

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

- examining how the work of Rosalind Franklin was critical to the discovery of the double helix structure of DNA and her publications validated the findings of James Watson and...
- exploring the role of large data sets and statistical analysis in validating scientific findings, such as Gregor Mendel's experiments with pea plants
- examining why there are different climate change models used by scientists when there is a climate change consensus among scientists

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.