

CONNEAUT AREA SCHOOL DISTRICT

MATHEMATICS

UNIT OF STUDY: Polynomial functions of higher degree, models, synthetic division and complex numbers

COURSE/GRADE: Pre Calculus

WEEKS: 5

Module 3

Focus (emphasis) Standards/EC:

Quadratic functions and models

Polynomial functions of higher degree

Synthetic division

Zeros of polynomial functions

Rational functions

Nonlinear Inequalities

refer to PA standards

Technology/manipulatives:

I pad

Smart board

Electronic text book

calculator

Ruler

3 D figures

Nets

Dice

CAD program

Online videos for reinforcement

Studyzone.org

Studyisland

Firstinmath

Graph paper

Important (reinforced) Standards/EC:

use graphing calculator/technology

solve, sketch polynomial, rational and radical equations/inequalities

represent statistical data graphically for use in problem solving and analysis

graph, determine the components, and evaluate a function

sketch functions by translation

find arithmetic, compositions, and inverses of functions

find appropriate domains

use factoring, synthetic division, and long division to determine zeroes of polynomials

Reading, writing, speaking strategies:

Word problems, journal writing, bell ringers, partner sharing, think aloud, paraphrasing, board work, sharing out to class, note taking skills development

graph to determine domain, intercepts, and asymptotes	
<p>Vocabulary: quadratic, polynomial, parabola, vertex, axis, maximum, minimum, standard form, continuous, piecewise, power functions, leading coefficient, real zeros, long division, improper, proper, synthetic division, remainder/factor theorem, complex number, conjugate</p>	<p>Questioning and discussion techniques:</p> <p>Real world problems/applications, bill ringers, exit tickets, journals, Frayer model, small group tasks</p>
<p>Real life application: graphic design, tool design, optics, engineering, architecture, manufacturing, amusement parks, gears, bikes, clocks, space probe, bridge design, data analysis, population statistics, college enrollment, cost/revenue/profit, digital music sales, fluid flow, fuel use, diesel mechanics, path of diver, home prices, advertising, recycling</p> <p>Career connections: www.xpmath.com/careers/lite.php</p>	<p>Performance assessment: quiz, test, Studyisland, performance projects, homework, group discussion, self-generated math labs</p>
<p>Computation:</p> <p>Two step algebraic equations</p> <p>Ratio and proportions</p> <p>Slope, distance, midpoint</p> <p>Equations of lines</p> <p>Difference quotient</p> <p>Various polynomial equations and manipulations</p> <p>Sketching polynomials</p>	<p>Accommodations/adaptations: Limiting , homework problems, guided problem solving, peer groups, tutorial time, needs based on IEP</p>
<p>SAS Module Resources: http://www.pdesas.org/standard/PACore</p> <p>http://www.corestandards.org/wp-content/uploads/Math_Standards.pdf</p> <p>http://www.education.pa.gov/K-12/Pages/default.aspx</p> <p>http://achievethecore.org/dashboard/300/search/1/2/9/10/11/12</p>	