (about hand-sized, e.g. cotton scrap or old tea towel)	1	group	classroom	a square cut from an old t-shirt
paper squares (plain paper or scrap paper)	1	group	classroom	newspaper squares
kitchen foil squares	1	group	supermarket	the foil lid from a clean yoghurt pot, flattened
plastic squares (cut from a clear document wallet or clean plastic bag)	1	group	classroom	a square cut from a clean food bag
dropper or teaspoon	1	group	classroom	a clean medicine syringe (no needle) or a bottle cap for pouring tiny amounts
small cup of cold water	1	group	classroom	a yoghurt pot of water
towel or cloth for spills	1	group	classroom	a few sheets of kitchen paper
spare dry material squares (same four types)	1	group	classroom	reuse any dry leftovers from the first cut
Investigation Journal page	1	pupil	print provided	a blank sheet for drawing the two groups

Safety watch-point

Cold water only; roll sleeves up; no tasting. Wipe spills, keep wet squares off Journal pages, and wash hands after tidy.



Teaching moves

- **Look and wonder:** Hold up fabric, paper, foil and plastic one by one. Say the two meanings aloud yourself: waterproof means water stays on top; some materials let water through. Thumbs up or down only — no dripping yet, and no wrong guesses.
- **Watch me drip:** Model the full cycle out loud on paper only: wonder, guess, one spoon drip, look at the dark wet square and tray underneath, then name it as lets water through. Point to the underside so they know what “through” looks like.
- **Drip and find out:** Send groups to pre-set trays. Enforce say-guess-then-drip and one tiny spoonful. Circulate with: Where is the water now? Is the underside dry or wet? Swap a spare dry square if one soaks early; cut water volume if trays flood.
- **What did we notice?:** Groups hold up one square that kept water out and one that let it through. Revoice their words: That one is waterproof. That one lets water through. Name a thick-fabric surprise so they do not invent a thick-equals-waterproof rule.
- **Show and draw:** Hands dry on the towel first. Point to the Journal picture cues — drop on top versus drip through — and have children mark each square on the matching side. Trays stay nearby as evidence; wet materials stay off the page.
- **Make-sense talk:** Carpet talk only. Harvest foil/plastic as waterproof and paper/fabric as lets water through. Bridge clearly: coat-makers use special coated or plastic-like material, not tea-towel fabric or kitchen foil, so Irish rain stays outside.



What it should show

Expect paper and most fabric to darken, soak and wet the tray; kitchen foil and plastic to hold beads on top with a dry underside. Creased foil may pool water in a dip but still keep it on top. Flooded trays or a holed thin bag mean too much water or a bad plastic square — re-run with one tiny drip or a document-wallet square.



Misconceptions & interventions

- **Thick things keep water out — so the fabric should be waterproof.** — Hold up the wet fabric beside the thin plastic. Ask which kept water on top. Name that thickness was not what mattered today — only whether the water stayed on top.
- **All shiny things keep water out, or real coats must be made of foil like our test.** — Agree foil was good test evidence, then say the bridge line: coat-makers choose special coated or plastic-like material, not kitchen foil or ordinary scrap fabric.



**Differentiation**

Emerging	Developing	Proficient
• Drip beside the teacher and test only two squares; mark just one on each side of the Journal page, with a scribed word if asked.	• Try all four squares and circle one surprise on the Journal sort.	• Compare a second fabric scrap if one is already on the bench and say same or different; draw a raincoat and tell a partner whether they think it would keep rain out.

Cross-curricular hook

Link to Geography weather talk — why waterproof coats and wellies matter in rainy Irish days.