Algebra 1 Part A Syllabus (2012-2013)

Unit 1 - From Patterns to Algebra

Objectives:
- Objective 1- Define number sequence, constant difference, term, variable, expression, and equation-
- Objective 2 - Use differences to identify patterns and make predictions in number sequences-
- Objective 3 - Use variables to represent unknown quantities including real world situations-
- Objective 4 - Evaluate expressions using the algebraic order of operations-
- Objective 5 - Substitute values into algebraic expressions-
- Objective 6- Express large and small numbers in scientific notation-
- Objective 7- Express numbers from scientific notation to standard notation

Unit 2 – Graphing Points and Examining Linear Equations

Objectives:

- Objective 1- Define linear equation, independent variable, dependent variable, negative correlation, positive correlation, scatter plot, line of best fit, coordinate plane, x-axis, and y-axis-
- Objective 2 - Plot points and lines on a coordinate plane-
- Objective 3 - Represent linear patterns with equations-
- Objective 4 - Represent linear equations with graphs-
- Objective 5 - Create a scatter plot-
- Objective 6 - Find the line of best fit-
- Objective 7 - Write an equation to model and predict based off the line of best fit-

Unit 3 - Operations with Real Numbers

Objectives:
- Objective 1 - Define natural numbers, whole numbers, integers, rational numbers, irrational numbers, real numbers, absolute value, identity property of addition, additive property of addition, definition of subtraction(add the opposite), identity property of multiplication, multiplicative inverse property-
- Objective 2 - Compare real numbers
- Objective 3 - Simplify expressions involving opposites and absolute values
- Objective 4 - Add numbers with like and unlike signs
- Objective 5 – Subtract numbers with like and unlike terms
- Objective 6 – Multiply and divide positive and negative numbers
- Objective 7 – Evaluate expressions using order of operations

Unit 4 - Properties for Simplifying Algebraic Expressions:

Objectives:
- Objective 1 – Define commutative property of addition, commutative property of multiplication, associative property of addition, associative property of multiplication, distributive property, coefficient, constant, exponent, like terms, and base-
- Objective 2 – Apply the commutative, associative, and distributive properties-
- Objective 3 – Use distributive property to combine like terms-
- Objective 4 – Simplify expressions with multiple variables-
- Objective 5 – Multiply expressions containing variables-
- Objective 6 – Divide expressions containing variables-

Unit 5-Solving Linear Equations:

Objectives:
- Objective 1 – Define subtraction property of equality, addition property of equality, solution, division property of equality, multiplication property of equality, reciprocals-
- Objective 2 – Solve equations by using addition-
- Objective 3 – Solve equations by using subtraction-
- Objective 4 – Solve equations by using multiplication-
- Objective 5 – Solve equations by using division-
- Objective 6 – Determine if the solution is correct

Unit 6 – Writing and solving Multistep Equations:

Objectives:
- Objective 1 – Write equations that represent real-world situations-
- Objective 2 – Solve two-step equations-
- Objective 3 – Write multistep equations-
- Objective 4 – Solve multistep equations-
- Objective 5 – Use distributive property to solve equations-
- Objective 6 – Solve real-world problems by using multistep equations

Unit 7 – Solving and Graphing Inequalities:

Objectives:
- Objective 1 – Identify inequality symbols
- Objective 2 – Solve inequalities that involve addition
- Objective 3 – Solve inequalities that involve subtraction
- Objective 4 – Graph an inequality
- Objective 5– Write inequalities given real-world situations
- Objective 6– Interpret inequalities given real-world situations
- Objective 7– Apply the multiplication property of inequality
- Objective 8– Apply the division property of inequality
- Objective 9– Solve two-step inequalities in one variable

Unit 8 Proportions and Percents:

Objectives:
- Objective 1 – Define ratio, cross product property, unit rate, unit price, percent, discount-
- Objective 2 – Solve proportions using cross multiplication-
- Objective 3 – Use proportions to solve problems-
- Objective 4 – Find equivalent fractions-
- Objective 5 – Find equivalent decimals-
- Objective 6 – Find equivalent percents-
- Objective 7 – Solve problems involving percents-

Unit 9 Probability:

Objectives:
- Objective 1 – Define theoretical probability, favorable outcome, experimental probability, compound events, sample space, Venn diagram, intersection, addition of probabilities principle, and independent events-
- Objective 2 – Find the experimental probability that an event will occur-
- Objective 3 – Find the theoretical probability that an event will occur-
- Objective 4 – Find the sample space of an experiment-
- Objective 5 – Find the union and intersection of events-
- Objective 6 – Apply the addition of probabilities principle-
- Objective 7 – Find the probability of independent events-
- Objective 8 – Find the probability for compound events-

Unit 10 – Measures of Central Tendencies:

Objectives:
- Objective 1 – Define mean, median, mode, range, stem-and-leaf plot, histogram, and box-and-whisker plot-
- Objective 2 – Find the mean of a set of data-
- Objective 3 – Find the median of a set of data-
- Objective 4 – Find the mode of a set of data-
- Objective 5 – Represent data using frequency tables-
- Objective 6 – Interpret line graphs-
- Objective 7 – Interpret bar graphs-
- Objective 8 – Interpret circle graphs-
- Objective 9 – Represent data using circle graphs-
- Objective 10 – Interpret Stem-and-leaf plots-
- Objective 11 – Interpret histograms-
- Objective 12 – Interpret box-and-whisker plots-
- Objective 13 – Represent data with stem-and-leaf plots-
- Objective 14 – Represent data with histograms-
- Objective 15 – Represent data with box-and-whisker plots-

Unit 11- Exponent Properties:

Objectives:
- Objective 1 – Define exponents, powers, base, coefficient, degree, monomial-
- Objective 2 – Simplify exponents using the Product of Powers Property-
- Objective 3 – Simplify Exponents using the Power of a Power Property-
- Objective 4 – Simplify exponents using the Power of a Product Property-
- Objective 5 – Simplify exponents using the Quotients of Powers Property-
- Objective 6 – Simplify exponents using the Powers of a Quotient Property-
- Objective 7 – Simplify exponents using the Zero Exponent Property -
- Objective 8 – Simplify exponents using the Negative Exponent Property -
- Objective 9 – Simplify exponents using multiple properties-

Unit 12 – Word Problems:

Objectives:
- Objective 1 – Define literal equation, formula, consecutive, and integer-
- Objective 2 – Solve literal equation for a specific variable-
- Objective 3 – Use formulas to solve problems-
- Objective 4 – Set up and solve consecutive integer problems-
- Objective 5 – Solve distance problems-
- Objective 6 – Solve rate problems-
- Objective 7 – Solve time problems-

Unit 13 – Function and Relations:

Objectives:
- Objective 1– Define relation, function, domain, and range –
- Objective 2– Be able to determine if a relation is a function given ordered pairs, a graph, or a table
- Objective 3– Be able to identify the domain and range of a relation given ordered pairs or a table
- Objective 4– Analyze a set of data for the existence of a pattern by completing a table or a sequence
- Objective 5– Be able to express a pattern as an equation given a table

Unit 14 – Rational Expressions:

Objectives:

- Objective 1– Simplify Rational Expressions -
- Objective 2 - Add Rational Expressions –
- Objective 3 – Subtract Rational Expressions-