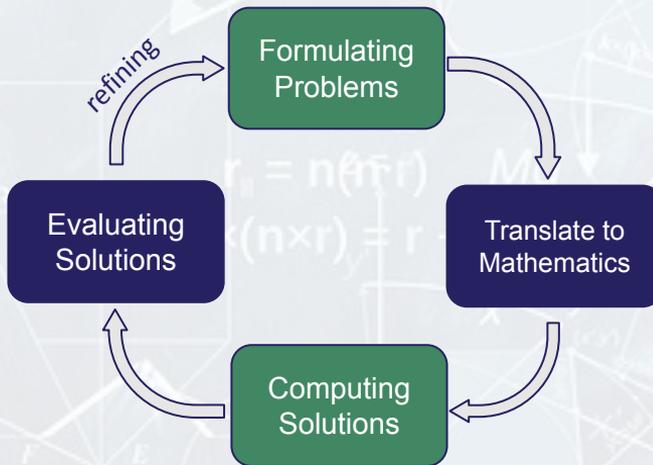




Students should be able to:

- Research the background to a problem to analyse factors or variables that affect the situation
- Determine information relevant to the problem
- Decompose problems into manageable parts
- Determine what assumptions are necessary to simplify the problem situation



- Refine a model and use it to predict a better solution to the problem; iterate the process
- Communicate solution processes in a written report

- Use abstraction to describe systems and to explain the relationship between wholes and parts.
- Abstract the knowledge needed to build a mathematical model.
- Translate the information given in the problem together with the assumptions into a mathematical model that can be solved.

- Compute a solution using appropriate mathematics
- Create a mathematical model that can be interpreted by a computer
- Use computational technology to solve problems
- Solve the mathematical problem stated in the model
- Analyse and perform operations in the model
- Interpret the mathematical solution in terms of the original situation

“In this unifying strand students learn about mathematical modelling as a process that uses mathematics to represent, analyse, make predictions or otherwise provide insight into real-world phenomena.” Applied Maths Specification p.16

1

Concepts then Modelling

Explore a number of mathematical concepts through suitable tasks, word problems etc., then solve a rich modelling problem. In exploring these tasks, modelling competences may also be developed.

Complete a full modelling cycle.

Focus on a subset of competences.

2

Concepts through Modelling

Explore a rich modelling problem and, as the need arises, develop understanding of new mathematical concepts through instruction, guided discovery, research, etc.

Complete a full modelling cycle.

Focus on a subset of competences.