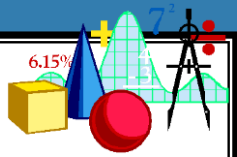
Mathematics, Geometry
Unit IV: Lesson 2

History: **Parallel Alternatives**



In the first half of the nineteenth century mathematicians adopted new postulates about parallel lines and built geometries with properties that differed from those of Euclidean geometry. Research hyperbolic (Bolyai, Lobachevsky) and elliptic (Riemann) geometry.

In your research, look for answers to the following questions: What theorems of Euclidean geometry hold in Non-Euclidean? What do models of elliptic and hyperbolic geometries look like? How are these geometries useful in explaining temperature changes in the universe, the theory of relativity, optics, atomic physics, and general theory of wave proportion?

Design and create a display comparing these geometries to Euclidean geometry and the uses of each.