

Flat flops, folded holds

Lesson at a glance

Open by holding a flat paper strip from one end so the class sees it flop. Pupils then try three fresh strips themselves — flat, deep V, and zigzag fan — feeling which stays out. After a short oral share, pairs hunt the classroom for folded or ridged shapes holding something up and draw one find on the Investigation Journal page. Close by linking wavy cardboard boxes back to the hand test: same thin material, stronger shape.

Learning objectives

- Show that folding a strip of paper can stop it flopping
- Find folded and ridged shapes that hold something up in the classroom

Before the bell – prep

Cut at least three paper strips per child (about 3 cm × 20–25 cm from plain A4) plus a spare for your model. Have one corrugated cardboard sample ready. Pre-place four or five clear finds around the room (box with wavy edge showing, egg box, folded card stand, concertina display) so groups do not crowd one spot.

Materials

Item	Qty	Per	Source	Low-cost substitute
paper strips (about 3 cm by 20–25 cm)	3	pupil	classroom	strips torn carefully from scrap paper or old worksheets
corrugated cardboard sample or small cardboard box	1	class	classroom	egg box or any ridged packing card
Investigation Journal page	1	pupil	provided printable	plain paper for a quick drawing record

Safety watch-point

Keep the hunt inside the classroom only. Walk, no running; eyes and gentle hands only — no climbing or pulling fixed fittings.

**Teaching moves**

- **Getting Started:** Hold one flat strip out from your hand so the whole class sees it flop. Keep it live and short — one surprise, then hands up: stay out or flop? Accept every guess (soft, thin, heavy) without correcting; the hand test will teach.
- **Feel the folds:** Model the full cycle with fresh strips before pupils begin — never un-crease a V into fan folds. Reveal try 1, then 2, then 3 one at a time. Circulate asking ‘What does your hand feel now? Same paper — what changed?’ If a V still flops, have them press a sharper crease.
- **Share what you felt:** Partner talk only — do not open the Investigation Journal yet. Offer sentence starters if needed, listen for flat-versus-folded contrast and a feeling word, then revoice two or three shares using the word fold.
- **Spot folds that hold:** Hold up the corrugated sample and name ridge once, then set pairs or threes to starting spots in the room only. Give 3–4 minutes to look and 4–5 to draw one find on the Investigation Journal page, labelling where the fold or ridge is and what it holds. Ask listeners: ‘Where is the ridge on theirs?’
- **Why wavy card?:** Hold the corrugated card beside the folded strips and give one minute of pair talk before class share. Draw out that wavy ridges act like many little folds so thin card can hold without thick heavy board. Keep it talk-only.

What it should show

Almost every flat strip flops at once. A deep V usually stays out; tight zigzag fan folds often feel strongest. If a V still flops, the crease is too shallow. Classroom finds typically include corrugated boxes, egg boxes, folded card or brochure stands, and concertina displays. Affirm any clear fold or ridge that is holding something up.

Misconceptions & interventions

- **The folded strip is heavier or thicker paper — that’s why it holds.** — Hold the leftover flat scrap beside the folded one and ask: same strip, same amount of paper? Point to the crease and revoice — the shape changed, not how much paper there is.
- **Cardboard boxes are strong because card is magic paper.** — Hold up the corrugated sample, trace the wavy middle with a finger, and link back to their zigzag fan: the ridges work like many little folds that stiffen thin material.



Differentiation

Emerging	Developing	Proficient
• Offer a pre-creased starter V or fan fold so pupils with weaker fine-motor skills can still feel the stiff hold and join the comparison.	• After the three tries, ask them to hold a strip from the short end and then the long end and say which felt stronger.	• On the journal draw, push them to label whether their find is most like the V, the zigzag fan, or a wavy ridge, and say what it is holding up.

Cross-curricular hook

Links to Visual Arts construction — folds and concertina forms that make thin paper stand and hold.