

Change the Variable

Keep a science or maths explanation but change one condition; learners predict which part of the reasoning changes.

5 min preparation | Science, Maths and Humanities

Before the lesson

Choose an investigation with a measurable outcome and a variable that can change.

Teach it in four steps

1. Keep a science or maths explanation but change one condition; learners predict which part of the reasoning changes.
2. Propose a testable relationship between them.
3. Give a scientific reason for the proposed relationship.
4. Check that the investigation could produce evidence against the proposal.

Worked example: Change the Variable

In a photosynthesis investigation, change light intensity while identifying which relevant conditions should stay comparable. Ask how a change in another factor would weaken the interpretation.

Teacher prompt: "Show the relationship and explain the choice you made."

Check understanding

Ask what measurement would challenge the hypothesis.

Fade the support

Remove the if/then frame and require variables and a testable relationship.

Adapt it across subjects

Maths: conjecture a rule, then test cases. Humanities: propose an interpretation and identify evidence that could challenge it.

Adjust the language support

A1-A2 access: keep the subject goal; use visuals, a small word bank, pointing or drawing and partner rehearsal. Use a home language to establish meaning where helpful.

B1-B2 extension: ask for fuller explanations, precise subject vocabulary and qualifications. Reduce sentence openings when learners can organise the response independently.

These are starting points, not placement rules. Judge support from the learner's response to this task; proficiency can differ across skills.