

H ACC CC Algebra 1 Syllabus

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Mastery Learning and Grading

This is an Equitable Grading & Learning classroom. I will determine your overall grade based on your growth and mastery of course learning targets. You will get multiple opportunities to show your growth towards mastery of the learning targets. I will use the body of evidence to determine your proficiency on learning targets.

Avid/ WICOR	IB ATL (Approaches to Learning) Skills	IB Learner Attributes	6 C's	VILs (Verizon Innovative Learning School)
Writing Inquiry Communication Organization Reading	Communication Research Social Skills Self-Management Thinking Skills	Inquirer Open-Minded Knowledgeable Caring Thinker Risk-Taker Communicator Balanced Principled Reflective	Communication Collaboration Critical Thinking Creativity Character Citizenship	Goals are to Increase students: Achievement Engagement Tech and Stem Proficiency Stem Interest Problem Solving Skills Collaboration Skills Communication Skills Confidence

Course Overview

This course builds the foundation for all high school math learning. It will guide students through, among other topics, expressions, systems of equations, functions, real numbers, inequalities, exponents, polynomials, radical and rational expressions. Students begin the course with interpreting one-variable statistics, gathering and displaying data, measuring data distribution, and interpreting statistical results. Next, they deepen their understanding of functions and deepen their ability to represent, interpret, and communicate about them—using function notation, domain and range, average rate of change, and features of graphs. The course ends with a close look at quadratic equations, where students extend their ability to use equations to model relationships and solve problems.

Standards: 8.G.A.1, 8.G.A.2, 8.G.A.3, 8.G.A.5, 8.G.A.4, 8.EE.B, 8.EE.B.4, 8.EE.B.5, 8.EE.B.6, 8.F.B.4, 8.EE.C, 8.EE.C.8, 8.EE.C.7, 8.EE.C.7.b, 8.EE.C.8, 8.EE.C.8.a, 8.EE.C.8.b, 8.EE.C.8.c, 8.NS.1, 8.NS.2, 8.G.6, 8.G.7, 8.G.8S-ID.1, S-ID.2, S-ID-3, S-ID.4, S-ID.5, HSA-CED.A.2, HSA-CED.A.3, HSN-Q.A.2, HSA-REI.A, HSA-REI.B.3, HSA-REI.D.10, 8.F.A.1, 8.F.A.2, 8.F.B.4, 8.F.B.5, HSF.IF.A.1, HSF.IF.A.2, HSF.BF.A.1

Learning Targets: One-variable Statistics

Students discuss the difference between statistical and non-statistical questions and classify that data as numerical or categorical. They represent and interpret data using data displays, and describe distributions using the appropriate terminology. They create data displays and calculate summary statistics using technology, then interpret the values in context. They learn that standard deviation is a measure of variability, and they interpret standard deviation in context. They recognize outliers, investigate their source, make decisions about excluding them from the data set, and understand how the presence of outliers impacts measures of center and measures of variability. They compare measures of center and the standard deviation and the interquartile range for different data sets.

Learning Targets: Dilations, Similarity, and Introducing Slope

Students learn to understand and use the term “dilation,” and to recognize that a dilation is determined by a point called the “center” and a number called the “scale factor.” They learn that under a dilation, the image of a circle is a circle and the image of a line is a line parallel to the original. They draw images of figures under dilations on and off the coordinate plane. They use the terms “corresponding sides” and “corresponding angles” to describe correspondences between a figure and its dilated image, and recognize that angle measures are preserved, but lengths are multiplied by the scale factor. They learn to understand similarity of plane figures in terms of rigid transformations and dilations. They learn to recognize when one plane figure is similar or not similar to another. They use the definition of “similar” and properties of similar figures to justify claims of similarity or non-similarity. Students learn the terms “slope” and “slope triangle,” and use the similarity of slope triangles on the same line to understand that any two distinct points on a line determine the same slope.

Learning Targets: Linear Relationships

Students learn to understand and use the terms “rate of change,” “linear relationship,” and “vertical intercept.” They deepen their understanding of slope, and they learn to recognize connections among rate of change, slope, and constant of proportionality, and between linear and proportional relationships. They learn to understand that lines with the same slope are translations of each other. They represent linear relationships with tables, equations, and graphs that include lines with negative slopes or vertical intercepts, and horizontal and vertical lines. They learn to use the term “solution of an equation” when working with one or two linear equations in two variables, and learn to understand the graph of a linear equation as the set of its solutions. Students use these terms and representations in reasoning about situations involving one or two constant rates.

Learning Targets: Exponents and Scientific Notation

Students extend the definition of exponents to include all integers, and in the process codify the properties of exponents. They apply these concepts to the base-ten system, and learn about orders of magnitude and scientific notation in order to represent and compute with very large and very small quantities.

Learning Targets: Pythagorean Theorem and Irrational Numbers

Students work with geometric and symbolic representations of square and cube roots. They understand and use notation for square and cube roots. They understand the terms “rational number” and “irrational number,” using long division to express fractions as decimals. They use their understanding of fractions to plot rational numbers on the number line and their understanding of approximation of irrationals by rationals to approximate the number-line location of a given irrational. They use the Pythagorean Theorem in two and three dimensions, e.g., to determine lengths of diagonals of rectangles and right rectangular prisms, and to estimate distances between points in the coordinate plane.

Learning Targets: Linear Equations and Linear Systems

Students write and solve linear equations in one variable. These include equations in which the variable occurs on both sides of the equal sign, and equations with no solutions, exactly one solution, and infinitely many solutions. They learn that any one such equation is false, true for one value of the variable, or true for all values of the variable. They interpret solutions in the contexts from which the equations arose. Students write and solve systems of linear equations in two variables and interpret the solutions in the contexts from which the equations arose. They learn what is meant by a solution for a system of equations, namely that a solution of the system is a solution for each equation in the system. Students use the understanding that each pair of values that make an equation true are coordinates of a point on the graph of the equation and conversely that the coordinates of each point on the graph of an equation make the equation true. Students learn to understand and use the terms “system of equations,” “solution for the system of equations,” “zero solutions,” “no solution,” “one solution,” and “infinitely many solutions.”

Learning Targets: Functions

Students represent, interpret, and use functions to make sense of quantities in situations and to solve problems. They are introduced to new tools for communicating about functions: function notation, domain and range, average rates of change, and mathematical terms for describing key features of graphs. They also develop their ability to gather information about a function from its graph, by connecting features of the graph to features of the situation and other representations, and to sketch a graph that tells the story about the function. Along the way, students begin to distinguish categories of functions: linear functions, piecewise-defined functions (the absolute value function, in particular), and inverse functions. Throughout the unit, students use, interpret, and connect the different representation of functions, both in and out of context.

Expectations: We are

Prompt

Prepared

Productive

Polite

Positive

Assignments

- Homework will be assigned at least twice per week. Homework completion won't affect a student's overall letter grade, but it will contribute to work habit grade.
- Mid-unit assessment (quiz) will be assigned approximately every two weeks.
- An end-of-unit assessment (test) will be assigned at the end of each unit.
- Students will have multiple opportunities to retake assessments.
- Late work is accepted. This can be submitted during class time or through Schoology.

Mastery Level (Final Grade)	Rubric (Assessment)	IB Achievement Levels	Description
A 80% to 100%	4	7-8	Mastery: Student demonstrates thorough understanding of the learning target and is able to apply it in other contexts.
B 60% to 79%	3	5-6	Proficient: Student demonstrates understanding of the learning target with a few minor errors.
C 40% to 59%	2	3-4	Approaching/Developing: Student demonstrates only some understanding of the learning target due to learning gaps.
D 20% to 39%	1	1-2	Needs Improvement: Student demonstrates very minimal understanding of the learning target and needs additional instructional support.
Fail 0% to 19%	0	0	No Evidence: Student demonstrates no understanding of the learning target and does not submit work to be accurately assessed.

Grade	Work Habits	Cooperation
Excellent	0 to 3 missing/incomplete assignments	Actively engaged in class discussions and learning. Demonstrates respect and responsibility towards individuals, the class, and guidelines.
Satisfactory	4 to 6 missing/incomplete assignments	Usually engaged in class discussions and learning. Typically demonstrates respect and responsibility.
Unsatisfactory	7 or more missing/incomplete assignments	Infrequently engaged in class discussions and learning. Difficulty demonstrating respect and responsibility

Intervention Support

- Peer mentoring
- Multiple opportunities to retake assessments
- Tutoring during lunch time and/or before/after school
- Digital platform such as IXL and Khan Academy

ACADEMIC INTEGRITY

Students are expected to behave as principled scholars that demonstrate honesty, integrity, and ethical decision-making and thereby always produce and submit authentic work. Your ideas are your intellectual property; the ideas of others are theirs. The work of any individual, including you, is protected by copyright laws and ethical standards.

Required Materials

Line paper, graph paper, notebook, 3-ring binder, pencil/led pencil

Frequently Asked Questions

Where are my assignments? All assignments are posted on Schoology before the end of each school day.

Can I do older work also? Yes, students may also make up older assignments. Please inform me through email after making up assignments.

What should I do when I am absent? Students should check Schoology for assignments at some point each day, reply to any updates or check-ins' that I post!, and review any new class notes in our class folder.

How do I (or my parents) ask you questions? Emailing me using the "envelope" at the top of the Schoology page is probably the easiest way to ask a question. My email address is lxie@lausd.net. If necessary, students/parents can request to meet with me through Zoom.

Parent Signature: _____