

Float and sink: guess and sort

Lesson at a glance

Open by dropping a cork then a stone into a clear jar so children see one bob and one sink. They thumbs-guess spoon, sponge, toy boat, lolly stick and coin, then commit guesses on the float-or-sink interactive for big log, small nail, feather and key. Groups guess-then-test a core set at water trays, sort matching dry copies into picture-cued float and sink hoops, and draw float/sink objects plus a circled surprise in the Investigation Journal. Carpet talk names what floated, what sank, and that size is not the rule.

Learning objectives

- Guess whether an object will float or sink before testing
- Test objects at the water tray and sort dry copies into float and sink
- Talk about a surprise and notice that some things float and some sink

Before the bell – prep

Morning of: fill one tray or basin per small group with a few cm of water; towels beside each. Pack matching wet-test and dry-copy sets (cork, spoon, stone, sponge, toy boat, lolly stick, coin). Two picture-cued hoops per group. Clear jar ready with cork and stone for the hook only. Spare dry sponge if you want a clear float.

Materials

Item	Qty	Per	Source	Low-cost substitute
water tray or large basin	1	group	school kit	washing-up basin from home
float and sink object set (cork, metal spoon, small stone, sponge, toy boat, lolly stick, coin)	1	group	classroom	any safe mix of light wood or plastic items and small metal or stone items from the classroom
towels	2	group	classroom	tea towels or kitchen roll
sorting hoops (float and sink)	2	group	classroom	two trays or hoops made with skipping ropes, each with a picture cue for float and sink
clear jar or jug of water with one cork and one small stone (teacher demo)	1	class	classroom	any clear plastic tub deep enough to show float and sink
Investigation Journal page	1	pupil	print from platform	plain paper for drawing float and sink findings

Safety watch-point

Teacher handles the jar; sleeves rolled; wipe spills and dry the floor before anyone walks; no tasting; keep coin and small stone in sight; wash hands at tidy-up.

Teaching moves

- **Getting Started:** Teacher-only: drop the cork so it bobs, then the stone so it sinks. Ask why one stayed up and one went down; accept all ideas and do not correct yet. Keep cork and stone jar-only from here on so later guesses stay real predictions.
- **Look and Guess:** Hold up each dry object once—spoon, sponge, toy boat, lolly stick, coin—naming float (stays on top) and sink (goes down). Silent thumbs up or down; never hold cork or stone again. Keep it to about two minutes and watch for looking before copying a neighbour.
- **Surprising pairs on the board:** Open float-or-sink on the IWB in explore mode. Class must guess before each drop: big log (floats), small nail (sinks)—pause that size is not the rule—then feather (floats) and key (sinks). Leave guesses visible. Oral only: which surprised us?
- **Water tray play:** Model one full cycle with the toy boat only: wonder, guess, place, notice. Send groups to core set first—toy boat, lolly stick, spoon, sponge—so every child gets turns. Hold the next object until a guess is said; revoice ‘You guessed sink—what did it really do?’ Cork, stone and coin only as extras if groups are still careful.
- **Sort float and sink:** After hand-drying, point to picture cues on the two hoops and say float and sink. Children place the four core dry copies from what they just saw, not a new guess. Redirect wet objects to the dry tub. If two disagree, send that object back for a quick re-test.
- **Draw our float and sink:** Show the Investigation Journal page and model: one float drawing (e.g. boat), one sink drawing (e.g. spoon), then circle a surprise. If time is tight, stop at those three marks. Towels before crayons.
- **What did we notice?:** Carpet talk with hoop sorts still visible—display only, no writing. Prompt what floated, what sank, and one different-from-guess surprise. Before tidy-up, revoice: some things float and some sink; size is not the rule (big sponge may float, small stone sinks). One short line on people who make boats.

What it should show

Core: toy boat and lolly stick usually float; spoon sinks; a fairly dry sponge usually floats (soaked it may sit low or sink—treat as useful surprise). Cork floats; stone and coin sink. Board: big log and feather float; small nail and key sink. Affirm that big can float and small can sink; redirect only if sorting from a fresh guess instead of tray evidence.

Misconceptions & interventions

- **Children say heavy things sink and light things float, or that big things always sink.** — Point to the board pair and the hoops: the big log floated and the small nail sank; the sponge may have floated while the small stone sank. Revoice ‘size is not the rule’ without a lecture.
- **A child sorts from a new guess or a neighbour’s hoop instead of what their tray showed.** — Send that one dry copy’s match back for a quick re-test and ask ‘What did it do in the water?’ before they place it.

**Differentiation**

Emerging	Developing	Proficient
• Sit at the teacher table and revoice each core object: 'stayed on top → float hoop' using picture cues only. • Journal fallback: one float drawing, one sink drawing, one circled surprise.	• Ask as they place: 'What did it really do?' so the sort matches the tray, not a fresh guess. • Invite naming one surprise aloud before drawing the circle.	• Attempt a simple label (e.g. boat, spoon) beside a drawing. • Compare two hoop objects and say which result was different from their thumbs guess.

Cross-curricular hook

Links to early Maths sorting and classifying—two groups with picture cues, reasoned placement from evidence.