

Mathematical modelling to solve applied problems involving growth and decay...

use mathematical modelling to solve applied problems involving growth and decay, including financial contexts; formulate problems, choosing to apply linear, quadratic or exponential models; interpret solutions in terms of the situation; evaluate and modify models as necessary and report assumptions, methods and findings

Learning intention

- use mathematical modelling to solve applied problems involving growth and decay, including financial contexts; formulate problems, choosing to apply linear, quadratic...

Teach and model

- modelling situations and choosing between linear, quadratic and exponential models by representing relationships in a table of values and recognising that linear functions...
- modelling situations involving exponential growth and decay, and contrasting this with linear growth or decay; for example, situations involving constant percentage...
- modelling situations that involve working with authentic information, data and interest rates to calculate compound interest and solve related problems

Check understanding

- Explain the main idea in mathematical modelling to solve applied problems involving growth and decay... 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.