Waukegan Community Unit
School District #60
Lincoln Center for Educational Services
Division of Teaching, Learning, and Professional Practices

The Core Principals: Standards for Mathematical Practice
Model Traditional Pathway: Model Algebra II
Overview

The goal of the Standards for Mathematical Practice is to complement the Common Core State Standards by working to engage students in the subject matter, ensuring that they grow in maturity and expertise from Pre-Kindergarten through High School.

Number and Quantity
- The Complex Number System
    - Perform arithmetic operations with complex numbers
    - Use complex numbers in polynomial identities and equations
- Vector and Matrix Quantities
    - Represent and model with vector quantities
    - Perform operations on matrices and use matrices in applications

Algebra
- Seeing Structure in Expressions
    - Interpret the structure of expressions
    - Write expressions in equivalent forms to solve problems
- Arithmetic with Polynomials and Rational Expressions
    - Perform arithmetic operations on polynomials
    - Understand the relationship between zeros and factors of polynomials
    - Use polynomial identities to solve problems
    - Rewrite rational expressions
- Creating Equations
    - Create equations that describe numbers or relationships
- Reasoning with Equations and Inequalities
    - Understand solving equations as a process of reasoning and explain the reasoning
    - Represent and solve equations and inequalities graphically

Functions
- Interpreting Functions
    - Interpret functions that arise in applications in terms of the context
    - Analyze functions using different representations
- Building Functions
    - Build a function that models a relationship between two quantities
    - Build new functions from existing functions
- Linear, Quadratic, and Exponential Models
    - Construct and compare linear, quadratic, and exponential models and solve problems

Functions, Continued

- Trigonometric Functions
    - Extend the domain of trigonometric functions using the unit circle
    - Model periodic phenomena with trigonometric functions
    - Prove and apply trigonometric identities

Statistics and Probability

- Interpreting Categorical and Quantitative Data
    - Summarize, represent, and interpret data on a single count or measurement variable
- Making Inferences and Justifying Conclusions
    - Understand and evaluate random processes underlying statistical experiments
    - Make inferences and justify conclusions from sample surveys, experiments and observational studies
- Using Probability to Make Decisions
    - Use probability to evaluate outcomes of decisions

Standards for Mathematical Practice
1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for an express regularity in repeated reasoning