



Algebra I Syllabus
CHS Mathematics Department

Contact Information: Parents may contact me by phone, email, or visiting the school.

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Teacher Contact Websites:

- Google Classroom

CCSD Vision Statement: The Chillicothe City School District will provide tomorrow's leaders with a high quality education by developing high expectations and positive personal relationships among students, staff, and community members.

CCSD Mission Statement: The Chillicothe City School District empowers students to learn, to lead, and to serve.

Course Description and Prerequisite(s) from Course Handbook:

Algebra I – 260

Algebra I taken at 8th grade level - 254

State Course #: 110301

Prerequisite: None

Required Option Grade: 9

Graded Conventionally Credit: 1

Course Description:

A study of algebraic concepts and processes to represent and solve problems that involve variable quantities. Includes using and relating graphical and symbolic representations and techniques. The fundamental purpose of this course is to formalize and extend the mathematics that students learned in the middle grades. Because it is built on the middle grades standards, this is a more ambitious version of Algebra I than has

generally been offered. The critical areas, called units, deepen and extend understanding of linear, quadratic and exponential relationships by contrasting them with each other and by learning how to apply these functions to real world phenomena. The Mathematical Practice Standards apply throughout each course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. Successful completion of this course is needed to take Chemistry. **Students will take the Ohio State Test for Algebra I.**

Learning Targets: Defined below for clarity are the Unit Titles, Big Ideas of every Unit taught during this course, and the Essential Questions to be answered to better understand the Big Ideas. A student's ability to grasp and answer the Essential Questions will define whether or not he or she adequately learns and can apply the skills found in Big Ideas. This will ultimately define whether or not a student scores well on assessments administered for this course.

- **1st Quarter**
 - **Unit I Title: Equations and Inequalities**
 - **Big Idea #1:** I can solve equations and use them to model real world situations.
 - *Essential Question #1: How do I write and evaluate multi-step equations?*
 - *Essential Question #2: How do I write algebraic proofs of multistep equations?*
 - *Essential Question #3: How do I rewrite and evaluate formulas and equations?*
 - *Essential Question #4: How do I model real world situations with equations?*
 - **Big Idea #2:** I can solve inequalities and use them to model real world situations.
 - *Essential Question #1: How do I write and evaluate inequalities in one variable?*
 - *Essential Question #2: How do I write and evaluate compound inequalities?*
 - *Essential Question #3: How do I model real world situations with inequalities?*
 - **Unit II Title: Relations and Functions**
 - **Big Idea #1:** I can distinguish a relation from a function.
 - *Essential Question #1: How do I visually represent a relation?*

- *Essential Question #2: How do I determine if a relation is a function?*
 - *Essential Question #3: How do I describe functions using key features?*
 - *Essential Question #4: How do I evaluate functions in function notation?*
 - **Big Idea #2:** I can graph and write linear functions in various forms.
 - *Essential Question #1: How do I graph linear functions?*
 - *Essential Question #2: How do I write linear functions in point-slope, slope-intercept form, and standard form?*
 - *Essential Question #3: How do I model real world situations with linear functions?*
- **2nd Quarter**
 - **Unit III Title: Descriptive Statistics**
 - **Big Idea #1:** I can find and interpret five-number summaries and box plots.
 - *Essential Question #1: How do I compute mean, median, mode, and quartiles of a data set?*
 - *Essential Question #2: How do I compute the interquartile range of a data set?*
 - *Essential Question #3: How do I determine if a data point is an outlier using the IQR?*
 - *Essential Question #4: How do I create a box plot using the five-number summary?*
 - **Big Idea #2:** I can describe and display distributions
 - *Essential Question #1: How do I compute the standard deviation of a data set with a graphing calculator?*
 - *Essential Question #2: How do I construct a histogram and stem and leaf plot for a data set?*
 - *Essential Question #3: How do I interpret and summarize categorical data for two categories in two-way frequency tables?*
 - **Big Idea #3:** I can use a line of best fit to make accurate predictions about data.
 - *Essential Question #1: How do I describe correlation and estimate correlation coefficients?*
 - *Essential Question #2: How do I approximate a best-fit line and use it to make predictions?*
 - **Unit IV Title: Systems**

- **Big Idea #1:** I can solve a linear system of equations and use them to model real world situations.
 - *Essential Question #1: How do I solve a system of two linear equations algebraically?*
 - *Essential Question #2: How do I solve a system of two linear equations graphically?*
 - *Essential Question #3: How do I use systems of two linear equations to model real world situations?*
 - **Big Idea #2:** I can solve a system of inequalities and use them to model real world situations.
 - *Essential Question #1: How do I graph a linear inequality?*
 - *Essential Question #2: How do I solve a system of inequalities by graphing?*
 - *Essential Question #3: How do I use systems of two linear inequalities to model real world situations?*
- **MID-TERM EXAM**
- **3rd Quarter**
 - **Unit V Title: Polynomials and Factoring**
 - **Big Idea #1:** I can add, subtract, and multiply polynomials.
 - *Essential Question #1: How do I define and classify polynomials and write them in standard form?*
 - *Essential Question #2: How do I add and subtract polynomial expressions?*
 - *Essential Question #3: How do I multiply polynomial expressions?*
 - **Big Idea #2:** I can factor a quadratic expression.
 - *Essential Question #1: How do I factor by finding a greatest common factor?*
 - *Essential Question #2: How do I factor trinomials?*
 - *Essential Question #3: How do I factor by using special factoring patterns?*
 - **Unit VI Title: Quadratics**
 - **Big Idea #1:** I can graph quadratic functions and understand their properties.
 - *Essential Question #1: How do I graph the parent function and describe its key features?*
 - *Essential Question #2: How do I apply transformations to the parent function?*
 - **Big Idea #2:** I can solve quadratic equations and apply them to the real world.

- *Essential Question #1: How do I solve quadratic equations algebraically?*
 - *Essential Question #2: How do I model real world situations with quadratic equations?*
 - **4th Quarter**
 - **Unit VII Title: Exponentials**
 - **Big Idea #1:** I can graph and analyze exponential functions.
 - *Essential Question #1: How do I simplify expressions using the properties of exponents?*
 - *Essential Question #2: How do I graph exponential functions?*
 - *Essential Question #3: How do I write and evaluate exponential functions to model growth and decay situations?*
 - **Big Idea #2:** I can distinguish between types of functions and solve their systems.
 - *Essential Question #1: How do I distinguish between situations that can be modeled with linear, quadratic and exponential functions?*
 - *Essential Question #2: How do I solve a system of various equations?*
 - **Unit VIII Title: Sequences**
 - **Big Idea #1:** I can analyze arithmetic and geometric sequences.
 - *Essential Question #1: How do I identify the type of sequence and write its terms?*
 - *Essential Question #2: How do I write the explicit formula for sequences?*
 - *Essential Question #3: How do I model real world situations with sequences?*
 - **Big Idea #2:** I can write the recursive formulas for arithmetic and geometric sequences.
 - *Essential Question #1: How do I write the recursive formula for sequences?*
 - *Essential Question #2: How do I translate between explicit and recursive formulas for sequences?*
 - **END OF COURSE EXAM**

Course Materials:

- Google Chromebook
- Composition Notebook
- Glue Sticks
- Highlighters
- Scissors

- Pencils
- Loose leaf paper

Electronic Resources:

- <https://www.ALEKS.com>
- <https://www.edulastic.com>
- www.desmos.com

Course Expectations:

This course will require dedication and a strong effort. What you put into Algebra I, is exactly what you will get out of it. Algebra I is not only a building block for your subsequent math courses, but also the first math course on your high school transcript, which means it affects your high school GPA. Grades are earned in this classroom and I am willing to help you earn the best grade possible. This classroom is a partnership and will only work if we all work together. I am always available for extra help after school or through email. We will move at a quick pace through our syllabus, so it is vital that you keep up with notes and assignments. I am looking forward to this school year and getting to know all of you!

Grading:

Unit Exams	50%
Assessments (Including: Quizzes, Essays, Labs, and Projects)	30%
Class work/Homework	20%

- Each nine week's grade comprises 20% of a student's final grade.
- The Mid-Term Exam and End of Course Exam each comprise 10% of a student's final grade.

Grading Scale:

The grading scale for Chillicothe High School can be found in the student handbook or online at

<http://www.chillicothe.k12.oh.us/1/Content2/studenthandbook>.

Late Work: Late work will be subject to the Board-adopted policy on assignments that are submitted late (to be reviewed in class).

- Regardless of the absence type (excused or unexcused), students will be expected to make up work and be held accountable for learning all material they missed.
- Any student who is absent from school (excused or unexcused) will have one (1) additional day for every day they missed, to make up his/her work for full credit (100%).

- Any student who exceeds the allotted time to turn in an assignment for full credit may still turn in late work for partial credit.
 - Any student who turns in work up to 1 week late must at least be given the opportunity to earn 75% on that assignment.
 - Any student who turns in work between 1 and 2 weeks late must at least be given the opportunity to earn 60% on that assignment.
- The end of the 9 weeks is the cut off point for teachers to accept late work from students for full or partial credit, unless the teacher decides to give the student an incomplete for the 9 weeks due to extenuating circumstances.

Performance Based Section: Writing
Assignments/Exams/Presentations/Technology

One or more of the End of Unit Exams may be Performance Based. According to the Ohio Department of Education, “Performance Based Assessments (PBA) provides authentic ways for students to demonstrate and apply their understanding of the content and skills within the standards. The performance based assessments will provide formative and summative information to inform instructional decision-making and help students move forward on their trajectory of learning.” Some examples of Performance Based Assessments include but are not limited to portfolios, experiments, group projects, demonstrations, essays, and presentations.

CHS Algebra I Course Syllabus

After you have reviewed the preceding packet of information with your parent(s) or guardian(s), please sign this sheet and return it to me so that I can verify you understand what I expect out of each and every one of my students.

Student Name (please print):

Student Signature:

Parent/Guardian Name (please print):

Parent/Guardian Signature:

Date:
