

# Build a strong tower

## Lesson at a glance

Open by holding up a soft toy and a sample kit and posing the challenge: build the tallest free-standing tower that can hold the teddy. Pairs share what helps a tower stay up, then sketch a quick plan that shows a wide base before receiving newspaper, sticky rolls, cups and card. They build, predict, and gently place the teddy on top. Recording is a draw-the-base page in the Investigation Journal, then a short share of one feature that helped.

## Learning objectives

- Build a free-standing tower from limited materials that holds a light object
- Say one feature (such as a wide base) that helped the tower stand

## Before the bell – prep

Pre-count one kit per pair: 4–5 newspaper sheets, one masking-tape roll, about four paper cups, card offcuts, one small soft toy, plus scrap paper for plans. Optionally pre-roll a few newspaper tubes so build time goes on base and joins. Push desks for floor or table space before the bell.

## Materials

| Item                       | Qty | Per   | Source             | Low-cost substitute                               |
|----------------------------|-----|-------|--------------------|---------------------------------------------------|
| newspaper sheets           | 5   | group | classroom          | scrap A3 paper or old worksheets                  |
| masking tape roll          | 1   | group | classroom          | sticky tape or washi tape                         |
| paper cups                 | 4   | group | classroom          | rolled paper tubes taped closed                   |
| card offcuts               | 4   | group | classroom          | cereal-box card cut into small pieces             |
| small soft toy             | 1   | group | classroom          | a light beanbag, a sock ball, or a small eraser   |
| scrap design paper         | 1   | group | classroom          | back of a used worksheet or a journal page margin |
| Investigation Journal page | 1   | pupil | provided printable | plain paper for a labelled tower drawing          |

**Safety watch-point**

Towers can topple suddenly — stand clear, place the teddy gently, catch falling cups before faces, no running with builds, mind fingers when joining.

**Teaching moves**

- **What makes a tower strong?:** Keep board words off the screen during pair talk. Take three ideas, then revoice only free-standing and wide base. If nobody names a wide base, stack cups narrow vs wide as a quick model — do not build a finished winning tower.
- **Plan your tower:** Hold up each kit item and name it simply. Give one scrap of design paper per pair. Circulate asking where the wide base is and what they will roll or stack first. Frozen pairs get two starters only: triangle of cups, or joined newspaper tubes.
- **Build your tower:** Hand kits out now. Coach with questions, not fixes: Is the bottom wider than the top? Which join feels loose? Call a two-minute warning so pairs steady the top before testing.
- **Will it hold the teddy?:** Run a simple predict-try-observe: yes/no and why, then place the teddy gently once. Allow one quick fix and retest only if time remains. Stand clear of topples; catch falling cups.
- **Draw what made it stand:** Lead with draw-and-show-the-base on the Investigation Journal page. Offer an optional board word bank (wide base, cups, tubes, steady, wobbly) for copy or teacher scribing — words are optional.
- **Share what helped:** Sample three or four pairs only, one sentence each. Hands-up for wide base, strong tubes or firm joins. Revoice: a wide base helped it stay steady and stand on its own. Praise careful fixing, not only height.

**What it should show**

Successful towers stand alone and hold the soft toy, usually with a broader bottom than top and firm joins. Many cup bases work as a triangle or cluster; rolled newspaper tubes add height if taped well. Towers that tip under the teddy are often skinny at the base or loosely joined — affirm the try and point them back to widening the bottom.

**Misconceptions & interventions**

- **Taller is always better, even if the tower wobbles or falls.** — Revoice that strength and balance matter as much as height. Point to their base: if it tips, stop and widen or firm the joins before adding height.
- **One cup or a single skinny stack is enough under a tall tower.** — Model two quick cup stacks side by side — narrow vs wide — and ask which looks harder to tip. Link back to wide base / broad bottom on the board.



**Differentiation**

| Emerging                                                                                                                                                                                                                                                                        | Developing                                                                                                                                                                                                                        | Proficient                                                                                                                                                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Offer pre-rolled newspaper tubes and aim for a short steady tower that holds the teddy rather than maximum height.</li> <li>• If a pair freezes on the plan, give only the two starters: triangle of cups, or joined tubes.</li> </ul> | <ul style="list-style-type: none"> <li>• Once the tower stands alone, invite one extra height add-on or a firmer re-join before the teddy test.</li> <li>• Prompt: Which join feels loosest, and what could steady it?</li> </ul> | <ul style="list-style-type: none"> <li>• Once it holds the teddy, challenge a taller free-standing version without losing the wide base.</li> <li>• In the share, ask them to name one change they would make next time and why.</li> </ul> |

**Cross-curricular hook**

Link to local tall structures children know — church steeples, cranes, water towers — and notice how wide the bottoms look.