

materials

Mixing materials

Lesson at a glance

Open with a baker tipping flour and water into one bowl and ask what happens when they go in together. Model a quick flour-and-water stir on the carpet, naming run-off-the-spoon versus stay-in-a-lump. Groups then visit two mixing stations — sand, flour or cornflour with water — scooping damp powder into their own pot, adding water and stirring. Carpet share names pour or hold-its-shape for each sample; close with a display-only talk that mixing can make something that feels new.

Learning objectives

- Mix two everyday materials at a station and describe the result
- Say whether a mix pours or holds its shape
- Notice that mixing can make something that feels new

Before the bell – prep

Check the class list for wheat allergies and set a cornflour-only path if needed. Pre-dampen flour and cornflour so children scoop damp powder, not dust. Lay six wipe-clean trays (two sand, two flour, two cornflour side by side); each needs three spoons, three pots, a water cup, reserve damp powder, waste tub and cloth.

**Materials**

Item	Qty	Per	Source	Low-cost substitute
shallow mixing trays (two for each of the three materials)	6	class	classroom	clean cat-litter trays or deep baking trays
play sand	1	class	school kit	clean builder's sand rinsed and dried, or dry rice for a no-sand room
plain flour	1	class	supermarket	extra cornflour station only if wheat cannot be used
cornflour	1	class	supermarket	extra flour-and-water paste if cornflour is unavailable
small reserve pots for unmixed damp powder	6	class	classroom	clean yoghurt pots or takeaway tubs
jug of clean water	1	class	classroom	bottles of tap water
spoons	18	class	classroom	lolly sticks or clean yoghurt-pot scoops
small cups of water (one on each tray)	6	class	classroom	clean yoghurt pots
towels or cloths	6	class	classroom	kitchen roll
small mixing pots (three on each tray, one per pair)	18	class	classroom	clean yoghurt pots, takeaway tubs or the bottom half of cut plastic cups
small waste tub for emptying pots (one on each tray)	6	class	classroom	an empty ice-cream tub or a lined bucket

Safety watch-point

Check wheat allergies before flour trays. Sleeves up; no tasting; mixes away from faces; wipe spills at once; wash hands with soap after tidy.



Teaching moves

- **Getting Started:** Hold up an empty mixing bowl or show the baker picture. Ask what the baker is putting in — take two or three quick answers only. Do not name the stations or hand out materials yet; keep the guessing lively.
- **What happens when we mix?:** Write Mixing on the board. At the flour-and-water tray, think aloud: scoop, stir slowly, tip the spoon and name stay-in-a-lump before saying holds its shape. Keep pours / holds its shape as the choice children will make with their hands at the trays.
- **Mix at the stations:** Send six groups of four or five to the trays for two short visits (about four minutes each). Every pair scoops fresh damp powder into its own pot, adds a little water and stirs — the tray only catches spills. Prompt: tip the spoon — run off, or stay in a lump? Watch the two cornflour trays; on the swap signal, pairs tip into the waste tub, wipe and move.
- **What did we notice?:** Bring one spoonful from each station to the front carpet. Go station by station; two children per mix say one notice. Offer stems: It looks... It feels... It pours. It stays in a lump. Revoice holds its shape only after they choose. If a child says only yucky or nice, ask whether it runs off the spoon or sits there.
- **Make-sense talk:** Show the baker picture again. Revoice until the class idea is clear: mixing two materials can make something that feels new. Draw out the cornflour surprise if you heard it — both pour and stay-in-a-lump can be right for that mix. Hands up and talk only; no writing.



What it should show

Sand and water stays grainy and heavy and does not pour smoothly. Flour and water makes a sticky paste that holds its shape. Cornflour and water is the surprise: firm when squeezed quickly, runny when held still — let them feel both rather than explain. A mix that stays bone-dry usually had too little water; invite one more splash and another stir.



Misconceptions & interventions

- **Mixing means the flour or sand disappears — it's gone.** — Point at the paste and name both starters still in it: flour and water made this together. Have them look for grains or sticky flour still visible in the pot.
- **A mix can only be one thing — either it pours or it holds its shape, never both.** — At the cornflour tray, invite a quick squeeze then a still tip. Celebrate both labels being right for the same mix at different times.





Differentiation

Emerging	Developing	Proficient
• Stay at the teacher table for the first scoop-and-stir so the powder-then-water order is secure; offer the run-off / stay-in-a-lump choice with the spoon in their hand. • Let them point to the sample on the front tray and choose pour or lump with a stem rather than full sentences.	• After they tip, ask one more feel word: sticky, grainy, smooth, heavy. • On the second tray, prompt them to compare: is this more like run-off or more like a lump than the first mix?	• Ask why the baker mixes flour and water — what job does the new mix do? • If they notice cornflour doing both, invite them to show the class the squeeze-then-tip and name both labels.

Cross-curricular hook

Oral language: children rehearse the stems It looks... / It feels... / It pours / It stays in a lump in a short science talk.