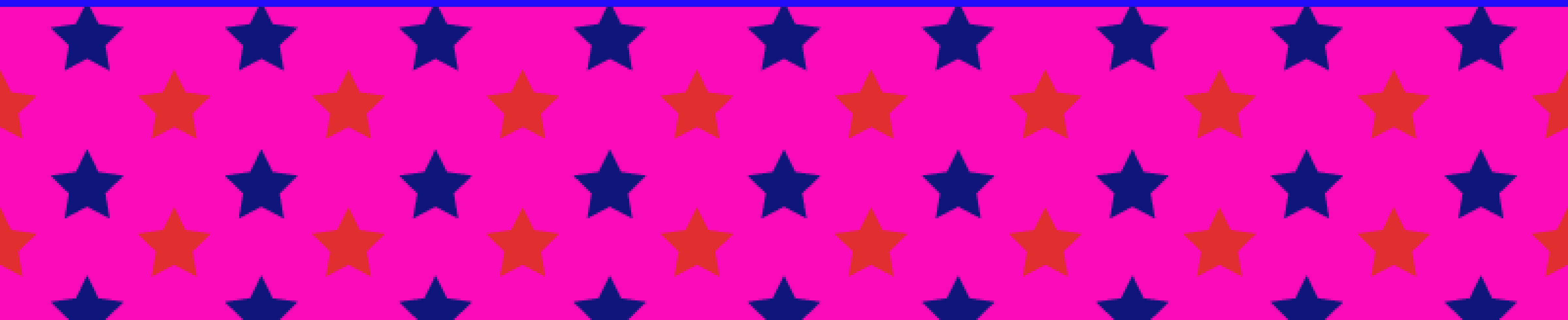# Honors Algebra I

2021 - 2022
1082 - Course Syllabus
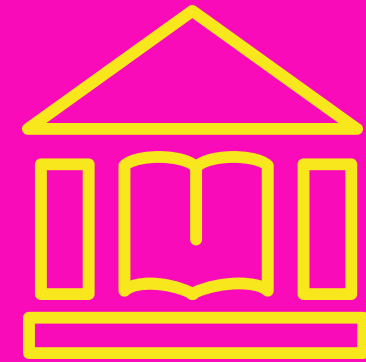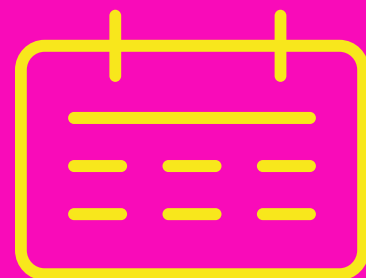
INSTRUCTOR

L. Mondestin
MondesLi@orange.k12.nj.us

APPOINTMENTS

3rd Floor, Room 316

By Appointment

Before School,
During Lunch and
After School

COURSE DESCRIPTION

Honors Algebra 1 is a year-long 10 credit course that develops the foundation for the mathematical knowledge and skills students need to become college and career ready. During this course, students will be introduced to variables, algebraic expressions, equations, functions, inequalities, and their multiple representations. The students develop the ability to explore and solve real-world application problems, demonstrate the appropriate use of graphing calculators, and communicate mathematical ideas clearly. This course lays the foundation to every subsequent course in mathematics.
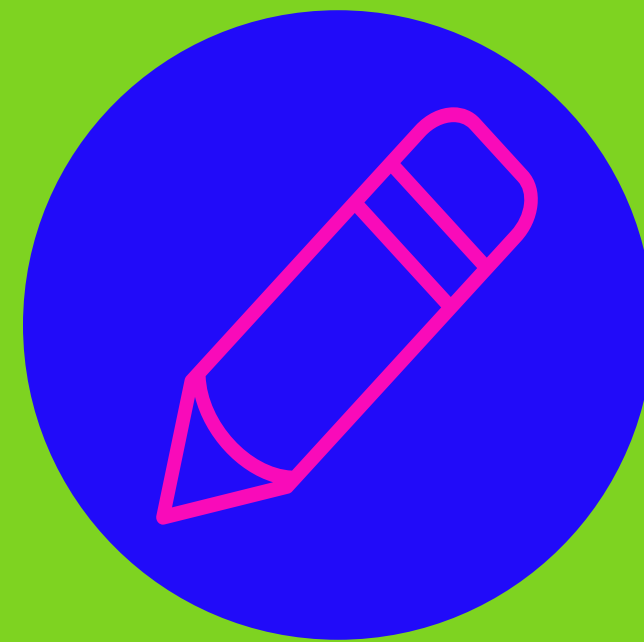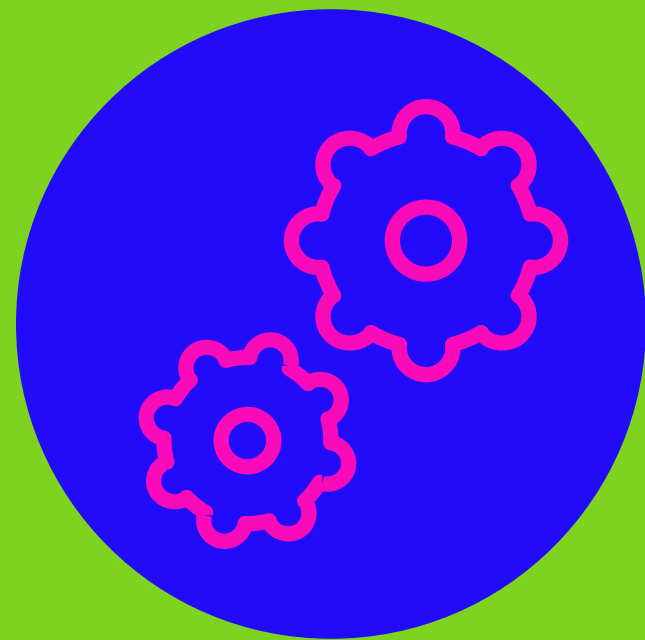
Skills to be Mastered
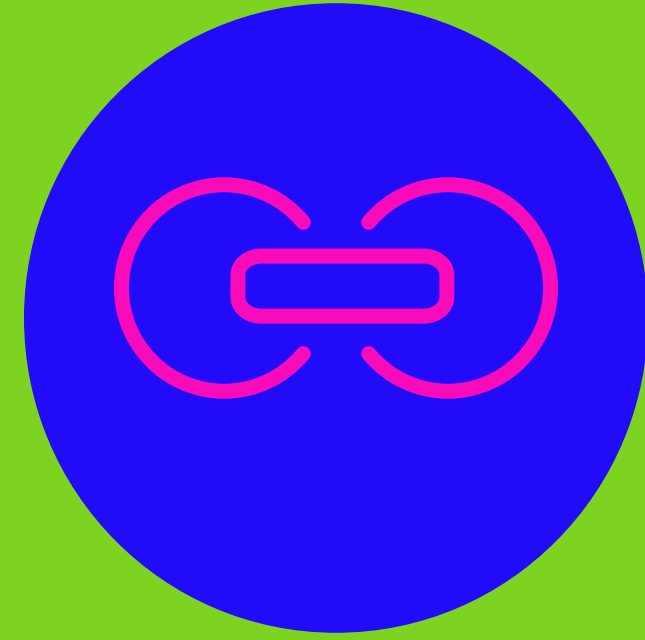
Reading Skills

Problem-solving Skills

Writing Skills

Critical Thinking

Using appropriate tools strategically

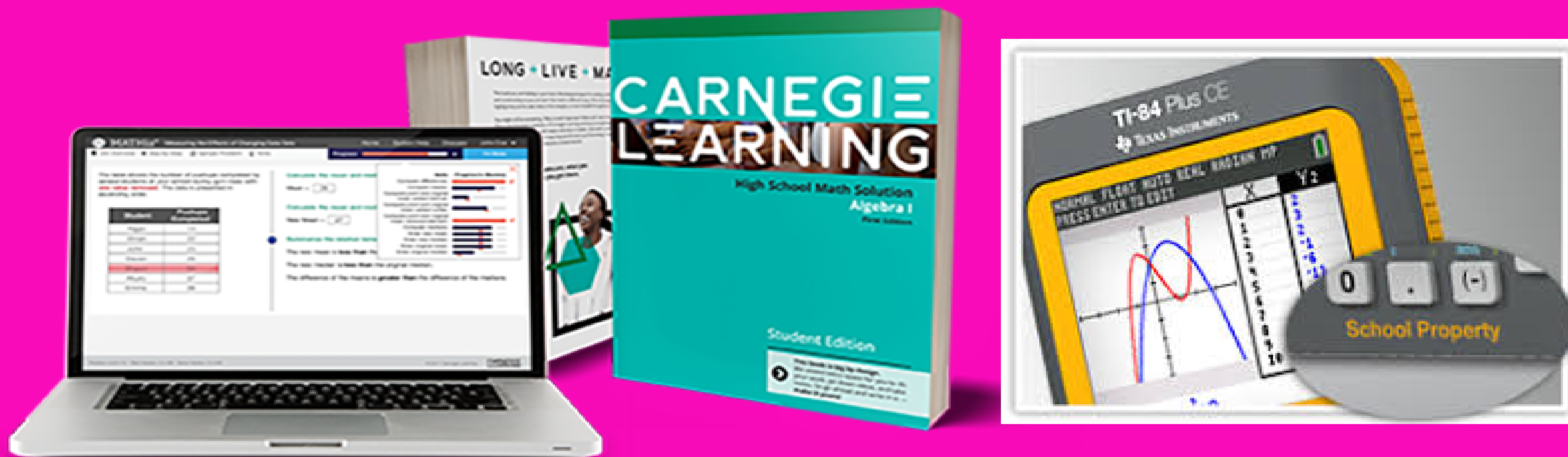Connecting Algebra to the Real World

Mathematical Discourse

Teamwork

UNITS OF STUDY

① Linear Functions and Equations

② Systems of Linear Equations & Inequalities

③ Quadratic Functions and Polynomials

④ Exponential Functions

This year, before we go into our regular units, we will do a transition unit to fill in any gaps students may have, due to our virtual learning for the past 14 months. We will call it **Unit 0.**

Unit 0: Transition Lessons

· Graph proportional relationships, interpreting the unit rate as the slope of the graph (8.EE.5)

· Compare two different proportional relationships represented in different ways. (8. EE.5)

· Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y=mx for a line through the origin and the equation y=mx + b for a line intercepting the vertical axis at b. (8. EE.6)

· Describe qualitatively the functional relationship between two quantities by analyzing a graph. Sketch a graph that exhibits the qualitative features of a function that has been described verbally. (8. F.5)

· Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. (8. EE.7)

· Solving linear equations (justifying with mathematical reason) (A. REI. 1)

Unit 1: Linear functions and Equations
- Input – output tables / Intro to functions
- Mathematical Functions
- Independent vs. Dependent Quantities
- Domain/Range and Discrete/Continuous Graphs
- Function notation and Recognizing Function Families
- Modeling a Linear Situation
- Analyzing a Linear Function
- Solving Linear Equations
- Literal Equations

Unit 2: Systems of Linear Equations/Inequalities
- Standard form of a linear function
- Least Squares Regression (Line of the best fit)
- Solving Systems graphically and equal value method
- Solving Systems using linear combinations
- Identifying the number of solutions graphically and algebraically
- Graphing linear inequalities
- Systems of linear inequalities

Unit 3: Quadratic Functions & Polynomials
- Exploring quadratic functions
- Comparing linear and quadratic functions
- Factored form of a quadratic function
- Transformations of quadratic functions
- Vertex Form of a quadratic function
- Parabola Project
- Adding and Subtracting Polynomials
- Multiplying Polynomials
- Factoring Polynomials
- Solving Quadratics by Factoring
- Completing the Square
- Quadratic Formula
- Real Number

Unit 4: Exponential Functions
- Recognizing Patterns and Sequences
- Arithmetic and geometric sequences
- Determining Recursive and Explicit Expressions from Contexts
- Geometric sequence exponential functions
- Rational Exponent and graphs of exponential functions

Materials List

RequiredMaterials: (needed every day in class)

o Carnegie Learning Algebra I Text Common Core
   (provided by Teacher)

o ALL WORKSHEETS/PACKETS THAT ARE GIVEN OUT

o 1.5 or 2-inch VIEW BINDER ($3.00)

o Hole-punched REINFORCED loose-leaf paper

o Hole-punched REINFORCED graph paper

o Pencils (ALREADY SHARPENED) with erasers

o Colored Pen

o Dividersto fit in your 3-ring binder

o Sheet protectors FOR REFERENCE MATERIALS

o 2 Composition Notebooks

o Planner/Agenda Book

o Ear buds or headphones for individual computer work

o 1 portfolio folder that clips into your 3-ring binder

o 1 box of tissue to contribute to the class

Note

A location for your child to access the Internet is also REQUIRED. There are many computer assignments built into the Algebra program we are using, as well as other programs we use daily. If you do not have access to the Internet at home, please work with your child ahead of time to determine where these assignments can be completed (a relative or friend's house, the library, a teacher's classroom or school computer lab, etc). Another option available is to use our Student Learning Chromebook Library. See me for form)
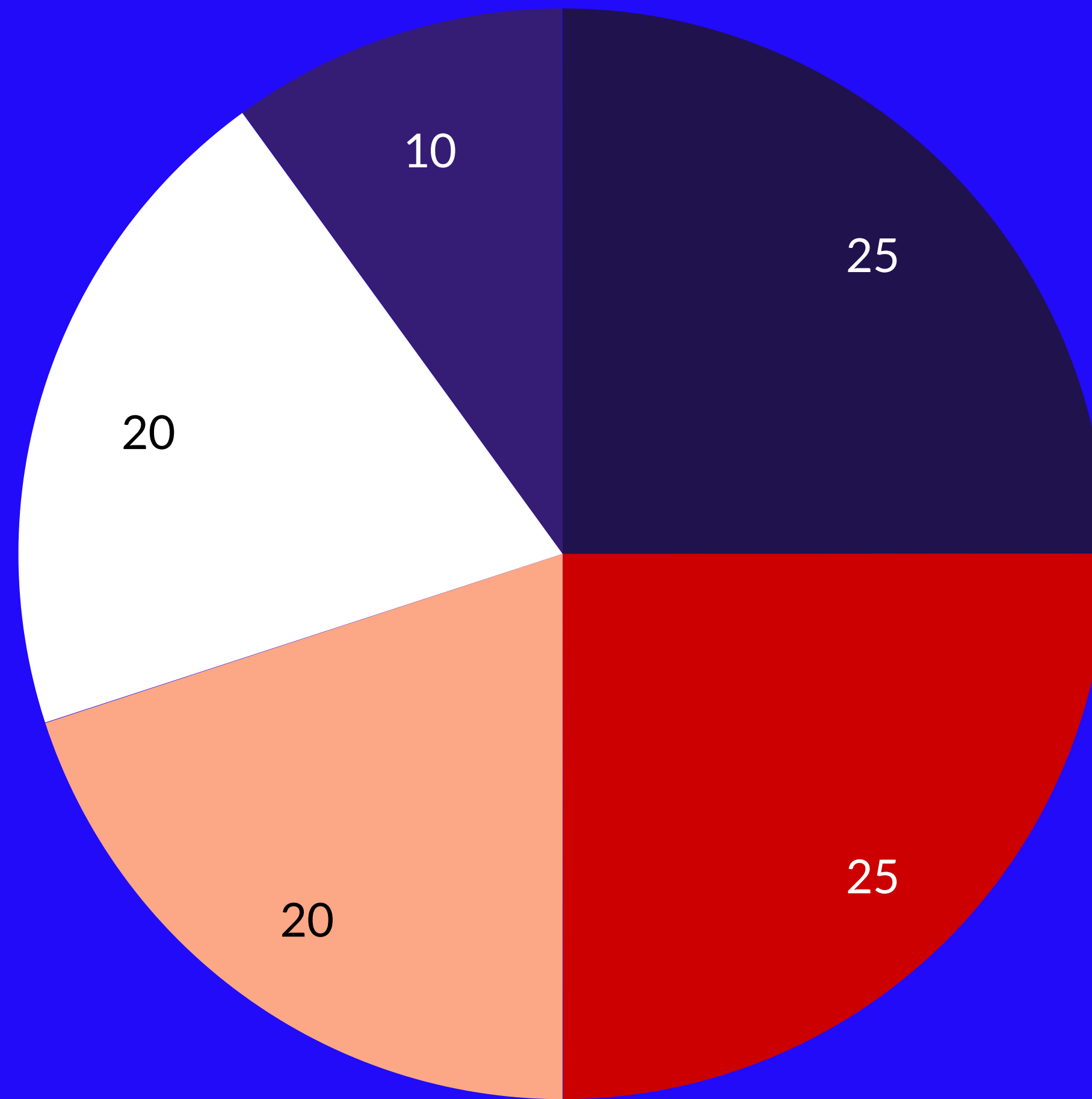
GRADING

Authentic Assessments	**25%**
Tests	**25%**
Classwork / Participation	**20%**
Quizzes	**20%**
Homework	**10%**
	100%

COURSE EXPECTATIONS

P REPARED

Be prepared, focused and ready to learn something new in every class.

R ESPONSIBLE

Ensure all assignments are submitted according to deadline. Class attendance is also important to help students benefit from the course.

P ROACTIVE

Engagement and participation in class is highly encouraged. Don't be afraid to share your thoughts!

R ESPECTFUL

Be respectful towards teacher and classmates. Encourage one another and stay united as a team!

I. Students are required to
- Meet district attendance policies.
- Meet district dress code policies.
- Participate in classroom activities and discussions on a daily basis.
- Complete **all** required assignments **on time.**
- Call a classmate or **text me** in your absence to find out what was missed.
- Keep an accurate and updated workbook and binder.
- Properly prepare for daily activities.
- Complete all computer assignments.

II. Things to Remember
- **Attendance is Important:** Being absent one day is like missing two days of class. Also, being tardy means you will miss all or part of your "Opener" assignment. This can affect your grade.
- **Participation is Mandatory:** We do partner/group activities often, as well as engage in Mathematical discourse. Your daily participation is required.
- **Assignments Must Be Completed**: All class work is to be completed during class time, unless otherwise instructed. Homework must also be ready for the due date given. If you are absent, it is your responsibility to make up any missed assignments for the day. You are also required to complete that day's assignment(s) so that you will be able to participate in discussion the following day.
- **Assessments Must Be Taken:** You are responsible for ALL assessments given. If you are absent, these assessments **MUST** be made up on your own time, after school. Please make arrangements with me. This is **your** responsibility.
- **Assistance is Available:** Having difficulties with something, have a question or concern, left your assignment in school; reach out to me. **DO NOT** wait until you come to class to say, "I did not understand," or "I couldn't find my work." Ask for help **BEFORE** something is due, **NOT AFTER**. After is too late.

Homework: Homework will be assigned regularly in this course. Homework is a way to practice concepts covered in class, as well as help you retain skills over the course. Practice is essential for mastery and success. Without practice, without doing your homework, you will have a difficult time passing. Unless otherwise instructed, homework is due at the beginning of next class. It is your responsibility to turn in your homework on time. Homework done timely will help you assess your understanding and need for support.

Class Work: Students will have class work during every class. Whether it is individual work or group work, students are expected to actively work on these assignments. Class work may be collected at the end of the class to be graded for accuracy.

Parents/Guardians, teachers and administrators will have the right to look at the students' notebook (binder) at any time. Therefore, students must always place their work in their notebook the day the work is given back to them.

I may amend this syllabus during the school year. I wish you and your child much success this school year!

Parents/Guardians are encouraged to contact me regarding any concerns regarding your child in my class. You can reach me at my email address. I will do my best to return emails within 24 hours.

CLASSROOM PHILOSOPHY

By Teaching We Learn

Complacency is the enemy of excellence. "In this class, we don't do easy. We make easy happen through hard work and learning."

Bringing out the best in every student and helping them to reach their fullest potential is the job of every teacher. Therefore, I am committed to helping every student to excel academically and to guide them to grow as a student and as an individual.

However, ultimately success comes from students who are motivated and willing to work hard, no matter what. So students MUST commit to doing their part. "No excuses, just results!"

Remember... "Good, better, best. Never let it rest. Until your good is better and your better is best." ~Tim Duncan