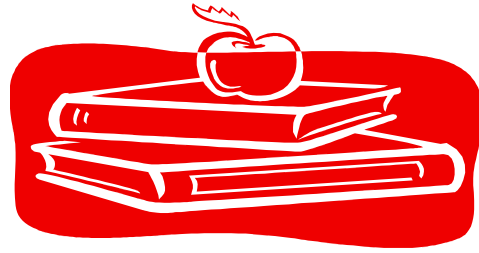


Mackay Junior/Senior High School



COURSE: Algebra I

Date: 8/22/2011

Teacher with contact information: **LaRue Lambert**

Room: 104

Phone Number: 588-2262 ext 25

Email: larulamb@mackayschools.org

COURSE DESCRIPTION

Algebra I is an introduction to variables, constants, expressions and equations. Topics covered are: simplifying expressions and solving equations, order of operations, properties, integer operations, polynomials, factoring, solving and graphing linear and quadratic equations.

The course will begin with a pre-assessment and review of basic skills. Skill review will continue throughout the school year as needed. Unit 1 will define Expressions, Equations and Functions and then focus on Linear Equations. Unit 2 will cover Linear Functions and Inequalities and Systems of Linear Equations and Inequalities. Unit 3 will focus on Nonlinear expressions, equations and functions. In Unit 4 we will learn about radical and rational functions. Unit 5 will focus on Statistics and Probability.

COMMON CORE / STATE CONTENT STANDARDS/VOCABULARY OBJECTIVES

- Write algebraic expressions
- Use the order of operations
- Solve equations
- Represent relations and functions
- Use conditional statements and counterexamples
- Solve equations by using the four basic operations
- Solve equations by using multiple steps
- Solve proportions
- Use formulas to solve real world problems
- Identify linear equations, intercepts, and zeros
- Graph and write linear equations
- Use rate of change to solve problems
- Write and Graph linear equations in various forms
- Use scatter plots and lines of fit, and write equations of best-fit lines using linear regression
- Identify and graph special functions

- Solve one-step and multi-step inequalities
- Solve compound inequalities and inequalities involving absolute value
- Graph inequalities in two variables
- Solve systems of linear equations by graphing, substitution and elimination
- Solve systems of linear inequalities by graphing
- Simplify expressions involving monomials
- Use scientific notation
- Find degree of polynomials, write polynomials in standard form, and add, subtract, and multiply polynomials.
- Factor Monomials
- Factor trinomials
- Factor differences of squares
- Solve quadratic equations
- Solve quadratic equations by graphing, completing the square, and using the Quadratic Formula
- Graph exponential functions
- Identify geometric sequences.
- Graph and transform radical functions
- Simplify, add, subtract, and multiply radical expressions
- Solve radical equations
- Use the Pythagorean Theorem
- Find Trigonometric Ratios
- Identify and graph inverse variations
- Identify excluded values of rational functions
- Multiply, divide, and add rational expressions
- Divide polynomials
- Solve rational equations

INSTRUCTIONAL MATERIALS

Textbook: Glencoe McGraw-Hill Algebra I
 Glencoe.com – online resources for Algebra I

UNITS WITH INSTRUCTIONAL DATES

The following lesson schedule is subject to revision.

Week	Lesson	Description
1	1.1 -1.3	Pre-Assessment Variables & Expressions, Order of Operations, Properties of Numbers
2	1.4 – 1.6	The Distributive Property, Equations, Representing Relations
3	1.7 – 1.8	Representing functions, Logical Reasoning and Counterexamples

	Chapter 1 Review & Test	
4	2.1-2.3	Writing Equations, Solving Equations, Solving Multi-Step Equations
5	2.4 – 2.6	Solving Equations with the Variable on Each Side, Solving Equations Involving Absolute Value, Ratios and Proportions
6	2.7 - 2.9	Percent of Change, Literal Equations and Dimensional analysis, Weighted Averages
7	Chapter 2 Review and Test	
8	3.1- 3.4	Graphing Linear Equations, Solving Linear Equations by Graphing, Rate of change and Slope
9	3.5 – 3.6 Chapter 3 Review and Test	Arithmetic Sequences as Linear Functions, Proportional and Non-proportional Relationships
End of 1 st Quarter		
10	4.1 – 4.3	Graphing Equations in Slope Intercept Form, Writing Equations in Slope-Intercept Form, Writing Equations in Point-Slope Form
11	4.4 - 4.6	Parallel and Perpendicular Lines, Scatter Plots and Lines of Fit, Regression and Median-Fit Lines
12	4.7 Ch 4 Review and Test	Special Functions
13	5.1 – 5.3	Solving Inequalities by Addition, Subtraction, Multiplication, and Division, Solving Multi-Step Inequalities
14	5.4 – 5.6	Solving Compound Inequalities, Inequalities Involving Absolute Value, Graphing Inequalities in Two Variables
15	Chapter 5 Review & Test	
16	6.1-6.3	Graphing Systems of Equations, Substitution, Elimination using addition and subtraction

17	6.4 – 6.6	Elimination using multiplication, applying systems of linear equations, organizing data using matrices
18	Semester Tests	
End of First Semester		
Week	Lesson	Description
19	6.7-6.8 Chapter 6 Review & Test	Using Matrices to Solve Systems of equations, systems of Inequalities
20	7.1 – 7.3	Multiplying Monomials, Dividing Monomials, Scientific Notation
21	7.4 - 7.6	Poynomials, Adding and Subtracting Polynomials, Multiplying a Polynomial by a Monomial
22	7.7 – 7.8 Chapter Review & Test	Multiplying Polynomials, Special Products
23	8.1 – 8.3	Monomials & factoring, Using the Distributive Property, quadratic Equations
24	8.4 – 8.6	Quadratic Equations(cont), Difference of Squares, Perfect Squares
25	Ch 8 Review and Test	
26	9.1 – 9.3	Graphing Quadratic Functions, Solving Quadratic Equations by Graphing, Transformations of Quadratic Functions
27	9.4 – 9.6	Completing the Square, Quadratic Formula, Exponential functions
28	9.7- 9.9	Growth & Decay, Geometric Sequences as Exp Functions, Analyzing Functions with successive Differences and Ratios
End of 3 rd Quarter		
29	Ch 9 Review and Test	
30	10.1 – 10.3	Square Root Functions, Simplifying Radical Expressions, Operations with Radical Expressions
31	10.4 – 10.6	Radical Equations, The Pythagorean Theorem, The Distance and Mid-point formulas
32	10.7 – 10.8	Similar Triangles, Trigonometric Ratios

33	Ch 10 Review & Test	
34	11.1 – 11.3	Inverse Variation, Rational Functions, Simplifying Rational Expressions
35	11.4 – 11.6	Multiplying and Dividing Rational expressions, Dividing Polynomials, Adding and Subtracting Rational Expressions,
36	11.7 – 11.8	Mixed Expressions and complex Fractions, Rational Equations
37	Chapter 11 Review and Test	
38	Review for Semester Test	
39	Semester Test	
End of 2 nd Semester		

ASSESSMENTS / TESTS

See Instructional Units/Dates

GRADING PROCEDURES

Daily Homework (6 – 8 per Chapter)	10 each
Daily 5 min Checks	5 each
Homework Quiz (3-4 per Chapter)	approx 10 each
Chapter Test	100
Notes, Class Participation, Projects	25
Semester Tests	200 each

Homework will be due daily. Full points will not be given if the assignment is late.

Quizzes and Tests must be taken during the class period. If absent, the student should arrange a make-up time before or after school.

Students should take daily notes and participate in classroom discussions. The notes and classroom participation will be graded at the end of each chapter.

Extra practice and tutorials are provided on the website Glencoe.com. The use of this website is optional and available to help students better understand the materials presented during class.

Extra Credit will be given for practice quizzes (2 pts) and practice tests (5 pts) completed on **Glencoe.com**. Points will only be given for quizzes that have been completed with 100% accuracy and

tests that have been completed with at least 80% accuracy. Students may redo practice quizzes until they get all items correct. Extra credit for practice quizzes and tests will only be given for the current chapter. Results must be emailed to me at larulamb@mackayschools.org to receive credit.

Grades will be calculated by dividing the total points earned by a student by the total points possible.

CLASS RULES

Be in your seat and working on the 5 minute check when the bell rings.

Have homework completed and ready to correct at the beginning of class.

Treat other students and teacher with respect.

Participate in Class.

Learn to love Math!

MISCELLANEOUS

Materials: Two Spiral Notebooks
- One for Homework, One for Notes and Warm-up Problems (you may use loose-leaf paper for homework assignments if preferred)
Scientific Calculator (TI- 30a or similar) cost around \$10 – A graphing calculator might be useful at times but is not required until Algebra II
Number 2 pencils and erasers