

AT Finite Math Modelling

Overview

Mathematics is a key life skill; it is present in our everyday lives and yet there is a lack of drive to understand how to use it effectively. This program is designed to help students to gain an understanding of mathematics and how it relates to other areas of knowledge, as well as practical applications. Mathematics will be used to explain and analyse cryptography, networks, iterative processes, and scheduling. Mathematical models will be used based on matrices, modular algebra, and vertex-edge graphs. This program focuses on using problem-solving to develop student's mathematical ability to describe the world and solve practical problems. Working with a mentor, students will be encouraged to improve their competence and fluency in problem-solving, communication and interpretation, and technology skills.

Objectives

- Develop and improve analytical thinking for problem solving, especially recognising quantitative information/data within a problem statement
- Build mathematical models to represent quantitative information
- Apply mathematical tools, based on mathematical models, to provide a solution or solutions to a problem
- Understand which, if any, solution makes sense relative to the problem statement

Structure

- Reflect on current knowledge of the range of topics that AT Finite Maths Modelling covers and identify strengths and weaknesses
 - Develop a personalised curriculum
- Attempt problem solving questions from a range of contexts
 - Real-world contexts and applications
 - Recognising the role that maths plays in our lives
 - Developing problem-solving and critical thinking skills
 - Communicate answers clearly and effectively
- Work with a mentor to master the use of technology
 - Explore mathematical models
- Interpret data
 - Question reliability and validity of data to improve critical thinking
 - Improve evaluative thinking
- Improve time management throughout the projects
- Develop presentation skills that communicate in mathematical language

