

Draft and choose a design

Lesson at a glance

Open by holding up loose pencils that rolled under the desk and naming Sam as the user who needs a desk helper. Model two tiny board drafts (open tray vs tube stand), think aloud, and circle one — no full plan yet. Pairs call out two ideas, then each pupil sketches two quick drafts in the Investigation Journal, names a good and tricky part, circles a choice, and draws a labelled plan naming parts and tray materials. Close with kind partner feedback using I like... / I wonder...

Learning objectives

- Draft two quick design ideas for Sam's pencil problem
- Choose one idea and draw a labelled plan naming parts and materials

Before the bell – prep

Set one sample tray per group the night before (card scraps, paper, masking tape, lolly sticks, a small box if you have one) — look and touch only, no build. Check each Investigation Journal page (or blank A4) has space for two small drafts plus one larger labelled plan. Keep a few loose pencils for the hook.

Materials

Item	Qty	Per	Source	Low-cost substitute
Investigation Journal page	1	pupil	classroom	a blank A4 sheet with room for two small drafts and one larger labelled plan
design paper for extra drafts	1	pupil	classroom	the back of used paper
coloured pencils	1	group	classroom	ordinary pencils only
sample build materials tray (card scraps, paper, masking tape, lolly sticks)	1	group	classroom	card from cereal boxes cut into strips, scrap paper, and sticky tape

Safety watch-point

Plan-only day: trays are for looking and touching, not cutting or building. Keep tape rolls and small sticks on the table; no scissors needed this lesson.

**Teaching moves**

- **Getting Started:** Hold up loose pencils from the floor and name Sam (classmate, buddy or puppet). Ask who we are helping and what a good helper must do. Capture two or three short need-phrases on the board (holds pencils, does not tip, easy to make). Do not hand out journals or trays yet.
- **Drafts, then a plan:** Keep pencils away. In under five minutes sketch two tiny drafts only — open tray and tube stand — thinking aloud about grab-ability and roll-stop. Point to one good and one tricky part of each, circle the tray, stop. Briefly define a plan as a clearer labelled drawing, then ask why makers sketch more than one idea.
- **Imagine ideas:** Show the sample tray for look-and-touch only. Run think-pair-share: 30 seconds quiet think, about a minute pair talk, then harvest simple shapes on the IWB (open box, tall pot, divided tray, clip-on cup). Prompt stuck pairs: Could it stand up? Stick to the desk? Hold more than pencils?
- **Draft, choose and plan:** Reveal one beat at a time on the IWB. Protect timing: ~5 min two rough drafts, ~3 min good/tricky talk and circle, ~10 min labelled plan with part words (base, side, opening) and tray materials. Walk praising different ideas, not neatness. If only one draft appears, ask them to change one thing (taller, wider, lid). Minimum bar: two drafts, a choice, two part labels, two materials named.
- **Share and reflect:** Model I like... and I wonder... once. Partners swap plans (~2 min each way), then take three quick whole-class change shares only. Revoice design comments (shape, materials, how it holds pencils), not neat colouring. Display-only talk; a tiny star on the plan is optional, not required.

What it should show

A successful page shows two different rough drafts, a circled choice, and a clearer plan with at least two part labels (e.g. base, side, opening) plus two tray materials named (card, tape, stick). Neat colouring is not required. A page with one draft only usually means the child stuck on the first idea — prompt one change to make a second. Missing labels: point to a part and ask what they will call it and what it is made of.

Misconceptions & interventions

- **My first idea has to be the best one, so I only need one sketch.** — Point back to your two board drafts and say makers try more than one idea fast before they spend time on a careful plan. Ask them to change one thing on the first sketch to make a second draft.
- **A draft has to look neat or it does not count.** — Praise messy, different ideas out loud: a draft is for thinking, not for hanging on the wall. Point to speed and variety, not tidy lines.
- **The plan is just a prettier picture — labels and materials do not matter.** — Point to the tray and the board part-words. Ask what will you call this bit, and what on the tray is stiff enough? The plan must name parts and build-with materials so a partner can see the idea.

Differentiation

Emerging	Developing	Proficient
• Offer spoken starters: One idea is... Another idea is... and One good part is... One tricky part is... • Let the pupil dictate part or material labels while a partner or you scribes a word or two on the plan.	• Prompt a second draft by changing one feature (taller, wider, with a lid) if only one idea appears. • During choose-talk, ask which draft best matches the job on the board (holds pencils, does not tip).	• Add a simple size note on the plan (fits five pencils) or who else might use the helper. • In share time, push feedback toward tip-risk, grab-ability or material stiffness, then name one change they might make.

Cross-curricular hook

Link to oral language: practise the stems I like... and I wonder... when giving kind design feedback to a partner.