

Explain how scientific knowledge is validated and refined, including the...

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Learning intention

- explain how scientific knowledge is validated and refined, including the role of publication and peer review

Teach and model

- investigating the process of publishing a paper in a scientific journal such as Science , which receives about 12,000 submissions per year, and considering how editors...
- exploring why the work of Professor Barry Marshall and Dr Robin Warren related to the cause of peptic ulcers was first rejected for publication then later validated
- examining the scientific consensus supporting global warming

Check understanding

- Explain the main idea in explain how scientific knowledge is validated and refined, including the... using an example.
- Show the idea in a second way: with words, a model, a diagram or symbols.
- Apply the idea to a short unfamiliar situation and justify the result.

Teaching cautions

- Ask the student to explain their choice, not only state an answer.
- Check that key vocabulary is understood in a new example.
- Mix representations so the skill is transferred rather than copied.

Quick lesson sequence

- Connect to prior knowledge and introduce the key vocabulary.
- Model one clear example, then solve a second example together.
- Finish with an independent check and a short student explanation.