PETERS TOWNSHIP MIDDLE SCHOOL
COURSE SYLLABUS: ALGEBRA 1 ENRICHED

Course Information	Teacher Information
Course Length: Full Year	Names: Ms. Kristin McCune, Mrs. Chris Kedzuf, Mrs. Tara Rebar

Course Overview and Essential Skills

The course focuses on developing problem solving skills by making and justifying generalizations based on their experiences with fundamental algebraic concepts. Linear and quadratic functional relationships are examined in a variety of problem situations, and these functions form the basis for the study of equations and the development of algebraic skills. Students use a variety of representations such as concrete, numerical, algorithmic, and graphical. This course addresses the essential knowledge and skills for Enriched Algebra 1 at a faster pace with a greater depth and broader scope with higher expectations for student performance.

This course incorporates additional units and sections not covered in the Academic Algebra course. Additionally, students are provided with more demanding nightly homework and tests.

Course Textbook, Supplemental Resources and Required Materials

- Algebra 1 (2011) & ISBN#: 978-0-030-99574-3
- Textbook website: my.hrw.com
- Think Through Math Website: https://lms.thinkthroughmath.com/users/sign_in
- Materials:
    o Binder and paper (or folder and notebook)
    o Pencils
    o Red pen
    o Calculator: TI-30XS Multiview (best calculator for use in Algebra 1)

Course Outline of Material Covered:

Unit or Topic	Course Activities/Resources	Timeframe
Chapter 1: Foundations for Algebra • Powers and Exponents • Roots and Real Numbers • Order of Operations	• Focus problems • Notes and individual and group practice for each section in the unit packet • Homework • Quizzes and Test	Approximately 2 weeks
Chapter 2: Equations • Solve Two-Step and Multistep Equations • Solve Equations with Variables on Both Sides • Solve for a Variable • Solve Absolute-Value Equations	• Focus problems • Notes and individual and group practice for each section in the unit packet • Homework • Quizzes and Test	Approximately 2 weeks

Chapter 3: Inequalities
  • Solve Two-Step and Multistep Inequalities
  • Solve Inequalities with Variables on Both Sides
  • Solve Compound Inequalities
  • Solve Absolute-Value Inequalities
	• Focus problems
	• Notes and individual and group practice for each section in the unit packet
	• Homework
	• Quizzes and Test
		Approximately 3 weeks

Chapter 4: Functions
  • Graph Relationships
  • Relations and Functions
  • Write Functions
  • Graph Functions
  • Scatterplots and Trend Lines
	• Focus problems
	• Notes and individual and group practice for each section in the unit packet
	• Homework
	• Quizzes and Test
		Approximately 2 weeks

Chapter 5: Linear Functions
  • Identify Linear Functions
  • Use Intercepts
  • Rates of Change and Slope
  • Slope Formula
  • Slope-Intercept Form
  • Point-Slope Form
  • Slopes of Parallel and Perpendicular Lines
	• Focus problems
	• Notes and individual and group practice for each section in the unit packet
	• Homework
	• Quizzes and Test
		Approximately 3 weeks

Chapter 6: Systems of Equations and Inequalities
  • Solve Systems by Graphing
  • Solve Systems by Substitution
  • Solve Systems by Elimination
  • Solve Special Systems
  • Solve Linear Inequalities
  • Solve Systems of Linear Inequalities
	• Focus problems
	• Notes and individual and group practice for each section in the unit packet
	• Homework
	• Quizzes and Test
		Approximately 3 weeks

Chapter 7: Exponents and Polynomials
  • Integer Exponents
  • Multiplication Properties of Exponents
  • Division Properties of Exponents
  • Rational Exponents
  • Powers of 10 and Scientific Notation
  • Polynomials
  • Add and Subtract Polynomials
  • Multiply Polynomials
  • Special Products of Binomials
	• Focus problems
	• Notes and individual and group practice for each section in the unit packet
	• Homework
	• Quizzes and Test
		Approximately 5 weeks

Chapter 8: Factoring Polynomials
  • Factor by GCF
  • Factor $x^2 + bx + c$
  • Factor $ax^2 + bx + c$
  • Factor Special Products
  • Choose a Factoring Method
  • Simplify Rational Expressions
	• Focus problems
	• Notes and individual and group practice for each section in the unit packet
	• Homework
	• Quizzes and Test
		Approximately 4 weeks

Standardized Algebra Review • Pythagorean Theorem • Linear Equations • Systems of Equations and Inequalities • Rational and Irrational Numbers • Evaluate Roots • Transformations • Exponents • Radical Expressions	• Focus problems • Notes and individual and group practice for each section in the unit packet • Homework • Quizzes and Test	Approximately 6 weeks
Chapter 9: Quadratic Functions and Equations • Solve Quadratic Equations by Factoring • Solve Quadratic Equations by Using Square Roots • The Quadratic Formula and the Discriminant	• Focus problems • Notes and individual and group practice for each section in the unit packet • Homework Quizzes and Test	Approximately 2 weeks
Chapter 10: Data Analysis and Probability • Frequency and Histograms • Data Distributions • Experimental Probability • Theoretical Probability • Independent and Dependent Events	• Focus problems • Notes and individual and group practice for each section in the unit packet • Homework • Quizzes and Test	Approximately 2 weeks

****Depending on the needs of the class or changes in the school year, the course outline is subject to change.***