

materials

Ask a testable question: which material suits the job?

Lesson at a glance

Open by holding up a raincoat, cushion and shopping bag and asking why each is made of that material. Groups pick one job—keep a toy dry, cosiest cushion top, or strongest bag handle—and turn it into a Which material is best...? question. They sort tray scraps by job-relevant properties, then try candidates the same way each time. On the Investigation Journal page they record the question, materials tried and best choice with one evidence reason, then share so the class sees different jobs need different materials.

Learning objectives

- Ask a simple testable question about which material suits a job
- Try materials and choose the best one using evidence from what happened

Before the bell – prep

Night before: bag mixed scrap materials per group (cloth, foil, plastic, paper, card). Set aside small toys, jugs and shallow trays for dry jobs; one light weight per handle group. Have a raincoat/bag, soft cushion and strong bag ready to show. Mark chair backs or table edges for handle hangs.

**Materials**

Item	Qty	Per	Source	Low-cost substitute
hook objects or clear picture cards (waterproof coat or bag, soft cushion or soft toy, strong shopping bag or sturdy handle)	1	class	classroom	clear printed or drawn picture cards of a raincoat, a cushion and a shopping bag
three job names written on the board (keep a toy dry; cosiest cushion top; strongest bag handle)	1	class	classroom	sticky notes with one job each for groups to pick
mixed materials tray (cotton cloth scrap, kitchen foil, plastic bag piece, card strip, felt or fleece scrap, string or yarn)	1	group	classroom	use clean packaging scraps from home and classroom recycling
small plastic toy figure	1	group doing the dry job	classroom	a wooden cube or sealed plastic counter
small jug of water and shallow tray	1	group doing the dry job	classroom	a cup of water and a lunchbox lid as a tray
small weight (bag of interlocking cubes or a full small water bottle)	1	group doing the handle job	classroom	a few heavy library books hung in a sturdy bag
chair back or table edge for hanging handle strips	1	group doing the handle job	classroom	a sturdy coat hook at child-safe height with adult supervision
cloths or paper towels for spills	4	class	classroom	old tea towels
Investigation Journal page	1	group	classroom	a plain page with headings: Our question, What we tried, Our best choice

Safety watch-point

Wipe water spills at once; adult hangs weights low and clear of toes; no tasting scraps; wash hands after water work.



Teaching moves

- **Getting Started:** Hold up the coat, cushion and bag one at a time. Ask only Why is this made of that material and not something else? Take two or three quick ideas each—no correcting, no mention of testing yet—so noticing stays fresh for about three minutes.
- **Which job shall we try?:** Write the three jobs on the board, seat groups of 3–4, and let them choose while steering so each job has at least one group. Help them voice Which material is best for...? Stop short of predictions until trays are out.
- **Sort our candidate materials:** Hand each group its mixed tray. Keep the IWB prompt as might suit / probably will not, and give only the matching property pair when you visit (water soaks / stays on top; soft / scratchy; strong / tears). If everything lands in might work, ask Which two would you try first?
- **Try materials for the job:** Issue only the apparatus each job needs. Model one full dry-job cycle aloud (wonder–predict–test–observe–think), then point each group to its same-each-time line on the board. Watch for equal covers, equal drops, equal strip length and adult-only weight hangs.
- **Record our question and choice:** Leave the three stems on the IWB. One child scribes; short labels or ticks for materials tried are fine. Check the because clause is what they saw or felt, not I like blue.
- **What did we see or feel?:** Rapid round: one dry, one cushion, one handle group if possible. Echo their words with evidence—So your evidence was the water stayed on top... Draw out that a winner for one job may fail another; if jobs are uneven, hold up a starter object from a different job and ask Would your material suit this too?



What it should show

Dry job: plastic and foil leave the toy dry; cloth soaks and the toy feels damp. Cushion job: soft fabric or fleece feels cosiest; card, foil or plastic feel hard or scratchy. Handle job: woven cloth or strong plastic strip stretches or tears least; paper and thin foil give way. Odd dry results usually mean uneven covering or different drop counts—re-run same each time.



Misconceptions & interventions

- **Best means the one I like—the blue one or the shiny one.** — Point back to the job on the board: Best means it does this job well. Ask What did you see or feel when you tried it for the job?
- **The material that won our test is best for every job.** — Hold up the raincoat beside the cushion. Ask Would the dry-job winner make a cosy cushion top? Why or why not?—so they hear job-depends-on-material.
- **We already know which will win, so we don't need to try them the same way.** — Re-voice the same-each-time line for their job and run one quick side-by-side trial so the evidence, not the guess, decides.



**Differentiation**

Emerging	Developing	Proficient
• Stay at the teacher table with the spoken stem We tried... We saw... So we choose... and ticks or short labels on the Journal page instead of full sentences. • Offer only two pre-sorted candidate scraps so the choice stays manageable.	• After the main choice, ask Why did the other material not suit the job as well? • Invite a second short trial of the runner-up to confirm the evidence.	• If time allows, try a fourth tray material with the same-each-time rule and add it to the Journal record. • Prompt a fair-test check: What did your group keep the same each time?

Cross-curricular hook

Link to English oral language—groups practise the because stem with evidence words (dry, soft, stretch) before the scribe writes.