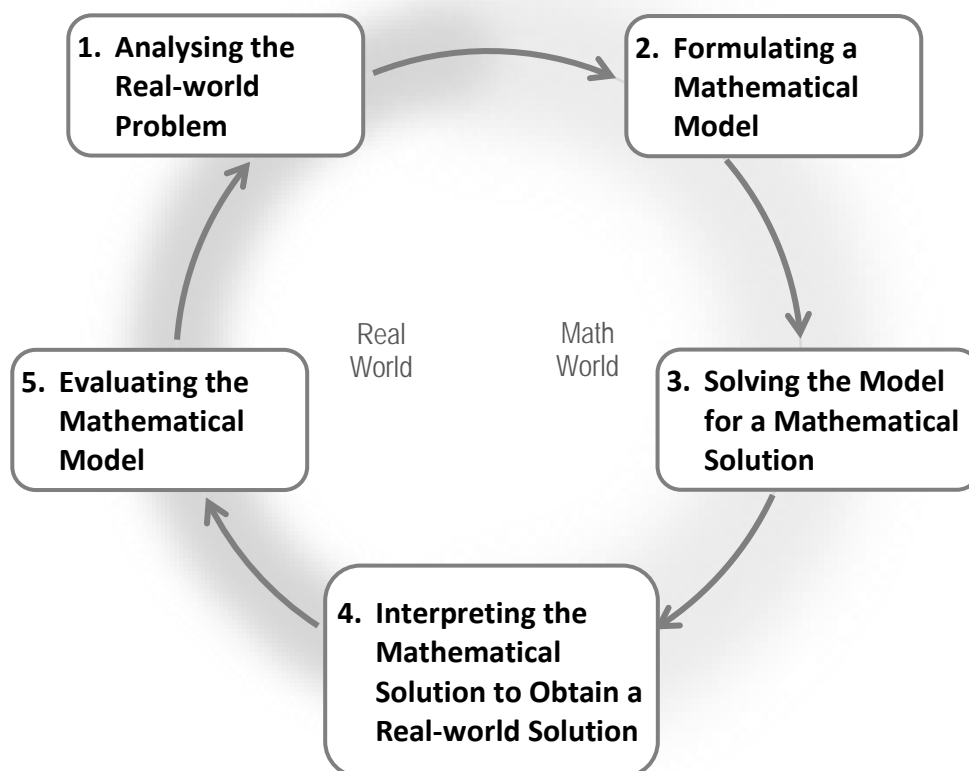


The Process of Mathematical Modelling



1. Analysing the Real-world Problem

- Understand the real-world context
- Clarify key factors of the problem
- Identify related information/data and mathematical elements of the problem

2. Formulating a Mathematical Model

- Put forward assumptions to simplify the real-world problem
- Convey the problem in a mathematical way
- Determine relations between key quantities/variables

3. Solving the Model for a Mathematical Solution

- Apply mathematical knowledge, skills and different tools to solve the model

4. Interpreting the Mathematical Solution to Obtain a Real-world Solution

- Consider the meaning of the mathematical solution with respect to the real-world problem

5. Evaluating the Mathematical Model

- Validate the model against the real-world context
- Reflect on the strengths and limitations of the model
- Compare different models
- Suggest refinements of the model