COURSE TITLE * Algebra Concepts and Connections

COURSE NUMBER - Block 2- 27.0811000-2 Algebra Concepts and Connections
Block 2- 27.0811055-3 Algebra Concepts and Connections

Semester/Year: Fall-2024

Instructors: Tarquiann Bates and Erin Murph Horton

Class Location: R. No. 2127

Class Meets at: Block 2- 10:00 a.m. to 11:30 a.m.

Tutorial Day and Time: Monday through Thursday (Exceptions Mandatory Meetings) 3:20 p.m. to 4:00 p.m.

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COURSE DESCRIPTION:

In Algebra: Concepts & Connections, instructional time should regularly incorporate the 8 Mathematical Practices, the Framework for Statistical Reasoning, and the Mathematical Modeling Framework through four big ideas of content: (1) numerical reasoning, (2) functional & graphical reasoning, (3) patterning and algebraic reasoning, and (4) geometric and spatial reasoning. This course is designed as the first course in a three-course series. Students will apply their algebraic and geometric reasoning skills to make sense of problems involving algebra, geometry, bivariate data, and statistics. This course focuses on algebraic, quantitative, geometric, graphical, and statistical reasoning. In this course, students will continue to enhance their algebraic reasoning skills when analyzing and applying a deep understanding of linear functions, sums and products of rational and irrational numbers, systems of linear inequalities, distance, midpoint, slope, area, perimeter, nonlinear equations and functions, quadratic expressions, equations and functions, exponential expressions, equations, and functions, and statistical reasoning. The identified prerequisite for this course is Grade 8 Mathematics.

Unit 1: Modeling Linear Functions

As in Algebra 1, Students will construct and interpret arithmetic sequences as functions, algebraically and graphically, to model and explain real-life phenomena. They will use formal notation to represent linear functions and the key characteristics of graphs of linear functions, and informally compare linear and non-linear functions using parent graphs.

Unit 2: Analyzing Linear Inequalities

Students will create, analyze, and solve linear inequalities in two variables and systems of linear

inequalities to model real-life phenomena.

Unit 3: Investigating Rational and Irrational Numbers

Students will investigate rational and irrational numbers and rewrite expressions involving square roots and cube roots. They should be able to use the operations of addition, subtraction, and multiplication, with radicals within expressions limited to square roots and cube roots.

Unit 4: Modeling and Analyzing Quadratic Functions

Students will analyze quadratic functions. Students will (1) investigate key features of graphs; (2) solve quadratic equations by taking square roots, factoring (x2 + bx + c AND ax2 + bx + c), completing the square, and using the quadratic formula; (3) compare and contrast graphs in standard, vertex, and intercept forms. Students will only work with real number solutions.

Unit 5: Modeling and Analyzing Exponential Expressions and Equations

Students will interpret exponential expressions, one variable exponential equations in context, and understand parameters of two variable exponential equations.

Unit 6: Analyzing Exponential Functions

Students will construct and analyze the graph of an exponential function to explain a contextual situation for which the graph serves as a model; compare exponential with linear and quadratic functions.

Unit 7: Investigating Data

Students will collect, analyze, and interpret univariate quantitative data to answer statistical investigative questions that compare groups to solve real-life problems. Students will represent bivariate data on a scatter plot and fit a function to the data to answer statistical questions and solve real-life problems.

Unit 8: Algebraic Connections to Geometric Concepts

Students will solve problems involving distance, midpoint, slope, area, and perimeter to model and explain real-life phenomena.

Unit 9: Culminating Capstone Unit

(applying concepts in real-life contexts in a culminating interdisciplinary unit)
The capstone unit applies content learned in previous interdisciplinary PBLs and units throughout the school year. The capstone unit is an interdisciplinary unit that allows students to create a presentation, report, or demonstration that could include their models used to answer an overarching driving question. (e.g., Students can present their solution(s), findings, project, or answer to the driving question to a larger audience during the culminating capstone unit.)

LEARNING OUTCOMES

The learning outcomes are derived directly from the Georgia Department of Education.
https://www.georgiastandards.org/Georgia-Standards/Frameworks/Algebra-I-Curriculum-Map.pdf

TEXTS, READINGS, AND INSTRUCTIONAL RESOURCES

Required Text: Into Math Georgia Algebra I - HMH Ed

Supplemental Texts:

Selected Readings:

Useful Websites: www.khanacademy.com
www.desmos.com
www.tutor.com
www.virtualnerd.com

ACTIVITIES AND ASSESSMENTS, EVALUATION PROCEDURES, AND GRADING

Activities and Assessments: Manipulatives, Discussion on Canvas, Quizziz, Evidence Based Learning Activities, and Projects will be assigned.

SENIOR EXIT PORTFOLIO:
The CCPS Senior Exit Portfolio is a requirement for all 12th grade students taking the 12th grade British Literature and Composition course. Throughout the senior year, students will collect assignments, performance tasks, writings, assessments, and college/career preparation documents to complete their CCPS senior exit Portfolio. The CCPS Senior Portfolio integrates tasks that require knowledge gained from English, Social Studies, Science, Math, and Career Technical Agricultural Education (CTAE) courses. Teachers are required to facilitate adherence to the periodic due dates to ensure that students meet the final requirement of a portfolio that represents their best work and learning experiences. Teachers will use a digital resource to assist students in the management and maintenance of the portfolio throughout the year. The CCPS Senior Exit Portfolio is comprised of the following: biography, personal goals, college/career package, education philosophy, and independent study. At the end of the school year, students are required to deliver a formal presentation of the portfolio using presentation type software.

Evaluation Procedures:

High School and High School Credit Bearing Courses Grade Weights			
Courses with an End-of-Course (EOC) Exam		**Courses without an End-of-Course (EOC) Exam**	
Classwork	35%	Classwork	35%
Tests/Quizzes	30%	Tests/Quizzes	30%
Projects	10%	Projects	10%
Homework	15%	Homework	15%
End-of-Course Exam	10%	Final Exam	10%

Grading Policy:

Letter Grade	Performance Level	Description of Performance Level
A	90-100	Exceeding content expectations
B	80-89	Meeting content expectations
C	71-79	Working towards meeting content expectations
D	70	Inadequate progress towards meeting content expectations
F	69 and below	Did not meet content expectations
NC	No Credit	Enrolled 10 days or less

Class Policies:

1. Be Present and on time to school and class.
2. Be Respectful to yourself, others, and school property.
3. Be Courteous; use appropriate language at all times.
4. Be Focused, always moving with a purpose.
5. Be Rewarded for your positive behavior.

Homework policy: Home work will be given two to three days weekly. Late submission of work is not accepted unless you have a strong reason. If you are absent on the day of homework submission, two days will be given to turn in your work. Failed to submit, you will be marked ZERO for that assignment.

MAKE-UP WORK POLICY:

All students are provided an opportunity to make up missed assignments, regardless of the reason for the absences. It is the student and parent's responsibility to make arrangements and/or complete all work within three school days of the student's return to school. Students will present the make-up work to the teacher for grading. Grading for the make-up work should be shared with the student within a reasonable period, i.e. 3-5 days. It is the parent and student's responsibility, as appropriate, to initiate the make-up work for missed assignments, tests, and class work. Students must assume responsibility for obtaining the required information and making whatever arrangements are necessary with the teacher. Parents should assist their child with requests for make-up work and other missed assignments and tests.

Students may arrange times with the teacher for making up work for the mutual convenience of student and teacher. Make-up of tests/quizzes should be done before or after school except otherwise arranged by the teacher. Teachers may assign different work or a different test than that which was originally assigned to other students. It is critical that parents remain involved in this process to ensure academic success for the student. Long-term assignments with preset dates are due on the assigned dates, regardless of a student's previous absence.

Parent-Teacher Conferences:

Parents can contact the student's grade level counselor to schedule a parent-teacher conference.

A to D: Ms. Essila Jenkins
E to K: Ms. Karyn Corell
L to Q: Mrs. Arianne White
R to Z: Dr. Eon George
Graduation/Credit Recovery Counselor: Ms. Essila Jenkins

Infinite Campus Access:

Parents can access their student's grades and attendance online via **Infinite Campus Parent Portal**. Please email the parent liaison, Mrs. Pass-Brown at **tonya.passbrown@clayton.k12.ga.us** to obtain their username and password.

Grade Reporting:

Progress reports are issued every four and one-half weeks within each nine week grading period. Report cards are issued every eighteen weeks at the high school level. Report card grades will include both letter and numeric grades for all students.

CLASS OUTLINE/CALENDAR (Tentative)

Week #	Major assignments (i.e. research papers, projects, portfolios)	Due Date	Readings for class Additional assignments, etc.
Week 1	Back to School Introductions 8th Grade Math Review		
Week 2	Unit 1: Modeling Linear Functions		
Week 3	Unit 1: Modeling Linear Functions		Unit 1 Test
Week 4	Unit 2: Analyzing Linear Inequalities		
Week 5	Unit 2: Analyzing Linear Inequalities		Unit 2 Test
Week 6	Unit 3: Investigating Rational and Irrational Numbers		
Week 7	Unit 3: Investigating Rational and Irrational Numbers		Unit 3 Test
Week 8	Unit 4: Modeling and Analyzing Quadratic Functions		
Week 9	Unit 4: Modeling and Analyzing Quadratic Functions		
Week 10	Unit 4: Modeling and Analyzing Quadratic Functions		
Week 11	Unit 4: Modeling and Analyzing Quadratic Functions		Unit 4 Test
Week 12	Unit 5: Modeling and Analyzing Exponential Expressions and Equations		
Week 13	Unit 5: Modeling and Analyzing Exponential Expressions and Equations		Unit 5 Test
Week 14	Unit 6: Analyzing Exponential Functions		
Week 15	Unit 6: Analyzing Exponential Function		Unit 6 Test
Week 16	Unit 7: Investigating Data		
Week 17	Unit 7: Investigating Data		Unit 7 Test
Week 18	Final Exam Week		End of Course Test

ACADEMIC INTEGRITY

Students are expected to submit work for evaluation that has been completed solely by that student, unless group assignments have been so designated. Academic integrity is expected at all times. If a student is found cheating on a graded assignment, the student will not receive credit for that assignment and will face possible disciplinary action. Cheating and plagiarism are considered very serious academic offenses. Any student who plagiarizes or cheats on an assignment and/or test should be referred to the administrator.

PLEASE SIGN BELOW AND RETURN THIS PAGE. BY SIGNING BELOW, YOU ARE ACKNOWLEDGING THAT YOU AND YOUR CHILD HAVE READ AND UNDERSTAND THE ALGEBRA CONCEPTS AND CONNECTIONS SYLLABUS. BY SIGNING BELOW, YOU ALSO ACKNOWLEDGE WHAT IS EXPECTED OF YOUR CHILD OVER THE COURSE OF THIS CLASS. PLEASE SIGN, FILL IN THE INFORMATION BELOW, AND RETURN BY August 16, 2024.

Student Name (Please Print) _____

Student Signature_____ Date: _____

Student's Email Address: _____

Parent/Guardian Name (Please Print) _____

Parent/Guardian Signature_____ Date_____

Additional information to support continued contact:

Information	Parent/Guardian
Please list the Parent/Guardian's Name, to the right, who's information is listed below:	
Day Time Phone Number	
Cellular Phone Number	
Home Phone Number	
Email Address	
Interpreter	Is an interpreter needed for parent/guardian/teacher conferences? **YES or NO** If yes, what language?
Comments you would like to leave the teacher (medical concerns, helpful data, etc):	
