

Mathematical modelling to solve practical problems involving direct proportion, rates...

use mathematical modelling to solve practical problems involving direct proportion, rates, ratio and scale, including financial contexts; formulate the problems and interpret solutions in terms of the situation; evaluate the model and report methods and findings

Learning intention

- use mathematical modelling to solve practical problems involving direct proportion, rates, ratio and scale, including financial contexts; formulate the problems...

Teach and model

- modelling situations involving direct proportion such as pro rata pay rates, exchange rates, multiple quotes for a job, conversion between scales or other...
- modelling situations that impact on image editing used in social media and how proportion may not be maintained and can result in distorted images
- modelling situations involving compliance with building and construction standards in design and construction, such as the rise and tread of staircases, and vertical and...

Check understanding

- Explain the main idea in mathematical modelling to solve practical problems involving direct proportion, rates... 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.