

materials

# Describing materials: their properties



## Lesson at a glance

Open by feeling a jumper and table top, then model property words on a clear plastic wallet: bendy and see-through. Groups handle a shared tray of six samples, try the gentle bendy test, and sort into bendy / not bendy hoops. Drive the sorting-tree interactive yourself to re-sort the same six by see-through — some items change sides. Pupils record material and bendy/not bendy on the Investigation Journal page, then talk why a window needs to be see-through.

## Learning objectives

- Use property words such as hard, soft, bendy, see-through, rough and smooth
- Group materials by one property (bendy or not bendy) and record the groups

## Before the bell – prep

Set one tray per group the night before with the same six: wooden lolly stick, fabric scrap, paper strip, metal spoon, clear plastic wallet strip, foil piece. Print bendy/not bendy word cards and place two hoops (or desk zones) ready. Keep full trays off desks until the Feel and look step.

## Materials

| Item                                                                                                                                        | Qty | Per   | Source             | Low-cost substitute                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------|-----|-------|--------------------|-----------------------------------------------------------------------------------------|
| materials samples tray (wooden lolly stick, fabric scrap, paper strip, metal spoon, clear plastic strip from a document wallet, foil piece) | 1   | group | classroom          | any safe classroom or home scraps of wood, fabric, paper, metal, clear plastic and foil |
| property word cards (hard, soft, bendy, see-through, rough, smooth)                                                                         | 1   | group | provided printable | write the six words on sticky notes or the board                                        |
| sorting hoops or clear desk zones                                                                                                           | 2   | group | classroom          | two sheets of paper labelled bendy and not bendy                                        |
| Investigation Journal page                                                                                                                  | 1   | pupil | provided printable | plain paper with the same recording prompts written on the board                        |

**Safety watch-point**

Gentle bend only — no snapping or tasting. Return each sample to the tray; watch small foil pieces and spoons do not become play weapons.

**Teaching moves**

- **Today's property words:** Hold up one clear plastic wallet strip and think aloud: predict smooth and see-through, try the bend, look through it. Say the light word bank (hard/soft, rough/smooth, see-through) while pointing at room objects — do not fill the board. If a child says 'wood-y', revoice: 'Wood is the material; hard is a property.'
- **Feel and look:** State the class bend rule once: gently try to bend without breaking; curves without snapping = bendy. Groups share the tray; each child handles some samples and the group agrees one word per piece. Circulate with: 'Does it curve without snapping?' No tasting; return each piece to the tray.
- **Group them by one property:** Label two hoops bendy / not bendy and sort only the fixed six samples. For stiff plastic that bends a little, accept 'a bit bendy' talk then decide together with the class rule. If metal is treated as always not-bendy, hold foil beside the spoon: same material name, different property.
- **Same things, new question:** Open the sorting-tree interactive in explore mode and drive it yourself. Keep the same six materials; change the question to see-through. Say aloud when foil moves: 'The foil has not changed. The question changed.' That is the property idea.
- **Record our groups:** Record only material name/picture plus bendy or not bendy on the Investigation Journal page. Leave trays or hoop piles visible. Say aloud that two careful rows is success for slower writers; do not add see-through columns today.
- **Why a window is see-through:** Name talk partners, then point at a real window and wall. Draw out: window material is see-through so we can look out; wall is not, for privacy and strength. If a child says 'because it is glass', revoice to the property the job needs.

**What it should show**

Expect bendy: fabric, paper, clear plastic, foil. Expect not bendy: wooden lolly stick, metal spoon. On the see-through re-sort, only the clear plastic sits alone as see-through; foil moves beside the spoon. A group that puts foil as not bendy usually did not try a gentle curve — re-run the bend rule together.

**Misconceptions & interventions**

- **Children mix the material name with the property — 'it is wood-y' or 'metal means not bendy'.** — Hold the spoon beside the foil: 'Metal is the material. The spoon is not bendy; the foil is metal and bendy. Property is not the same as the name.'
- **Children think a material has only one fixed group forever, so they are confused when foil changes sides.** — Say it as it happens on the interactive: 'The foil has not changed. The question changed.' A property is one question you can ask about something.



**Differentiation**

| Emerging                                                                                                                                                                                                            | Developing                                                                                                                                                                 | Proficient                                                                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• Pair at the teacher table with word cards and pictures; aim for two careful Journal rows (name/picture + bendy or not bendy) using the hoop piles as a look-back.</li></ul> | <ul style="list-style-type: none"><li>• After the bendy sort, invite an oral re-sort of the same tray by see-through / not see-through and whisper what changed.</li></ul> | <ul style="list-style-type: none"><li>• Challenge: name a third question (rough/smooth) the class could ask about the same six, still oral only — no extra Journal columns.</li></ul> |

**Cross-curricular hook**

Links to Maths sorting and sets — two hoop groups, then the same set re-sorted by a new rule.