



MULTICULTURAL HIGH SCHOOL

999 Jamaica Avenue
Brooklyn, NY 11208
Telephone: 718-827-2796 Fax: 718-827-3970



RESPECT • TENACITY • COLLABORATION • INNOVATION • PERSEVERANCE

Syllabus: Algebra 1 - Term 2

Textbook: Illustrative Mathematics Algebra 1

Personal Philosophy

*In this class, students will engage both the **analytic** and **creative** sides of their brains. By year's end, students will confidently apply mathematical knowledge to solve problems and think critically and analytically, both in math and in real-life situations. My ultimate goal is to prepare students for the rigor of advanced math and foster independence, self-reliance, and a lifelong love of learning.*

Course Description

This course uses **Illustrative Mathematics Algebra 1**, a problem-based curriculum designed to build deep mathematical understanding through:

- Real-world applications
- Problem-solving
- Constructing logical arguments
- Connecting concepts and procedures

Instruction will focus on active student engagement, inquiry, and collaborative learning to build mastery of core Algebra 1 concepts.

Course Outcomes

By the end of the year, students will:

- Master Algebra 1 content and pass the Regents Exam
- Build a deep understanding and appreciation of mathematics
- Think logically, analytically, and critically
- Excel in future high-level math courses
- Grow into independent and confident math scholars

Term 2 Goals/Skills

By the end of this course, students will:

Linear Inequalities & Systems

- Represent real-world constraints by writing, solving, and graphing linear inequalities in

one and two variables.

- Analyze and interpret solution sets using number lines, coordinate-plane graphs, and test points to justify whether values satisfy given conditions.
- Build conceptual understanding of systems of inequalities by identifying feasible regions and explaining their meaning in context.
- Use inequalities and systems as tools for decision-making in real-world scenarios, interpreting restrictions and optimizing within constraints.

Functions

- Develop a foundational understanding of functions as relationships between quantities, identifying, evaluating, and interpreting functions in various representations.
- Translate between verbal descriptions, tables, graphs, and equations to understand how functions model real-world phenomena.
- Analyze key features of linear and non-linear functions, such as rate of change, intercepts, and patterns, to compare and make predictions.
- Communicate reasoning about functional relationships using precise mathematical vocabulary and clear representations.

Intro to Exponential Functions

- Recognize and model exponential growth and decay situations, distinguishing them from linear patterns through multiple representations.
- Interpret the meaning of growth factors, initial values, and percent change in real-world exponential relationships.
- Use exponential functions to make predictions and evaluate the reasonableness of solutions in meaningful contexts.
- Compare linear and exponential models to determine which best represents a given situation, justifying conclusions using evidence from graphs and data.

Students Will Be Able To (SWBAT):

Unit 4: Linear Inequalities and Systems

- SWBAT use a related question to solve inequalities in one variable.
- SWBAT write and solve inequalities in one variable to represent the constraints in situations and solve problems.
- SWBAT understand that a constraint on two variables can be represented by an inequality, a graph, and a verbal description.
- SWBAT write inequalities in two variables to represent the constraints in a situation, and use technology to graph the solution set to answer questions about the situation.

- SWBAT given a system of inequalities and their graphs, explain how to tell if a pair of values is a solution to the system of inequalities.
- SWBAT understand that the solution of a system of inequalities in two variables is composed of any pair of values that make both inequalities true, and that it is represented graphically by the region where the graphs overlap.

Unit 5: Functions

- SWBAT sketch a graph of a function given statements in function notation.
- SWBAT understand that a relationship between two quantities is a function if there is only one possible output for each input.
- SWBAT write equations that represent rules using function notation.
- SWBAT given a graph of a function, estimate or calculate the average rate of change over a specific interval.
- SWBAT interpret key features of a graphs: the intercepts, maximum, minimums, and intervals when the function is increasing or decreasing, in terms of a situation.
- SWBAT interpret graphs of a piecewise function or its rules given in function notation, and explain the rules in terms of a situation.
- SWBAT understand that the domain of a function is the best set of all possible inputs and the range is the set of all possible outputs.

Unit 6: Intro to Exponential Functions

- SWBAT compare linear and exponential relationships by performing calculations.
- SWBAT describe patterns in tables that represent linear and exponential relationships
- SWBAT interpret a negative exponent in equations that represent exponential growth or decay.
- SWBAT write and graph an equation that represents exponential decay to solve problems
- SWBAT write an equation of the form $y = ab^x$ to represent a quantity that changes by a growth factor b.
- SWBAT interpret a negative exponent in equations that represent exponential growth or decay.
- SWBAT use roots and fractional exponents to represent the same value in different ways.
- SWBAT describe the effect of changing a and b on a graph that represents $y = ab^x$
- SWBAT use function notation to write equations that represent exponential relationships.

PACING INFORMATION	
UNIT	Teacher Flexibility Window

Unit 4: Linear Inequalities and Systems	December 9-11 periods
Unit 5: Functions	December - January 16 - 19 periods
Unit 6: Intro to Exponential Functions	January - March 19 - 28 periods

COURSE EXPECTATIONS, ASSIGNMENTS, GRADING PLAN & DUE DATES

Our class is built on community and active participation. (*Juntos podemos, together we can!*) Everyone is expected to engage everyday in class by coming prepared, on time, and ready to learn. Participation means making connections, asking thoughtful questions, working in groups, and responding to classmates' ideas. To ensure all voices are heard, I may invite you, students, into the discussion. Every day, students will participate in student-led discussions. Collaborate thoughtfully and respectfully with your peers.

Attendance:

Regular attendance is essential for success in this course. Each lesson builds on the previous one, so missing class can make it harder to stay on track. You are expected to:

- Arrive on time and be ready to learn when class begins.
- Be present for the entire class period unless excused.
- Notify me in advance (when possible) if you know you will be absent.
- Take responsibility for catching up on any missed notes, assignments, or announcements by checking with classmates or me.

Consistent attendance not only supports your own learning but also helps our class community grow stronger together.

Submitting Assignments

Lesson practices must be completed on time and are due the next day after receiving, unless otherwise noted. Assignments must be submitted via the via **EDIA.app**. Your grade will be based on timely completion of assignments. Assignments given a grade of "Incomplete" may be rewritten for partial credit. **Major assignments: Quizzes, exams, and projects.**

Makeup any late/missing to receive credit.

Classwork	15%
• Cornell Notes (Binders) • Participation	10%
• Formative Assessments	5%
30%	

Homework		10%
Assessments • Quizzes/Exit Slips • Projects • Tests (including Regents Examinations, MOCK Regents, and Unit Exams) • Final	_____ % _____ % _____ % _____ %	60%

Total 100%

Note: Our school-wide policy has flexibility built in on how the 65% of the overall grade can be determined through class assessments. (Teacher autonomy on dividing percentages provided clearly articulated with the department chair and/or administrator).

Materials Required

- **Illustrative Mathematics** (Digital edition)
- **Edia**
- **Notebook / Binder** (*Required daily for notes, group work, and assignments*)
- **Calculator** (Provided in class and digital version)

If you have any questions, please don't hesitate to reach out. Let's make this a great year together!