

Argenta-Oreana High School
Algebra I
Textbook: Algebra, Structure and Method, Book I
<McDougall-Littell/Houghton Mifflin, 1997

Date Semester	IL Learning Standards	Unit and/or Essential Question Content and/or Skills	Assessments and/or Products
Semester 1	6.A, 8.A.4b 6.B, 8.A.4b 6.B, 8.A.4b, 8.D.4 6.A, 6.B, 8.A.4b 6.A, 6.B, 8.A.4b 8.B.4a, 8.D.4 6.A, 6.B, 8.A.4b 8.B.4a, 8.D.4 6.A, 6.B, 8.A.4b 8.B.4a, 8.D.4 8.B.4a, 8.D.4	<u>Chapter 1: Introduction to Algebra</u> <ul style="list-style-type: none"> • 1.1 Variables – simplify numerical expressions and evaluate algebraic expressions. • 1.2 Grouping Symbols – simplify expressions with and without grouping symbols. • 1.3 Equations – find solution sets of equations over a given domain. • 1.4 Translating Words into Symbols – translate phrases into variable expressions. • 1.5 Translating Sentences into Equations – translate word sentences into equations. • 1.6 Translating Problems into Equations – translate simple word problems into equations. • 1.7 A Problem Solving Plan – using a plan to solve word problems. • 1.8 Number Lines – graph real numbers on a number line and compare real numbers. • 1.9 Opposites and Absolute Values – use opposites and absolute values. 	Students will take notes and complete assigned problems from the textbook. Students may also be required to complete related worksheets. Periodically, students will be asked to work in small groups or complete work on the dry erase boards. Students are allowed to use calculators, and they will take a final chapter test.
Semester 1	6.A.4 8.A.4b, 8.B.4a 8.A.4b, 8.B.4a	<u>Chapter 2: Working with Real Numbers</u> <ul style="list-style-type: none"> • 2.1 Basic Assumptions – use number properties to simplify expressions. • 2.2 Addition on a Number Line – add real numbers using a number line or properties about opposites. • 2.3 Rules for Addition – add real numbers using rules for addition. 	Students will take notes and complete assigned problems from the textbook. Students may also be required to complete related worksheets. Periodically,

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	8.A.4b, 8.B.4a 8.A.4b, 8.B.4a 8.A.4b, 8.B.4a 8.A.4b, 8.B.4a 8.A.4b, 8.B.4a 8.A.4b, 8.B.4a	<ul style="list-style-type: none"> • 2.4 Subtracting Real Numbers – subtract real numbers and simplify expressions involving differences. • 2.5 The Distributive Property – use the distributive property to simplify expressions. • 2.6 Rules for Multiplication – multiply real numbers. • 2.7 Problem Solving: Consecutive Integers – write equations to represent relationships among integers. • 2.8 The Reciprocal of a Real Number – simplify expressions involving reciprocals. • 2.9 Dividing Real Numbers – divide real numbers and simplify expressions involving quotients. 	students will be asked to work in small groups or complete work on the dry erase boards. Students are allowed to use calculators, and they will take a final chapter test.
Semester 1	6.D.4, 8.A.4b, 8.B.4a, 8.D.4 6.D.4, 8.A.4b, 8.B.4a, 8.D.4 6.D.4, 8.A.4b, 8.B.4a, 8.D.4 6.D.4, 8.A.4b, 8.B.4a, 8.D.4 6.D.4, 8.A.4b, 8.B.4a, 8.D.4 6.D.4, 8.A.4b, 8.B.4a, 8.D.4	Chapter 3: Solving Equations and Problems <ul style="list-style-type: none"> • 3.1 Transforming Equations: Addition and Subtraction – solve equations using addition or subtraction. • 3.2 Transforming Equations: Multiplication and Division – solve equations using multiplication or division. • 3.3 Using Several Transformations – solve equations by using more than one transformation. • 3.4 Using Equations to Solve Problems – using a plan to solve word problems. • 3.5 Equations with the Variable on Both Sides – solve equations with the variable on both sides. • 3.6 Problem Solving: Using Charts – organize the facts of a problem in a chart. 	Students will take notes and complete assigned problems from the textbook. Students may also be required to complete related worksheets. Periodically, students will be asked to work in small groups or complete work on the dry erase boards. Students are allowed to use calculators, and they will take a final chapter test.

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	6.B.4, 6.D.4, 8.D	<ul style="list-style-type: none"> • 3.7 Cost, Income, and Value Problems – solve problems involving cost, income, and value. 	
Semester 1	6.B, 8.A.4b, 8.D.4 6.B, 8.A.4b, 8.D.4 6.B, 8.A.4b, 8.D.4 6.B, 8.A.4b, 8.D.4 6.B, 8.A.4b, 8.D.4	<p><u>Chapter 4: Polynomials</u></p> <ul style="list-style-type: none"> • 4.1 Exponents – write and simplify expressions involving exponents. • 4.2 Adding and Subtracting Polynomials – add and subtract polynomials. • 4.3 Multiplying Monomials – multiply monomials. • 4.4 Powers of Monomials – find powers of monomials. • 4.5 Multiplying Polynomials by Monomials -- multiply a polynomial by a monomial. • 4.6 Multiplying Polynomials – multiply polynomials. • 4.7 Transforming Formulas – transform a formula. 	Students will take notes and complete assigned problems from the textbook. Students may also be required to complete related worksheets. Periodically, students will be asked to work in small groups or complete work on the dry erase boards. Students are allowed to use calculators, and they will take a final chapter test.
Semester 1	8.A.4b, 8.D.4 8.A.4b, 8.D.4 8.A.4b, 8.D.4 8.A.4b, 8.D.4	<p><u>Chapter 5: Factoring Polynomials</u></p> <ul style="list-style-type: none"> • 5.1 Factoring Integers – factor integers and find the greatest common factor of several integers. • 5.2 Dividing Monomials – simplify quotients of monomials and find the GCF of several monomials. • 5.3 Monomial Factors of Polynomials – divide polynomials by monomials and find monomial factors of polynomials. • 5.4 Multiplying Binomials – find the product of two binomials. 	Students will take notes and complete assigned problems from the textbook. Students may also be required to complete related worksheets. Periodically, students will be asked to work in small groups or complete work on the dry erase boards. Students

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Semester 2	8.A.4b, 8.D.4 8.A.4b, 8.D.4 8.A.4b, 8.D.4 8.A.4b, 8.D.4 8.A.4b, 8.D.4 8.A.4b, 8.D.4 8.A.4b, 8.D.4 8.A.4b, 8.D.4	<ul style="list-style-type: none"> • 5.5 Differences of Two Squares – simplify products of the form $(a+b)(a-b)$ and factor differences of two squares. • 5.6 Squares of Binomials – find squares of binomials and factor perfect square trinomials. • 5.7 Factoring Pattern for x^2+bx+c, c positive – factor quadratic trinomials whose quadratic coefficient is 1 and whose constant term is positive. • 5.8 Factoring Pattern for x^2+bx+c, c negative – factor quadratic trinomials whose quadratic coefficient is 1 and whose constant term is negative. • 5.9 Factoring Pattern for ax^2+bx+c – factor general quadratic trinomials with integral coefficients. • 5.10 Factoring by Grouping – factor a polynomial by grouping terms. • 5.11 Using Several Methods of Factoring – factor polynomials completely. • 5.12 Solving Equations by Factoring – use factoring in solving polynomial equations. • 5.13 Using Factoring to Solve Problems – solve problems by writing and factoring quadratic equations. 	are allowed to use calculators, and they will take a mid and final chapter test.
Semester 2	6.A.4, 6.B.4a, 8.A.4b, 8.B.4a 6.A.4, 6.B.4a, 8.A.4b, 8.B.4a 6.A.4, 6.B.4a, 8.A.4b, 8.B.4a	<p><u>Chapter 6: Fractions</u></p> <ul style="list-style-type: none"> • 6.1 Simplifying Fractions – simplify algebraic fractions. • 6.2 Multiplying Fractions – multiply algebraic fractions. • 6.3 Dividing Fractions – divide algebraic fractions. • 6.4 Least Common Denominators – express two or more fractions with their least common denominators. 	Students will take notes and complete assigned problems from the textbook. Students may also be required to complete related worksheets. Periodically,

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Semester 2	6.A, 6.D.4, 8.A.4b, 8.B.4a 6.A, 6.D.4, 8.A.4b, 8.B.4a 6.A, 6.D.4, 8.A.4b, 8.B.4a 6.A, 6.D.4, 8.A.4b, 8.B.4a	<p><u>Chapter 7: Applying Fractions</u></p> <ul style="list-style-type: none"> • 7.1 Ratios – solve problems involving ratios. • 7.2 Proportions – solve problems using proportions. • 7.3 Equations with Fractional Coefficients – solve equations with fractional coefficients. • 7.4 Fractional Equations – solve fractional equations. • 7.5 Percents – work with percents and decimals. • 7.6 Percent Problems – solve problems involving percents. 	Students will take notes and complete assigned problems from the textbook. Students may also be required to complete related worksheets. Periodically, students will be asked to work in small groups or complete work on the dry erase boards. Students are allowed to use calculators, and they will take a final chapter test.
Semester 2	8.B.4a,8.C.4a, 8.D.4 8.B.4a,8.C.4a, 8.D.4 8.B.4a,8.C.4a, 8.D.4	<p><u>Chapter 8: Introduction to Functions</u></p> <ul style="list-style-type: none"> • 8.1 Equations in Two Variables – solve equations in two variables over given domains of the variables. • 8.2 Points, Lines, and Their Graphs – graph ordered pairs and linear equations in two variables. • 8.3 Slope of a Line – find the slope of a line. 	Students will take notes and complete assigned problems from the textbook. Students may also be required to complete related worksheets. Periodically,

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	8.B.4a, 8.C.4a 8.B.4a, 8.C.4a	<ul style="list-style-type: none"> • 8.4 The Slope-Intercept Form of a Linear Equation – use the slope-intercept form of a linear equation. • 8.5 Determining an Equation of a Line – find an equation of a line given the slope and one point on the line, or given two points on the line. 	students will be asked to work in small groups or complete work on the dry erase boards. Students are allowed to use calculators, and they will take a final chapter test.
Semester 2	6.A.4, 8.A.4a 8.D 6.A.4, 8.A.4a 8.D 6.A.4, 6.C, 8.A.4a, 8.D 6.A.4, 8.A.4a 8.D 6.A.4, 8.A.4a 8.D 6.A.4, 8.A.4a 8.D 6.A.4, 8.A.4a 8.D 6.A.4, 8.A.4a 8.D	<u>Chapter 11: Rational and Irrational Numbers</u> <ul style="list-style-type: none"> • 11.1 Properties of Rational Numbers – learn and apply some properties of rational numbers. • 11.2 Decimal Forms of Rational Numbers – express rational numbers as decimals or fractions. • 11.3 Rational Square Roots – find the square roots of numbers that have rational square roots. • 11.4 Irrational Square Roots – simplify radicals and find decimal approximations of irrational square roots. • 11.5 Square Roots of Variable Expressions – find square roots of variable expressions and use them to solve equations and problems. • 11.6 The Pythagorean Theorem – use the Pythagorean Theorem and its converse to solve problems. • 11.7 Multiplying, Dividing, and Simplifying Radicals – simplify products and quotients of radicals. • 11.8 Adding and Subtracting Radicals – simplify sums and differences of radicals. 	Students will take notes and complete assigned problems from the textbook. Students may also be required to complete related worksheets. Periodically, students will be asked to work in small groups or complete work on the dry erase boards. Students are allowed to use calculators, and they will take a final chapter test.

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	6.A.4, 8.A.4a 8.D 6.A.4, 8.A.4a 8.D	<ul style="list-style-type: none"> • 11.9 Multiplication of Binomials Containing Radicals – multiply binomials and rationalize binomial denominators that contain square roots. • 11.10 Simple Radical Equations – solve simple radical equations. 	
Semester 2	8.B.4b, 8.D.4 8.B.4b, 8.D.4	<p><u>Chapter 12: Quadratic Functions</u></p> <ul style="list-style-type: none"> • 12.1 Quadratic Equations with Perfect Squares – solve quadratic equations involving perfect squares. • 12.3 Quadratic Formula – learn the quadratic formula and use it to solve equations. 	