Unit 16: Conics

Content Area: **Mathematics**
Course(s): **PreCalc Trig A**
Time Period: **Semester 2**
Length: **2 weeks**
Status: **Published**

Standards

MA.G-GPE.A.2	Derive the equation of a parabola given a focus and directrix.
MA.G-GPE.A.3	Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.

Enduring Understandings

Students will graph all types of conics and partial conics.

All conics are created from slicing cones at different angles.

Essential Questions

Geometrically, what is a conic section?

What is a degenerate conic?

How can we determine type of conic given general form?

How can we graph a conic from the standard form equation?

Knowledge and Skills

- Graph a circle
- Write the equation of a circle
- Find the equation of a tangent line to a circle
- Define an ellipse.
- Graph an ellipse
- Write the equation of an ellipse
- Graph hyperbolas
- Write the equation of a hyperbola
- Graph parabolas
- Write the equation of a parabola
- Graph conics with domain restrictions

- Graph rotated conics using a calculator

Transfer Goals

Recognize and solve practical or theoretical problems involving mathematics, including those for which the solution approach is not obvious, by using mathematical reasoning and strategic thinking.

Resources

1. Pre-Calculus with Limits - Aufmann
2. Trigonometry 6th edition - Lial
3. Classkick
4. Khan Academy
5. PurpleMath
6. KutaSoftware
7. CK-12
8. Quizlet
9. Albert I/O
10. Desmos
11. Problem Attic