MATHEMATICS DIVISION

ADLAI E. STEVENSON HIGH SCHOOL

MTH 351 / MTH 352 - ALGEBRA 2
COURSE OVERVIEW
Effective: 8/2026

COURSE DESCRIPTION - ***What is this course about?***

Algebra 2 (MTH 351/352) builds on students' prior experiences with geometric relationships and deductive reasoning to deepen their fluency in algebraic thinking. Overarching ideas from Algebra 1 around patterns of change, mathematical representations, models and solutions are further extended in scope and depth. Students' prior exposure to linear relationships will be strengthened. Students will delve deeper into understanding the value of non-real numbers, inverse operations and overlapping transformations of previously studied linear, quadratic, and exponential functions. These skills will be applied to understand the characteristics of polynomial, rational, exponential, logarithmic, and trigonometric functions. Students' mathematical reasoning skills will be further strengthened in verbal and written forms.

Successfully completing Algebra 2 (MTH 351/352) will prepare students for Advanced Mathematical Decision Making (MTH 441/442), Data Science (MTH 481/482) and Functions and Trigonometry (MTH 451/452).

COURSE SKILLS - ***What enduring skills will I develop?***

The learning in this course is organized around the following enduring and transferable skills.
Implement Mathematical Processes - Mathematical processes are the steps used to algebraically manipulate functions, expressions, and equations. These processes are the building blocks of learning and doing mathematics and support the development of procedural fluency.
Create and Connect Mathematical Representations - Mathematical representations use pictures, figures, symbols, real-world objects, and dynamic interfaces to capture and communicate mathematical ideas. The skill of creating and connecting verbal, visual, symbolic, tabular, or physical models makes abstract concepts more tangible and understandable.
Reason and Justify Using Mathematics - The skill of reasoning and justifying involves analyzing problems, constructing coherent arguments, and writing valid conclusions using logical thinking. Reasoning and justifying are the cornerstones of learning mathematics, as they promote conceptual understanding, foster critical thinking, prepare students for advanced topics, and strengthen communication skills.

SPECIFIC COURSE TOPICS OF STUDY - *With which topics or context will I develop the skills?*

Topics & Contexts	
Functions and Transformations Quadratic Relations and Equations Polynomial Functions and Equations Rational Functions and Equations Radical Functions and Equations	Exponential Functions and Equations Logarithmic Functions and Equations Probability Concepts and Independence Unit Circle and Trigonometric Functions Graphs of Trigonometric Functions

LEARNING RESOURCES - *What resources and tools will support my learning?*

E-Book	Kennedy, D., Milou, E., Thomas, J., & Zbiek, R. M. (2018). *Envision algebra 2* [E-book]. Pearson.
Calculator	A graphing calculator is required; the TI-84 Plus CE is strongly recommended.
iPad	SHS-issued iPads will be used to access notes, view feedback, engage, and collaborate.
Check Progress	Interactive Report Card (IRC)
Canvas	https://d125.instructure.com/ (Parents & guardians can access using their student's credentials.)
Teacher Support	Contact your teacher directly for weekly office hours.
Tutor Support	Free in-school tutoring is available through the ILC/ELC: https://www.d125.org/academics/tutoring
Other Support	Khan Academy IXL Math Delta Math Varsity Tutors

LEARNING MATHEMATICS - *How will I be expected to learn and grow in my learning?*

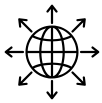
Mathematics extends beyond procedures to include reasoning, problem-solving, and making sense of ideas. Deep learning develops through understanding, connection, and flexible application. Students grow through discussion, collaboration, and productive struggle. These expectations, grounded in SEL, Stevenson's Wellness framework, and a strong curriculum, support success in mathematics while fostering a sense of belonging, resilience, and self-management in a safe, supportive environment.

1. **Come prepared.** Bring your charged calculator, iPad, and course materials, and review prior problems so you are ready to connect new learning. This builds organization, readiness, and responsibility for learning (Self-Management, Mindset-Awareness & Purpose).

2. **Engage actively in math discussions.** Share your reasoning, listen to others, use precise math language, and contribute respectfully to group problem-solving. This builds communication skills, empathy, and a sense of belonging in the classroom (Relationship Skills & Social Awareness, Connection-Belonging & Collaboration).

3. **Use feedback and support to refine your thinking.** Revise solutions, adjust strategies, ask questions, and seek help through feedback to strengthen understanding. This builds reflection, resilience, and independence as a learner. (Self-Awareness & Responsible Decision-Making, Mindset-Reflection & Restoration-Recovery).

4. **Persevere with integrity.** Embrace challenging problems, explore multiple solution paths, and always show honest work. This builds perseverance, integrity, and the ability to recover from setbacks (Self-Management, Mindset-Resilience).



5. **Connect and apply ideas.** Relate new concepts to prior functions, models, or real-world applications, and use technology strategically to analyze and represent problems. This builds purpose, efficiency, and the ability to apply learning meaningfully (Responsible Decision-Making, Connection-Purpose).

Together, these expectations foster the habits of confident, reflective, independent learners and ensure students are prepared to succeed in mathematics and beyond.

PROFICIENCY SCALE & SUCCESS CRITERIA - *How is my proficiency measured?*

The scales describe and communicate proficiency for each skill using the descriptors Exceeds, Meets, Approaching, and Developing. Success criteria define the contexts in which the skills are developed and applied.

Implement Mathematical Processes			
EXCEEDS	MEETS	APPROACHING	DEVELOPING
I can consistently and correctly identify and apply mathematical rules or procedures as an exemplary model and/or in extendable contexts.	I can correctly identify and apply mathematical rules or procedures.	I can correctly identify and apply certain aspects of mathematical rules or procedures.	I can attempt to identify and apply certain aspects of mathematical rules or procedures.
Unit-Specific Success Criteria will be provided in class and will require retained mastery of prior topics/contexts.			

Create and Connect Mathematical Representations			
EXCEEDS	MEETS	APPROACHING	DEVELOPING
I can correctly create and connect mathematical representations that reveal important mathematical relationships.	I can correctly create and connect mathematical representations.	I can correctly create and connect mathematical representations in certain aspects or contexts.	I can create and connect mathematical representations in limited aspects or contexts.
Unit-Specific Success Criteria will be provided in class and will require retained mastery of prior topics/contexts.			

Reason and Justify Using Mathematics			
EXCEEDS	MEETS	APPROACHING	DEVELOPING
I can correctly develop mathematical arguments and conclusions effectively, serving as an exemplary model of logical, well-supported reasoning and/or supporting transfer to extendable contexts.	I can correctly develop mathematical arguments and conclusions.	I can correctly develop mathematical arguments and conclusions in certain aspects or contexts.	I can develop mathematical arguments and conclusions in limited aspects or contexts.
Unit-Specific Success Criteria will be provided in class and will require retained mastery of prior topics/contexts.			

COMMUNICATING LEARNING PROGRESS - *How will my progress be communicated?*

Student progress is reported using three complementary metrics: preparation, concern, and proficiency. Together, these measures provide a fuller picture of learning and support student agency and success.

Independent Practice Log (Preparation): This log reflects consistency in practice and preparation, highlighting habits that build readiness, responsibility, and self-efficacy.				
How Am I Preparing?	PREPARED (P)	PARTIALLY PREPARED (PP)	NOT PREPARED (NP)	MISSING (M)
Student Action	Complete practice on time and come ready to use it.	Finish missing parts and correct your work before the next class.	Make a plan with your teacher to complete your practice and be ready for the next class.	Complete the work and check in with your teacher right away.

Weekly Growth Log (Growth): This reports weekly progress and indicates whether students are on track or need additional practice or support. Growth reflects progress over time relative to course expectations.					
Are there concerns with my growth?	APPROPRIATE GROWTH (AG) No concerns about development. Positive trajectory of learning.	MINIMAL GROWTH (MG) Moderately concerned about development. Flat or shallow trajectory of learning. Support encouraged.	FAILING TO GROW (FG) Highly concerned about development. Negative trajectory of learning. Support Required. In danger of failing the course.	INCOMPLETE/ FAILING (I/FG) Failing to grow due to missing work. Highly concerned about development due to missing evidence. Support Required. In danger of failing the course.	INSUFFICIENT EVIDENCE (I) Too little evidence to judge growth. Review the IRC for missing work and contact your teacher to determine what to submit or redo.
Student Action	Keep using what helps you improve and challenge yourself.	Use feedback, fix mistakes, and practice what you don't understand.	Make and follow a plan with your teacher to improve, complete missing work, and get help.	Complete missing work immediately, then make and follow a plan to improve.	Turn in missing work and check with your teacher on the next steps.

Skill Development Log (Proficiency): This measure uses assessments to show skill mastery, highlighting strengths, identifying growth areas, and guiding reflection and next steps.					
How Am I Doing?	EXCEEDS The student's skill proficiency level exceeds the standard.	MEETS The student's skill proficiency level meets the standard.	APPROACHING The student's skill proficiency level is emerging and not yet meeting the standard.	DEVELOPING The student's skill proficiency level is developing foundational knowledge and prerequisite skills.	MISSING The student is missing evidence, and there is time remaining to submit it.
Student Action	Apply your skills to new and more challenging problems.	Keep your work accurate and consistently apply your skills.	Fix mistakes using feedback and practice key skills.	Review foundational skills, practice regularly, and get help.	Turn in the work and show what you know.

INTERACTIVE REPORT CARD - *Where can I review my learning progress?*
The Interactive Report Card (IRC) displays students' performance on assessments, assignments completed, teacher comments, and concerns with students' learning development.

ASSESSMENT MAKEUP & DEADLINES - How can I make up incomplete or missing assessments?
Assessments are part of the learning process in which students apply skills, receive feedback, reflect, and re-engage with material. Timely completion supports adjustment, reinforces effective strategies, and strengthens learning alongside peers. Missing an assessment delays these benefits and may slow progress.

Students must complete all assessments. If absent, students are expected to complete assessments in the Testing Center or as directed by their teacher. If the work is incomplete within the provided timeframe, teachers may set a new deadline, notify parents/guardians, require completion during class time, or involve the dean to ensure completion.

REPERFORMANCE OPPORTUNITIES - How can I show my growth in each skill?
Each course skill is assessed separately based on the semester-long body of work and patterns of growth or decline. Assessments will require students to demonstrate understanding of prior and current unit contexts. Students *may* have opportunities to provide additional evidence at the end of the semester to demonstrate improved proficiency. The curricular team will determine eligibility, timing, and format, and may require evidence of successful preparation.

PROJECTED GRADE RANGE - *What is my projected grade?*

Week	Grade Posting
1-3	The IRC reports IP (In Progress) while sufficient evidence is being gathered.
4-13	The IRC displays a projected grade range (e.g., B/A or B/C). The first letter represents the current grade based on demonstrated proficiency. The second letter reflects the projected trend, taking into account weekly growth, progress, and/or learning concerns.
14-18	The projected range may narrow to a single letter grade as the semester grade becomes more clearly established.
18	The final grade is determined, reported, and posted.

GRADE DETERMINATION - *How will my semester grade be determined?*
Teachers determine semester grades based on the body of evidence, considering patterns of growth or decline over time. Teachers may request additional evidence as needed.

Grade	Proficiency Levels on Course Skills
A	All skills are Exceeds or Meets
B	One skill is Approaching with all remaining skills Meets or Exceeds
C	Two or more skills are Approaching with all remaining skills Meets or Exceeds, **or** One skill is Developing with all remaining skills Meets or Exceeds
D	One skill, Developing, and one or more skills Approaching
F	Two or more skills Developing
Important Note: If a student has missing evidence (M), they risk failing the course. In these cases, there may not be enough evidence to determine proficiency or a course grade.	