

CONNEAUT AREA SCHOOL DISTRICT

MATHEMATICS

UNIT OF STUDY: Parent functions with: transformations, combinations, inverse, mathematical modeling and variation

COURSE/GRADE: Pre Calculus

WEEKS: 6

Module 2

Focus (emphasis) 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
 graph to determine domain, intercepts, and asymptotes
 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
 National Library of Virtual Manipulatives
 Graph paper

Important (reinforced) Standards/EC:
 All items listed above to be reinforced throughout year.
 Tools of Pre calculus, linear and non linear algebra

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

Vocabulary: linear functions, squaring functions, parent functions, constant, identity, cubic square root, reciprocal, step function, shift, reflection, composite functions, combinations, inverse function, horizontal line test, one-to-one function, direct variation, inverse variation

Questioning and discussion techniques:
 Real world problems/applications, bill ringers, exit tickets, journals, Frayer model, small group tasks

<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</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>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>	