

ANONYMIZED PRODUCTION SAMPLE · COMPLETED 8 AUGUST 2026

ICSE Grade 9 Chemistry

Atomic Structure and Chemical Bonding

A parent-readable view of one completed written practice evaluation: what the learner understood, the misconception the evaluator caught, and what to revise next.

FINAL · AI-ASSISTED RUBRIC EVALUATION

17 / 20

marks awarded · 85% of available marks

4 / 4 answers evaluated

4 answered · 0 skipped

All safety checks clear

The result in one minute

4 / 4 answers evaluated	1 specific misconception found	0 items awaiting review
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Evidence by section

Subatomic Structure & Properties		9 / 10 · 90%
Configuration & Valency		3 / 5 · 60%
Electrovalent (Ionic) Bonding		5 / 5 · 100%

Concrete next step: Review Configuration & Valency, then try a focused recheck.

Written practice · Four descriptive answers · Content version 2026-27-v2 · Final released result

Question-by-question evidence

Questions 1–2 · Feedback is paraphrased from the released evaluation. Private answers and identifiers are not reproduced.

QUESTION 1 · DESCRIPTIVE

Mostly secure · 4 / 5

Atomic neutrality and positive-ion formation

WHAT WORKED	Explained atomic neutrality and correctly linked electron loss with formation of a positive ion.
FEEDBACK	Add that, after electron loss, the remaining electrons experience a stronger effective nuclear pull and are held closer.
NEXT PRACTICE	Use electron-shell language to explain why a cation is smaller than its neutral atom.

QUESTION 2 · DESCRIPTIVE

Secure · 5 / 5

Particle bookkeeping for magnesium-24 and Mg^{2+}

WHAT WORKED	Correctly tracked 12 protons, 12 neutrons and 12 electrons in the atom, then 10 electrons in Mg^{2+} .
FEEDBACK	For maximum clarity, finish by stating explicitly that ion formation changes electrons, not protons or neutrons.
NEXT PRACTICE	Practise nuclide notation and repeat the same bookkeeping for one more ion.

Pattern so far: Particle counting is secure. The learner can explain how electron loss changes charge and can track the composition of Mg^{2+} accurately.

Question-by-question evidence

Questions 3–4 · One targeted misconception explains all three marks not awarded in this report.

QUESTION 3 · DESCRIPTIVE

Priority correction · 3 / 5

Electron configuration, group and valency

WHAT WORKED	Gave the configurations 2,6 and 2,8,6, identified six valence electrons and placed both elements in Group 16.
FEEDBACK	Valency is combining capacity, not the number of valence electrons. Each atom needs two electrons to complete its octet, so the valency is 2, not 6.
NEXT PRACTICE	For each configuration: count outer electrons, decide the gain or loss needed for an octet, then state valency.

QUESTION 4 · DESCRIPTIVE

Secure · 5 / 5

Electrovalent and covalent bonding

WHAT WORKED	Correctly contrasted electron transfer in MgO with shared electrons in H ₂ O and linked both to stable outer shells.
FEEDBACK	Keep naming the bond types explicitly: electrovalent (ionic) for MgO and covalent for H ₂ O.
NEXT PRACTICE	Draw one dot-and-cross diagram for MgO and one for H ₂ O, labelling transferred and shared electrons.

The useful correction: oxygen and sulphur each have six valence electrons, but each needs two more for a stable octet. Their valency is therefore 2, not 6.

Turn the evidence into action

This report narrows the next study step to one concept instead of asking the learner to repeat the whole chapter.

What the learner knows Particle counts remain consistent when a neutral atom becomes an ion. Electron transfer and electron sharing lead to stable outer shells.	Priority from this check Separate valence electrons from valency. Six outer electrons can still mean a valency of 2.
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A focused three-step revision plan

1	Define the terms Write one sentence each for valence electrons and valency. Keep them side by side.
2	Use the octet test For 2,6 and 2,8,6, ask how many electrons must be gained or lost. The answer is 2.
3	Try a focused recheck Complete five short configurations, explain one in words, then draw MgO and H ₂ O dot-and-cross diagrams.

How this production sample was formed

1 Versioned content Corrected Chapter 4 v2 selected	2 Fresh assignment Four descriptive questions assigned	3 Locked submission Four answers saved and submitted
4 Rubric evaluation Each answer checked against criteria	5 Quality gates Schema, confidence and safety passed	6 Released result Same evidence shown to child and parent

Evidence basis and limits

This is one four-question, 20-mark practice check. The evaluation is AI-assisted, rubric-grounded, schema-validated, confidence-gated and reviewable. It is preparation evidence—not an official school grade, guaranteed mark or rank, diagnosis, or intelligence claim. The source pack was published provisionally for this authorized production proof of concept; independent content and rights approval remains incomplete. Private identifiers were removed from this sample.