

AT Post-Euclidean Geometry

Overview

This program is designed for students who seek further advanced studies and applications beyond the Geometry course, involving concepts acquired in Algebra II/Trigonometry. Mentors will guide students through a variety of topics which include non-Euclidean geometries, further work with transformations and constructions, and higher-level work with conic sections. Key to this mathematics program in particular is that it is geared towards Project Based Learning. This type of learning supports students in developing higher order thinking skills such as critical thinking and analysis. Students will investigate real-world applications of mathematics, such as the shapes of satellite dishes, origami, animation design, and the spherical geometry of the Earth.

Objectives

- Explore complex geometric and algebraic concepts
- Understand how to communicate geometric ideas in mathematical language
- Explore both the procedural and the conceptual meaning of measurement

Structure

- Reflect on current knowledge of the range of topics that AT Post-Euclidean Geometry covers and identify strengths and weaknesses
 - Develop a personalised curriculum
- Delve into the techniques, tools, and formulas to determine measurements
 - Identify and appreciate how to apply them in various contexts
- Analyse characteristics and properties of two- and three-dimensional geometric shapes
- Apply visualisation, spatial reasoning, and geometric modelling to solve problems
- Investigate real-world applications of the concepts learnt
 - Apply theoretical knowledge to practical situations

