Mathematical modelling to solve practical problems involving rational numbers and...

use mathematical modelling to solve practical problems involving rational numbers and percentages, including financial contexts; formulate problems, choosing efficient calculation strategies and using digital tools where appropriate; interpret and communicate solutions in terms of the situation, reviewing the appropriateness of the model

Learning intention

- use mathematical modelling to solve practical problems involving rational numbers and percentages, including financial contexts; formulate problems...

Teach and model

- modelling situations involving weather and environmental contexts including temperature or sea depths by applying operations to positive and negative rational...
- modelling situations that involve percentage increases or decreases and explaining why it is an increase or decrease, such as mark-ups, discounts, Goods and Services...
- modelling situations involving personal income tax, interpreting tax tables to determine income tax at various levels of income, including overall percentage of...

Check understanding

- Explain the main idea in mathematical modelling to solve practical problems involving rational numbers and... 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.