

Honors Core Content

Cluster Title: 3-D Graphing & Graph Theory
Standard: Use graphing techniques to model situations that extend beyond the coordinate plane.
Concepts and Skills to Master
<ul style="list-style-type: none"> • Graph points and line segments in a three-dimensional coordinate system. • Use Euler Circuits to describe and solve problems involving network paths. • Use Hamiltonian Circuits to describe and solve problems involving network paths.
Guiding Instructional Questions
<ul style="list-style-type: none"> • How do computer programmers draw 3-D spaces on a 2-D screen? • How can a delivery truck drive an efficient route? • How can a snowplow drive an efficient route? • How does the efficient route for a delivery truck differ from that of a snowplow? • What is operations research?
Instructional Strategy
<ul style="list-style-type: none"> • Use technology to construct 3-D graphs. • Compare historical computer game graphics to modern computer game graphics • Use puzzles and classic mathematics problems such as the Konigsberg Bridge to explore Euler Circuits and continuous paths. • Create circuits that describe contextual problems. • Explore sociological behavior using networks. • Compare and contrast Euler and Hamiltonian Circuits for the same networks.