
COURSE INFORMATION

This course meets for a full year. Upon successful completion of the course, students will receive one unit of credit. Students who miss more than 10 classes (5 block periods) may be denied credit.

INSTRUCTIONAL GOALS

Algebra 1 Part 2 is designed to meet the needs of students with varying degrees of mathematics backgrounds who have successfully completed Algebra 1 Part 1 in grade 9.

This course includes instruction in the following areas: functions, equations, inequalities, matrices, data analysis, transformations, exponents, polynomials and factoring, quadratic functions, radicals, coordinate geometry and rational functions. A student who completes both Algebra 1 Part 1 and Algebra 1 Part 2, and/or Algebra 1, may follow these courses with Geometry. This course aligns with the state standards for Elementary Algebra. All Algebra 1 Part 2 students will be required to participate in the State-wide End of Course Examination Program.

INSTRUCTIONAL ORGANIZATION

Generally, students are taught in a lecture/practice format. Students *may* occasionally work in groups. They may also be asked to explain individual problems to the entire class

INSTRUCTIONAL MEDIA

The textbook for this course is *Algebra 1: Concepts and Skills* by Larson, Boswell, Kanold and Stiff. Students are **required** to use book-covers in order to maintain the condition of the textbook. Students who lose or return damaged textbooks at the end of the year will be fined accordingly.

There are no supplemental texts for this class.

Career and/or Instructional Videos may be used in this class.

A detailed calendar and answers to previous tests can be found at my web site:

<http://www.mrholloman.net>

GRADING PROCEDURES

Each piece of graded work carries a possible point value. The grade for a particular piece of work is found by dividing the earned points by the possible points.

All graded work (except exams) will be returned to the student—usually by the next class meeting.

Any graded work done in pen will *not* be counted (i.e., assigned a grade of zero).

A student who disagrees with a particular grade may appeal in writing to me. Any adjustments are solely at my discretion.

METHODS OF ASSESSMENT

Assessment Categories: **Assignments, Quizzes, Tests, Exams.**

Assignments include in-class problem sets, homework checks, and other activities. Assignments will have small possible point values (less than 10 points each). There will be daily assignments.

Quizzes are short problem sets (1 - 5 easy/medium problems) which are assigned at random, unannounced times. They are timed activities, usually lasting no more than 10 minutes. Quizzes will have small possible point values (less than 10 points each). There are usually 1 or 2 quizzes per Chapter.

Tests are longer problem sets (10 - 20 problems of varying difficulty) which occur at the end of each instructional unit. They are timed activities, lasting no more than one class period. Tests will have high possible point values (usually 30 - 70 points each). There will be one test per Chapter.

Exams are long problem sets (20 or more problems of varying difficulty) which occur at the end of each semester. They are timed activities, lasting no more than 90 minutes. Exams will carry possible point values equal to 25% of the semester's possible points (this makes the exam worth 20% of the semester grade, as per school policy).

SCOPE AND SEQUENCE

First Nine Weeks	⇒	Connections to Algebra Properties of Real Numbers Solving Linear Equations Graphing Linear Equations and Functions Writing Linear Equations Solving and Graphing Linear Inequalities
Second Nine Weeks	⇒	Systems of Linear Equations and Inequalities Exponents and Exponential Functions
Third Nine Weeks	⇒	Quadratic Equations and Functions Polynomials and Factoring
Fourth Nine Weeks	⇒	Rational Equations and Functions Radicals and Connections to Geometry

Please visit my [website](#) for a more detailed calendar of events.

STUDY SUGGESTIONS

Completing the assignments is the best way to keep up with the course. Time will be provided to complete assignments in class, but there will be times when these assignments are to be completed at home.

Quizzes and other assignments serve to keep previously learned skills sharp. Students who have kept up with assignments, and who have actively sought assistance when needed, should perform well on these items.

The best way to review for tests is to work out old assignment problems and to try other unassigned problems. I will usually suggest review problems from the chapter review, and provide students with a day to ask any questions about the upcoming test.

Attendance is a major factor in student success. Students should make every effort to attend every class throughout the year—absences should be strictly avoided, except in emergencies.

LATE WORK POLICY

Late work is *not* accepted.

Assignments missed due to an **excused absence** will be handled according to the school's make up work policy, as stated in the student handbook (students have 5 calendar days from date of return to complete make-up work).

EXTRA CREDIT

Very few (if any) extra credit opportunities will be offered. Any points offered will be minimal (less than 5 points), and will be added to the student's earned point total for the current nine weeks.

Students who wish to improve their grades should make an appointment with me for tutoring.

MATERIALS NEEDED

- (1) A notebook. A 3-ring binder with loose-leaf paper is recommended.
- (2) An ample supply of pencils (*pens are not allowed!*).
- (3) Scientific Calculator

EXTRA HELP

I am available for extra help most days before and after school. Students need only make an appointment to receive extra help.

The demanding pace of this course will make it difficult to catch up if a student falls behind—it is imperative that students seek help immediately when they encounter difficulty with a topic.

DISCIPLINE

I believe that my students are capable of obeying the rules, and that any infractions are either the result of misinformation or choice.

In order to eliminate misinformation, here are the additional (beyond district and school) rules for my classroom:

1: Students must bring all required materials—pencil, paper, calculator and textbook—to every class meeting.
2: All graded work must be completed in pencil.
3: Textbooks must be covered with an appropriate book cover.
4: Students must not play games on their calculators.

When a student chooses to break a rule, the following consequences apply:

First Offense	Warning
Subsequent Offenses	15 minutes detention per offense
Severe/Persistent Disruptions	Discipline Referral/Removal from Class

In addition, I reserve the right to clear calculator memory at any time.

ALGEBRA STANDARDS; END OF COURSE EXAMINATION

At the conclusion of this course (late May 2009), students will sit for the SC State End of Course Exam for Algebra. The score on this exam will count for 20% of the student's final grade in the course.

The standards that will be assessed are as follows:

Standard EA-1: The student will understand and utilize the mathematical processes of problem solving, reasoning and proof, communication, connections, and representation.

Indicators

EA-1.1 Communicate a knowledge of algebraic relationships by using mathematical terminology appropriately.

EA-1.2 Connect algebra with other branches of mathematics.

EA-1.3 Apply algebraic methods to solve problems in real-world contexts.

EA-1.4 Judge the reasonableness of mathematical solutions.

EA-1.5 Demonstrate an understanding of algebraic relationships by using a variety of representations (including verbal, graphic, numerical, and symbolic).

EA-1.6 Understand how algebraic relationships can be represented in concrete models, pictorial models, and diagrams.

EA-1.7 Understand how to represent algebraic relationships by using tools such as handheld computing devices, spreadsheets, and computer algebra systems (CASs).

Standard EA-2: The student will demonstrate through the mathematical processes an understanding of the real number system and operations involving exponents, matrices, and algebraic expressions.

Indicators

EA-2.1 Exemplify elements of the real number system (including integers, rational numbers, and irrational numbers).

EA-2.2 Apply the laws of exponents and roots to solve problems.

EA-2.3 Carry out a procedure to perform operations (including multiplication and division) with numbers written in scientific notation.

EA-2.4 Use dimensional analysis to convert units of measure within a system.

EA-2.5 Carry out a procedure using the properties of real numbers (including commutative, associative, and distributive) to simplify expressions.

EA-2.6 Carry out a procedure to evaluate an expression by substituting a value for the variable.

EA-2.7 Carry out a procedure (including addition, subtraction, multiplication, and division by a monomial) to simplify polynomial expressions.

EA-2.8 Carry out a procedure to factor binomials, trinomials, and polynomials by using various techniques (including the greatest common factor, the difference between two squares, and quadratic trinomials).

EA-2.9 Carry out a procedure to perform operations with matrices (including addition, subtraction, and scalar multiplication).

EA-2.10 Represent applied problems by using matrices.

Standard EA-3: The student will demonstrate through the mathematical processes an understanding of relationships and functions.

Indicators

EA-3.1 Classify a relationship as being either a function or not a function when given data as a table, set of ordered pairs, or graph.

EA-3.2 Use function notation to represent functional relationships.

EA-3.3 Carry out a procedure to evaluate a function for a given element in the domain.

EA-3.4 Analyze the graph of a continuous function to determine the domain and range of the function.

EA-3.5 Carry out a procedure to graph parent functions (including $y = x$, $y = \sqrt{x}$, $y = |x|$, and $y = \frac{1}{x}$).

EA-3.6 Classify a variation as either direct or inverse.

EA-3.7 Carry out a procedure to solve literal equations for a specified variable.

EA-3.8 Apply proportional reasoning to solve problems.

Standard EA-4: The student will demonstrate through the mathematical processes an understanding of the procedures for writing and solving linear equations and inequalities.

Indicators

EA-4.1 Carry out a procedure to write an equation of a line with a given slope and a y-intercept.

EA-4.2 Carry out a procedure to write an equation of a line with a given slope passing through a given point.

EA-4.3 Carry out a procedure to write an equation of a line passing through two given points.

EA-4.4 Use a procedure to write an equation of a trend line from a given scatterplot.

EA-4.5 Analyze a scatterplot to make predictions.

EA-4.6 Represent linear equations in multiple forms (including point-slope, slope-intercept, and standard).

EA-4.7 Carry out procedures to solve linear equations for one variable algebraically.

EA-4.8 Carry out procedures to solve linear inequalities for one variable algebraically and then to graph the solution.

EA-4.9 Carry out a procedure to solve systems of two linear equations graphically.

EA-4.10 Carry out a procedure to solve systems of two linear equations algebraically.

Standard EA-5: The student will demonstrate through the mathematical processes an understanding of the graphs and characteristics of linear equations and inequalities.

Indicators

EA-5.1 Carry out a procedure to graph a line when given the equation of the line.

EA-5.2 Analyze the effects of changes in the slope, m , and the y-intercept, b , on the graph of $y = mx + b$.

EA-5.3 Carry out a procedure to graph the line with a given slope and a y-intercept.

EA-5.4 Carry out a procedure to graph the line with a given slope passing through a given point.

EA-5.5 Carry out a procedure to determine the x-intercept and y-intercept of lines from data given tabularly, graphically, symbolically, and verbally.

EA-5.6 Carry out a procedure to determine the slope of a line from data given tabularly, graphically, symbolically, and verbally.

EA-5.7 Apply the concept of slope as a rate of change to solve problems.

EA-5.8 Analyze the equations of two lines to determine whether the lines are perpendicular or parallel.

EA-5.9 Analyze given information to write a linear function that models a given problem situation.

EA-5.10 Analyze given information to determine the domain and range of a linear function in a problem situation.

EA-5.11 Analyze given information to write a system of linear equations that models a given problem situation.

EA-5.12 Analyze given information to write a linear inequality in one variable that models a given problem situation.

Standard EA-6: The student will demonstrate through the mathematical processes an understanding of quadratic relationships and functions.

Indicators

EA-6.1 Analyze the effects of changing the leading coefficient a on the graph of $y = ax^2$.

EA-6.2 Analyze the effects of changing the constant c on the graph of $y = x^2 + c$.

EA-6.3 Analyze the graph of a quadratic function to determine its equation.

EA-6.4 Carry out a procedure to solve quadratic equations by factoring.

EA-6.5 Carry out a graphic procedure to approximate the solutions of quadratic equations.

EA-6.6 Analyze given information to determine the domain of a quadratic function in a problem situation.