ANSWER KEY

DO NOT HAND OUT

A PREDICTIONS THAT EARN FULL MARKS

Threshold prediction	Accept a predicted interval or uncertainty. Use the actual sink/float results to identify which tested amounts bracket the change.

B VARIABLES

Independent	Salt amount dissolved in 300 mL water: 0, 3 or 6 tablespoons.
Dependent	Whether the egg sinks or floats and, if it floats, height above the surface in millimeters.
Controlled	Water volume and temperature, cup size, intact egg and gentle test method; dissolve salt fully before each test.

C SAMPLE DATA

Illustrative results only. The example brackets the transition between 0 and 3 tbsp per 300 mL and shows the egg floating higher with more salt; actual onset varies with the egg and spoon-measured salt. It is not an exact concentration threshold.

SALT AMOUNT PER 300 ML	FLOATS OR SINKS?	HEIGHT ABOVE SURFACE (MM)
0 tbsp	Sinks	N/A — below surface
3 tbsp	Floats	6
6 tbsp	Floats	12

Check the interval uses the highest tested sink amount and lowest tested float amount. Confirm above-surface height is recorded only for floating eggs and no exact intermediate amount is invented.

D MODEL CLAIM, EVIDENCE, REASONING

Claim: In the illustrative results, the egg first floated in the 3-tablespoon sample, so the transition is bracketed above 0 and at or below 3 tbsp per 300 mL, and it floated higher with 6 tbsp.
Evidence: The egg sank in the 0 tbsp sample, floated 6 mm above the surface in the 3 tbsp sample and floated 12 mm above the surface in the 6 tbsp sample.
Reasoning: Dissolved salt adds mass to a fixed water volume and increases solution density. The tested interval narrows where the liquid supported this egg; egg differences and spoon-measured salt prevent claiming an exact universal threshold.

E THINK FURTHER

Test 1 or 2 tbsp per 300 mL as an intermediate amount, then continue narrowing the interval with equal water volumes and an intact egg.

F QUICK GRADING GUIDE

Require a conclusion that matches observed classifications and states a tested interval. Do not reward an exact untested threshold or a concentration value that was not measured by salt mass and solution volume.