Unit #3: Polynomials

Content Area: **Mathematics**
Course(s): **PreCalc Trig A**
Time Period: **Semester 1**
Length: **3 weeks**
Status: **Published**

Standards

MA.F-IF.B.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.
MA.F-IF.C.7a	Graph linear and quadratic functions and show intercepts, maxima, and minima.
MA.F-IF.C.7b	Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.
MA.F-IF.C.7c	Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.
MA.F-IF.C.7d	Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.

Enduring Understandings

Students will know what the results of operations on polynomials mean and how they relate to real-life problems.

Students will be able to apply their knowledge of zeros, maximums and minimums to word problems and will be able to use the graphing calculator to find their answers.

Essential Questions

What are zeros of a polynomial and what do they represent?

How does the value of a function compare to the remainder when the function is divided?

How do you find the maximum and minimum of a function?

Knowledge and Skills

- Perform synthetic division.
- Graph polynomial functions (quick sketches).
- Apply Rational Root Theorem and the Complex Zero Theorem.
- Use a graphing calculator to find the roots of a function, and max and mins of a function.
- Graph polynomial functions with multiple zeros.
- Apply polynomial function content to real-world max/min problems.
- Create a polynomial from given information; write a polynomial function given zeros.

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