

a-g Algebra 1

Course Description:

This is a first year algebra course in which students will learn to reason symbolically. The key content involves writing, solving, and graphing linear and quadratic equations, including systems of two linear equations in two unknowns. Quadratic equations are solved by factoring, completing the square, graphically, or by application of the quadratic formula. The course also includes study of monomial and polynomial expressions, inequalities, exponents, functions, rational expressions, ratio, and proportion. Algebraic skills are applied in a wide variety of problem-solving situations.

Prerequisite(s): Pre-Algebra

Length of Course: One year required for graduation

Year in School Taken: 9, 10, 11, or 12

Course Outline/Details:

Coursework will include a thorough understanding and application of the following topics:

Operations:	CA State Standard
Four basic arithmetic operations	1
Absolute value	3
Reciprocals	2
Roots	2
Exponents	2
Raising to a fractional power	2
Linear Equations and Inequalities:	
Simplify and solve	4
Graph and compute x and y intercepts	6
Point-slope formula	7
Relationship of slopes of parallel and perpendicular lines	8
Two linear equations in two variables	9
Polynomials:	
Factoring second and simple third degree polynomials	10,11
Simplify fractions with polynomials in numerator and denominator	12
Quadratic Equations:	
Solve by factoring or completing the square	14
Quadratic formula	14

Relations, Functions:

Domain, range	6,17
Graphing	6,18

Word problems:

Linear equations and inequalities in one variable	5
Two linear equations in two variables	9
Rate problems, work problems, percent mixture problems	15
Quadratic equations	19-23

Methods for Evaluating Student Performance:

Evaluation of student performance is based on individual abilities, interests, and talents. Methods by which student progress is assessed will be through a variety and/or combination of methods. The methods available include but are not limited to the following:

- Monthly review of work by education specialist (credentialed teacher),
- Portfolios
- Parent facilitator and education specialist observation
- Student demonstrations,
- Student grades,
- Student work samples
- Written examination
- Research projects

Texts:

Algebra 1: Concepts and Skills by Larson
 Publisher: McDougal-Littell, 2004
 ISBN: 0-618-37420-5
 Website: www.mcdougallittell.com
 CA State Standards map found on website, this is a State Adopted Text.

Algebra 1 by Larson
 Publisher: McDougal-Littell, 2007
 ISBN: 0-618-59402-7
 Website: www.mcdougallittell.com
 CA State Standards map found on website, this is a State Adopted Text.

Algebra 1 – Kennedy, Charles, Bellman, Bragg, Hall, Handlin
 Publisher: Prentice Hall, 2007
 ISBN: 0131339966
 Website of Publisher: www.phschool.com
 CA Standards map found on website, this is a State Adopted Text.

Algebra I – *Algebra: Structure and Method, Book 1*
 Authors: Richard G. Brown, Mary P. Dolciani, Robert H. Sorgenfry, & William L. Cole
 Publisher: Houghton Mifflin Company

Dates Published: 1990, 1992, 1994, 1997, 2000

ISBN: 0-395-97722-3

Website of Publisher: www.mcdougallittell.com

Additional Information:

- California State Adopted (2001) for 8th grade Algebra – see here:
<http://www.cde.ca.gov/ci/cr/cf/math2001pub.asp>
- Per a review of this book by CSU Northridge, this course meets all the CA Dept of Ed. Standards, see here:
<http://www.csun.edu/%7Evcmath00m/dalg.html>
- Given a grade of “A” by Mathematically Correct website:
<http://www.mathematicallycorrect.com/calbooks.htm>

Preview copy available at Modesto/Ceres Learning Center (must be viewed in center, no check out)

Algebra 1, 2nd ed., Larson and Hostettler, 2001

Houghton Mifflin

ISBN: 0618107746

Text used with Chalkdust Curriculum, each lesson is presented by an instructor on DVD

Website: www.chalkdust.com

Standards aligned, but 24.0 – 24.3 are not explicitly taught: these concepts could be integrated throughout the program.

Contact Mary Halter at mhalter@connectingwaters.org for California State Standard Correlations

Introductory Algebra, 7th edition

By Margaret L. Lial, John Hornsby, Terry McGinnis

Addison and Wesley, 2001

ISBN: 0321064585

Contact Mary Halter at mhalter@connectingwaters.org for California State Standard Correlations

(8th edition, 2005, ISBN: 0321279212)

Algebra 1 in Two Years, Volume 1 & 2

by Collins, Cuevas, Foster, Gordon, Moore-Harris, Rath, Swart, and Winters

Glencoe McGraw-Hill, 1998

ISBN: 0028253337

ISBN: 0028253345

Preview copy available at Modesto/Ceres Learning Center (must be viewed in center, no check out)

Algebra 1, 2006

Glencoe

ISBN: 0078651131

www.glencoe.com

CA Standards map found on website.

Glencoe: Concepts and Applications, Volumes 1 &2, 2004

ISBN: Volume 1 0078608554 : Volume 2 0078607752

www.glencoe.com , CA Standards map found on website.

Student must complete both years in 2 year algebra course in order to fulfill algebra graduation requirement.

Glencoe: Concepts and Applications, 2006

ISBN: 0078681707

www.glencoe.com , CA Standards map found on website.

Algebra 1: Integration, Applications, Connections

by Collins, Cuevas, Foster, Holliday, Mooer-Harris, Rath, Swart, and Winters

Glencoe McGraw-Hill, 1998

ISBN: 0028253264 (2001 edition ISBN: 0078228948)

Preview copy available at Modesto/Ceres Learning Center (must be viewed in center, no check out)

Merrill Algebra Essentials, by Foster, Winters, Rath, and Burrill

Glencoe McGraw-Hill, 1988

ISBN: 0675054915

Preview copy available at Modesto/Ceres Learning Center (must be viewed in center, no check out)

Discovering Algebra: An Investigative Approach

Key Curriculum Press

ISBN: 1-55953-340-4

CA State Standards Correlations found on website: www.keypress.com

Algebra 1: An Incremental Development, by Saxon

Saxon, 2nd edition 1991 (can also use most recent edition-3rd edition preferred)

ISBN: 0939798425

Students must complete all 120 lessons to earn full credit.

****NOTE****The typical sequence course sequence for Saxon Math is:

Saxon Alg 1 8th grade (or 9th)

Saxon Alg 2 = a-g Alg 2 9th (or 10th)

Saxon Adv Math, year 1 of 2 = a-g Geom 10th (or 11th)

Saxon Adv Math/Calculus year 2 of 2 = a-g Trig/PreCal 11th (or 12th)

Saxon Calculus = a-g Calculus 12th

Preview copy available at Ceres Learning Center in the reference section – ask site clerk for assistance.

Algebra

Scott Foresman, Addison Wesley Math, 1993

ISBN: 0673372774