Physical Science: Chemistry

Released form evidence

The two available forms had 11 clusters each. June contexts included beverages, blood equilibria and fabric. August included semiconductors, pool water and catalytic converters. Practice relating a macroscopic observation to a particle model and a data trend.

First January for the new exam. The 14 legacy chemistry forms measure a different design; older reference-table frequency cannot estimate the new cluster mix.

Eligible public forms • January 0 / June 1 / August 1

Worked responses and follow-up questions

1 Follow atoms through a model

Four water molecules form. Before and after there are eight H atoms and four O atoms. Mass and atom counts are conserved in the closed system. Molecule count changes from six to four.

If six product molecules appear, count atoms by element rather than comparing total molecules.

2 Temperature and the system boundary

The temperature rise supports energy transfer from the reaction to the solution and cup, consistent with an exothermic process. The comparison helps distinguish the rise from stirring or mixing water. It does not identify products.

If “heat entered because temperature rose” appears, ask whose temperature the thermometer measures.

3 Link a model to conductivity

X may consist of ions locked in a solid lattice that move in solution. Y may dissolve as neutral molecules. Identifying ions in X solution would strengthen the account. Conductivity alone does not uniquely identify a substance.

If all dissolved substances are said to conduct, compare the two solutions directly.

Average clusters with an explicit word cue per released form

Feature	January	June	August
model	—	3.00	6.00
diagram	—	1.00	1.00
table	—	1.00	0.00

A dash marks an unavailable month. Rows can overlap. See seasonal_evidence.csv for counts, uncertainty and the full feature set.

Official design or administration guidance

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4 Interpret a reaction-rate curve

Rates are 0.70 and 1.25 mL/s from the shared zero baseline. Higher temperature increases the fraction of collisions energetic enough to react. Equal final volumes indicate comparable final gas yields under the stated comparison.

If final yield is called reaction rate, ask how much gas appeared in the first interval.

5 Read a reversible change

The reverse direction is favored immediately, consuming some added NO_2 and producing N_2O_4. At the new equilibrium the two rates are equal. Equal rates do not require equal concentrations.

If both rates are said to stop, explain how constant concentrations can coexist with particle-level changes.

6 Choose a model with evidence

Melting fits the change in order and mobility. During the plateau energy changes intermolecular arrangement and potential energy as solid becomes liquid. Evidence of new chemical species would challenge a phase-change-only model.

If chemical bonds inside molecules are said to break, distinguish particle identity from attractions between particles.

Released practice for each week

Week 1 2026-06 • Q1 • How Glow Became Gloom (Q1–5)
Question booklet **Official mapping / guide**

Week 2 2026-08 • Q10 • The Great American Solar Eclipse (Q10–13)
Question booklet **Official mapping / guide**

Week 3 2026-06 • Q46 • Indoor Air Pollution (Q46–50)
Question booklet **Official mapping / guide**