

## materials

## Ask a testable question: which material suits the job?

### Lesson at a glance

Open with a raincoat, cushion and shopping bag and ask why each is made of that material. Groups pick one job—keep a toy dry, cosiest cushion top, or strongest bag handle—and form a simple testable question. They sort tray materials by job-fit, then try two or three the same way each time. On the Investigation Journal page they record question, materials tried and best choice with one evidence reason, then share across jobs.

### 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

Gather three hook objects (coat/bag, cushion, strong bag). Prep mixed materials trays per group: cloth, foil, plastic and similar scraps. Dry-job tables need a small toy, jug and shallow tray; handle tables need one small weight and a chair back. Write the three jobs on the board before groups choose.

**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 the small weight low and clear of toes; no tasting materials; wash hands after water work.



## Teaching moves

- **Getting Started:** Show the three everyday objects and ask only: why is this made of that material and not something else? Surface quick noticing; do not name the investigation yet.
- **Which job shall we try?:** Put pupils in groups of 3–4. Point to the three jobs on the board and let groups choose, steering so each job has at least one group. Help them voice Which material is best for...? — no materials trays and no winners yet.
- **Sort our candidate materials:** Hand each group a mixed tray. On the IWB keep might suit / probably will not; when you visit, show only that job's property pair (soaks/stays on top; soft/scratchy; strong/tears). If everything lands in might work, ask which two they would try first.
- **Try materials for the job:** Issue apparatus by job only. Model one full dry-job cycle (wonder, predict, same cover and same few drops, observe, choose). Leave each group its short same-each-time line. Walk the room for fair tries, wipe spills, and hang weights low with adult help.
- **Record our question and choice:** Leave the stems up: Our question was... We tried... Our best choice is... because... One scribe per group. Check the because is what they saw or felt, not colour preference.
- **What did we see or feel?:** Rapid round: one dry, one cushion, one handle group if possible. Revoice pupil language as evidence. Draw out that different jobs need different materials; if jobs are uneven, hold up a hook object and ask whether their winner would suit that job too.



## What it should show

Dry groups typically pick plastic or foil over cloth (water stays on top). Cushion groups pick the softest/least scratchy scrap after the same hand rest. Handle groups pick the strip that stretches or tears least under the same small weight. A surprising dry result often means uneven covering or different water amounts—re-run same-each-time.



## Misconceptions & interventions

- **Best means the colour or material I like, not the one that does the job.** — Point back to the job on the board: best means it keeps the toy dry / feels softest / holds without stretching. Ask what they saw or felt that matches the job.
- **One material is best for every job.** — In the share-out, contrast a dry winner with a cushion or handle result. Hold up the raincoat vs cushion and ask whether the same material would suit both.
- **We can compare materials even if we tried them differently each time.** — Stop and revoice the group's same-each-time line: same toy and drops, same hand rest, same strip length and weight. Re-run one pair fairly before they choose.





### Differentiation

| Emerging                                                                                                                                                                                                                                                                  | Developing                                                                                                                                                                                                 | Proficient                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Give the spoken stem We tried... We saw... So we choose... and let one confident peer scribe on the Investigation Journal page.</li><li>• Visit early and name only their job's property pair so sorting stays focused.</li></ul> | <ul style="list-style-type: none"><li>• Prompt a second fair try of the top two materials before they lock a choice.</li><li>• Ask why that property suited this job but might not suit another.</li></ul> | <ul style="list-style-type: none"><li>• If time allows, try a fourth tray material with the same-each-time steps.</li><li>• In the share-out, critique another group's fairness: what stayed the same, what changed?</li></ul> |

### Cross-curricular hook

Link to English oral language: groups use the stems to give a short evidence reason the class can hear and revoice.