

Algebra 1

Course Syllabus



Supervising Teacher

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Course Description:

Algebra 1 **2 semesters** **2 credits** Grades 9-10

This is a one year course in the basic structure of algebra and includes the properties of real numbers, equation solving, polynomial operations, factoring, algebraic fractions, linear equations, and their graphs, systems of their equations, work problems, and inequalities.

Recommended Textbook Options:

McDougal-Littell: Algebra 1

Required:

MCDUGAL LITTELL Algebra 1 SE 2007 Edition I-DEA TOP PICK
MCDUGAL LITTELL Algebra 1 TE 2007 Edition I-DEA TOP PICK *OR*
MCDUGAL LITTELL Algebra 1 Worked Out Solution Key 2007 Edition I-DEA TOP PICK

Harcourt Holt: Algebra 1

Required:

HARCOURT - HOLT Algebra 1 SE 2007 Edition I-DEA TOP PICK
HARCOURT - HOLT Algebra 1 TE 2007 Edition I-DEA TOP PICK

Recommended:

HARCOURT - HOLT Algebra 1 Homework and Practice Workbook 2007 Edition I-DEA TOP PICK
HARCOURT - HOLT Algebra 1 Homework and Practice Workbook, Teacher's Edition 2007 Edition I-DEA TOP PICK
HARCOURT - HOLT Algebra 1 Problem Solving Workbook 2007 Edition I-DEA TOP PICK
HARCOURT - HOLT Algebra 1 Problem Solving Workbook, Teacher's Edition 2007 Edition I-DEA TOP PICK

Glencoe: Algebra - Concepts and Applications

Required:

MCGRAW-HILL - GLENCOE Algebra: Concepts and Applications SE 2006 Edition I-DEA TOP PICK
MCGRAW-HILL - GLENCOE Algebra: Concepts and Applications TE 2006 Edition I-DEA TOP PICK *OR*
MCGRAW-HILL - GLENCOE Algebra: Concepts and Applications Solutions Manual 2006 Edition I-DEA TOP PICK

Recommended:

MCGRAW-HILL - GLENCOE Algebra: Concepts and Applications Practice Workbook 2006 Edition I-DEA TOP PICK
(requires TE)
Word problems practice workbook

Teaching Textbooks – Algebra 1

Required:

TEACHING TEXTBOOKS Algebra 1 Complete Set I-DEA TOP PICK
Supplements for Data, Probability and Graphing.
Aleks Subscription Required with all Teaching Textbooks curricula

Supplemental Materials or Software:

ALEKS subscription or
Apangea
HotMath

Supplies or Equipment:

Scientific Calculator

End of Course Assessment Options:

Since this course is required for high school graduation in the state of Idaho, an assessment piece is required. For 7th or 8th graders taking this course, a comprehensive semester examination will be given during exam week each semester. Semester examinations will be given by a supervising instructor at a previously agreed upon location, most often a resource center. 70% or better is considered a passing grade.

Course Evaluation:

A. End of course Assessment: 40% of semester grade
See above

B. Home Participation: 60% of grade

Home participation is to be determined by the contact teacher and home educator. The participation may include, but is not limited to, textbook activities, quizzes, unit tests, projects, oral reports, or research papers. Grades for home participation will be submitted to the contact teacher who will then forward a copy to the supervising instructor for semester grade tabulation.

C. Grading Scale:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
0-59%	F

Standards Based Portfolio

A Portfolio containing graded examples of student work from the selected curriculum will be required as per school policy, and should be shared with the assigned Contact Teacher once per semester.

Pacing Guide

The topics and standards for this course have been divided between the two semesters.

Semester 1(Fall)	Semester 2 (Spring)
Integer Review	Exponents and roots
1 step equations	Polynomials
Multi-step equations	Factoring
Graphing linear equations	Introductory quadratics
Solving inequalities	Data and probability
Graphing linear inequalities	
Solving systems of equations	

In order to fulfill this pacing requirement, the recommended texts have been broken down by chapter. Covering the chapters in the order listed will insure that all topics on the final exam will be covered during the appropriate semester.

Note: Chapters marked with an asterisk (*) are likely all review, and should be completed very quickly

Glencoe – Algebra: Concepts and Applications

Semester 1(Fall)	Semester 2 (Spring)
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Chapter 1*	Chapter 5
Chapter 2*	Chapter 8
Chapter 3	Chapter 9
Chapter 4	Chapter 10
Chapter 6	Chapter 11
Chapter 7	
Chapter 12	
Chapter 13	

Data and Probability is integrated into the chapters, and can either be completed within the chapters, or “saved” and done as a custom unit during Semester 2.

Holt – Algebra 1

Semester 1(Fall)	Semester 2 (Spring)
Chapter 1*	Chapter 4
Chapter 2*	Chapter 8
Chapter 3	Chapter 9
Chapter 5	Chapter 10
Chapter 6	Chapter 13
Chapter 7	

McDougal Littell – Algebra 1

Semester 1(Fall)	Semester 2 (Spring)
Chapter 1*	Chapter 8
Chapter 2*	Chapter 9
Chapter 3	Chapter 10
Chapter 4	Chapter 12
Chapter 5	
Chapter 6	
Chapter 7	

Data and Probability is integrated into the chapters, and can either be completed within the chapters, or “saved” and done as a custom unit during Semester 2.

Teaching Textbooks – Algebra 1

Semester 1(Fall)	Semester 2 (Spring)
Lessons 1-63	Lessons 64 - 129
Graphing Supplement	Data and Probability Supplement

I-DEA Student Honor Code:

With any form of valid proof of dishonesty with regard to student work or testing, the instructor may elect from a range of actions. Academic dishonesty could lead to a zero grade for the assignment or even failure for the entire course following consultation between the instructor, Secondary Supervisor, and Director.

All students must adhere to the **Honor Code:**

“On my honor, I will maintain the highest possible standards of honesty, integrity and personal responsibility. This means I will not lie, cheat or steal, and as a member of this academic community, I am committed to creating an environment of respect and mutual trust.”

Course Standards:

Standard 1: Number and Operation

Goals:	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6
Goal 1.1: Understand and use numbers.	9.M.1.1.1 Apply properties of rational numbers. (347.01.b)	9.M.1.1.2 Use <u>positive and negative numbers, absolute value, fractions, decimals, percentages, and scientific notation, including application in real world situations.</u> (347.01.a)	9.M.1.1.3 Apply properties of exponents. (347.01.c)	9.M.1.1.4 Identify exact and approximate roots without simplification.	9.M.1.1.5 Solve problems using <u>number theory concepts (factors, multiples, primes).</u> (347.01.d)	9.M.1.1.6 Use appropriate vocabulary.
Goal 1.2: Perform computations accurately.	9.M.1.2.1 Use the order of operations and perform operations with rational numbers. (347.02.a)					
Goal 1.3: Estimate and judge reasonableness of results.	9.M.1.3.1 Apply number sense to everyday situations and judge reasonableness of results. (347.03.a)	9.M.1.3.2 Identify that error accumulates in a computation when there is rounding. (349.05.b)				

Standard 2: Concepts and Principles of Measurement

Goals:	Objective 1	Objective 2	Objective 3
Goal 2.2: Apply the concepts of rates, ratios, and proportions.	9.M.2.2.1 Use rates, ratios, proportions, and map scales in problem-solving situations. (349.03.a)	9.M.2.2.2 Apply concepts of rates and direct and indirect measurements.	9.M.2.2.3 <u>Construct equivalent units, comparable units, and conversions.</u> (349.02.a)
Goal 2.4: Apply appropriate techniques and tools to determine measurements.	9.M.2.4.1 Determine and use appropriate units. (349.01.a)	9.M.2.4.2 Approximate error in measurement situations.	

Standard 3: Concepts and Language of Algebra and Functions

Goals:	Objective 1	Objective 2	Objective 3
Goal 3.1: Use algebraic symbolism as a tool to represent mathematical relationships.	9.M.3.1.1 Represent mathematical relationships using variables, expressions, linear equations and inequalities. (350.01.a)		
Goal 3.2: Evaluate algebraic expressions.	9.M.3.2.1 Use appropriate procedures for manipulating and simplifying algebraic expressions involving variables, integers, and rational numbers. (350.02.a)		
Goal 3.3: Solve algebraic equations and inequalities.	9.M.3.3.1 Use appropriate procedures to solve multi-step, first-degree equations and inequalities; such as $3(2x - 5) = 5x + 7$ or $3(2x - 5) > 5x + 7$. (350.03.a)	9.M.3.3.2 Differentiate between linear and non-linear equations and graphs.	
Goal 3.4: Solve simple linear systems of equations.	9.M.3.4.1 Use appropriate procedures to solve linear systems of equations involving two variables; such as $x + y = 7$ and $2x + 3y = 21$. (350.04.a)		
Goal 3.5: Understand the concept of functions.	9.M.3.5.1 Given graphs, charts, ordered pairs, mappings, or equations, determine whether a relation is a function.	9.M.3.5.2 Evaluate functions written in functional notation.	9.M.3.5.3 Given a function, identify domain and range.
Goal 3.6: Apply functions to a variety of problems.	9.M.3.6.1 Model and solve real-world phenomena using multi-step, first degree, single variable equations and inequalities, linear equations, and two-variable linear systems of equations. (353.01.a)	9.M.3.6.2 Use graphs and sequences to represent and solve problems. (347.02.b)	

Standard 4: Concepts and Principles of Geometry

Goals:	Objective 1	Objective 2	Objective 3
Goal 4.3: Apply graphing in two dimensions.	9.M.4.3.1 Identify attributes of the Cartesian Coordinate System, such as quadrants, origin, and axes. (351.03.a)	9.M.4.3.2 Graph scatter plots and identify informal trend lines (e.g., eyeball fit lines).	9.M.4.3.3 Identify positive and negative correlations.
Goal 4.4: Represent and graph linear relationships.	9.M.4.4.1 Create graphs and equations for linear relationships.	9.M.4.4.2 Represent linear relationships using tables, graphs, and mathematical symbols.	9.M.4.4.3 Interpret attributes of linear relationships such as slope, rate of change, and intercepts.

Standard 5: Data Analysis, Probability, and Statistics

Goals:	Objective 1	Objective 2	Objective 3
Goal 5.1: Represent data with a variety of formats.	9.M.5.1.1 Analyze and interpret tables, charts, and graphs, including scatter plots, broken line graphs, and box-and-whisker plots. (352.01.a)		
Goal 5.2: Collect, organize, and display data.	9.M.5.2.1 Collect, organize, and display data in tables, charts, and graphs. (352.02.a)		
Goal 5.3: Apply simple statistical measurements.	9.M.5.3.1 Interpret and use basic statistical concepts, including mean, median, mode, range, and distribution of data, including outliers. (352.03.a)	9.M.5.3.2 Make predictions and draw conclusions based on statistical measures. (352.05.a)	
Goal 5.4: Understand basic concepts of probability.	9.M.5.4.1 Find probabilities based on dependent, independent, and compound events.	9.M.5.4.2 Contrast experimental and theoretical probability. (352.04.a)	
Goal 5.5: Make predictions or decisions based on data.	9.M.5.5.1 Make predictions based on randomness, chance, equally likely events, and probability. (352.04.c)	9.M.5.5.2 Use appropriate tools/technology to conduct simulations and employ graphical models to make predictions or decisions based on data. (352.05.a)	9.M.5.5.3 Design, conduct, and interpret results of statistical experiments. (352.05.b)