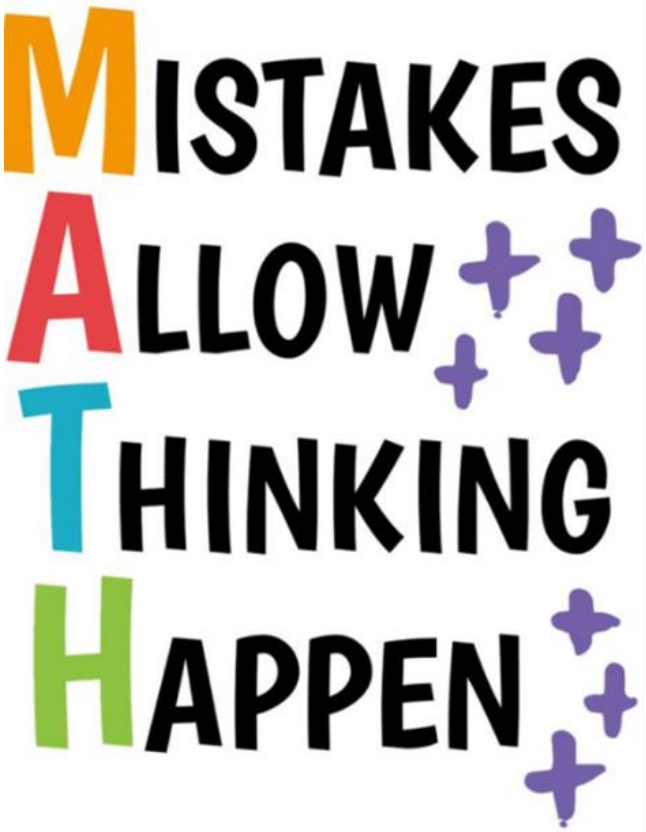
Hempstead Union Free School District
Algebra 2
Mathematics Pacing Guide
2025–2026 School Year



Mission Statement

We value each student's voice and background, using their work to deepen understanding and guide instruction. By meeting learners where they are and embracing mistakes as thinking opportunities, we foster a culture of reflection, growth, and meaningful mathematical learning.

Vision Statement

We envision a learning community where students are equipped with the critical thinking, problem-solving, and adaptive skills needed to thrive in a world yet to be imagined. Through rigorous, relevant, and responsive math instruction, we prepare all learners to be college- and career-ready, confident in their ability to tackle future challenges with curiosity and resilience.

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Effective Math Teaching Practices

Mathematics Teaching Practices
Establish mathematics goals to focus learning. Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situates goals within learning progressions, and uses the goals to guide instructional decisions.
Implement tasks that promote reasoning and problem solving. Effective teaching of mathematics engages students in solving and discussing tasks that promote mathematical reasoning and problem solving and allow multiple entry points and varied solution strategies.
Use and connect mathematical representations. Effective teaching of mathematics engages students in making connections among mathematical representations to deepen understanding of mathematics concepts and procedures and as tools for problem solving.
Facilitate meaningful mathematical discourse. Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.
Pose purposeful questions. Effective teaching of mathematics uses purposeful questions to assess and advance students' reasoning and sense making about important mathematical ideas and relationships.
Build procedural fluency from conceptual understanding. Effective teaching of mathematics builds fluency with procedures on a foundation of conceptual understanding so that students, over time, become skillful in using procedures flexibly as they solve contextual and mathematical problems.
Support productive struggle in learning mathematics. Effective teaching of mathematics consistently provides students, individually and collectively, with opportunities and supports to engage in productive struggle as they grapple with mathematical ideas and relationships.
Elicit and use evidence of student thinking. Effective teaching of mathematics uses evidence of student thinking to assess progress toward mathematical understanding and to adjust instruction continually in ways that support and extend learning.

NCTM

Algebra 2 Curriculum Calendar (Sept 2025 – Jan 2026)

Sep 23, 2025 - HOLIDAY: Rosh Hashanah Sep 24, 2025 - HOLIDAY: Rosh Hashanah

Sep 25, 2025 - Unit 2: Polynomials - Remainder and Factor Theorem

Sep 26, 2025 - Unit 2: Polynomials - Writing Polynomials When given a factor

Sep 29, 2025 - Unit 2: Polynomials - Finding the Zeroes/Solutions after dividing (Synthetic)

Sep 30, 2025 - Unit 2: Polynomials - Characteristics of Polynomial/Quadratic Graphs

Oct 01, 2025 - Unit 2: Polynomials - Finding/Graphing Vertex, Directrix, Focus

Oct 02, 2025 - HOLIDAY: Yom Kippur

Oct 03, 2025 - Unit 2: Polynomials – Finding/Graphing Vertex, Directrix, Focus

Oct 06, 2025 - Unit 2: Polynomials - End Behavior and Identifying Even Odd Functions

Oct 07, 2025 - Unit 3: Systems - Solving a Systems with 2 variables

Oct 08, 2025 - Unit 3: Systems - Solving a Linear Quadratic System

Oct 09, 2025 - Unit 3: Systems - Solving a 3 Variable Systems (Not in Next Gen)

Oct 10, 2025 - Unit 4: Functions – Solving a 3 Variable Systems (Not in Next Gen)

Oct 13, 2025 - HOLIDAY: Colombus Day

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Algebra 2 Curriculum Calendar
(Sept 2025 – Jan 2026)

Oct 14, 2025 - Unit 4: Functions - Functions and Relations/Parent Functions

Oct 15, 2025 - Unit 4: Functions - Function Notation

Oct 16, 2025 - Unit 4: Functions - Composition of Functions

Oct 17, 2025 - Unit 4: Functions - Transformation of Functions

Oct 20, 2025 – Unit 4: Functions-Inverse Functions

Oct 21, 2025 - Unit 4: Functions - Inverse Functions

Oct 22, 2025 - Unit 5: Radical Functions/Equations - Simplifying Radicals (Simplest Radical Form, Adding, Multiplying, Conjugates)

Oct 23, 2025 - Unit 5: Radical Functions/Equations - Laws of Exponents

Oct 24, 2025 - Unit 5: Radical Functions/Equations - Simplifying Radicals to Exponents and vice versa

Oct 27, 2025 - Unit 5: Radical Functions/Equations - Solving Radical Equations

Oct 28, 2025 - Unit 6: Exponential Functions and Logs - Converting between Log and Exponential Form and vice versa

Oct 29, 2025 - Unit 6: Exponential Functions and Logs - Properties of Logs/ Expanding and Condensing Logarithms

Oct 30, 2025 - Unit 6: Exponential Functions and Logs - Solving Logarithmic Equations

Oct 31, 2025 - Unit 6: Exponential Functions and Logs - Solving Logarithmic Equations with ln and e

Nov 03, 2025 - Unit 6: Exponential Functions and Logs - Exponential Growth and Decay

Algebra 2 Curriculum Calendar
(Sept 2025 – Jan 2026)

Nov 04, 2025 - HOLIDAY: Election Day (No Students)

Nov 05, 2025 - Unit 6: Exponential Functions and Logs - Applications Word Problems (Interest and Compound Interes

Nov 06, 2025 - Unit 6: Exponential Functions and Logs - Graphing Exponential and Logarithmic Functions

Nov 07, 2025 - Unit 6: Exponential Functions and Logs - Regression (Exponential, Power, Log)

Nov 10 2025 - Unit 7: Rational Equations and Sequences - Summation and Arithmetic Sequences

Nov 11, 2025 - HOLIDAY: Veterans Day

Nov 12, 2025 - Unit 7: Rational Equations and Sequences - Geometric Sequences

Nov 13, 2025 - Unit 7: Rational Equations and Sequences - Recursive Sequences

Nov 14, 2025 - Unit 7: Rational Equations and Sequences - Geometric Series

Nov 17, 2025 - Unit 8: Rational Expressions - Simplifying (Add, Subtract, Multiply, Divide) Rational Expressions

Nov 18, 2025 - Unit 8: Rational Expressions - Solving Rational Equations

Nov 19, 2025- Unit 8 Rational Expressions-Solving Rational Equations

Nov 20, 2025 - Unit 9: Probability and Statistics - Venn Diagrams and Two-Way Tables

Nov 21, 2025 - Unit 9: Probability and Statistics - Conditional Probability and Independence

Nov 24, 2025- Unit 9: Probability and Statistics-Conditional Probability and Independence

Algebra 2 Curriculum Calendar (Sept 2025 – Jan 2026)

Nov 25, 2025 - Unit 9: Probability and Statistics - Normal Distributions

Nov 26, 2025-Emergency Drill ½ Day

Nov 27, 2025 - HOLIDAY: Thanksgiving

Nov 28, 2025 - HOLIDAY: Thanksgiving Break

Dec 01, 2025 - Unit 9: Probability and Statistics - Margin of Error and Confidence Interval Dec

02, 2025 - Unit 9: Probability and Statistics - Data Analysis

Dec 03, 2025 - Unit 10: Trigonometry - Unit Circle and Trig Identities

Dec 04, 2025 - Unit 10: Trigonometry - Finding a Reference Angle

Dec 05, 2025 - Unit 10: Trigonometry - Finding the Missing Angle given a trig function (Using Right Triangles and Identities)

Dec 08, 2025 - Unit 10: Trigonometry - Analyzing and Graphing the Sine and Cosine Function

Dec 09, 2025- Unit 10: Trigonometry-Analyzing and Graphing the Sine and Cosine Function Dec

10, 2025- Unit 10: Trigonometry- Analyzing and Graphing the Sine and Cosine Function

Dec 11, 2025-Unit 10: Trigonometry- Analyzing and Graphing Tan Function (Next Gen)

Dec 12, 2025 - Unit 10: Trigonometry - Trig Word Problems

Dec 15, 2025-Unit 10: Trigonometry – Trig Word Problems

Conceptual Category	Domain	Cluster	Cluster Code	Standard
Number and Quantity 4% - 8%	The Real Number System	Extend the properties of exponents to rational exponents.	N-RN.A	N-RN.1
				N-RN.2
	The Complex Number System	Perform arithmetic operations with complex numbers.	N-CN.A	N-CN.1
				N-CN.2
Algebra 30% - 39%	Seeing Structure in Expressions	Interpret the structure of expressions.	A-SSE.A	A-SSE.2
		Write expressions in equivalent forms to reveal their characteristics.	A-SSE.B	A-SSE.3(a,c)
	Arithmetic with Polynomials and Rational Expressions	Understand the relationship between zeros and factors of polynomials.	A-APR.B	A-APR.2
				A-APR.3
		Rewrite rational expressions.	A-APR.D	A-APR.6
	Creating Equations	Create equations that describe numbers or relationships.	A-CED.A	A-CED.1
	Reasoning with Equations and Inequalities	Understand solving equations as a process of reasoning and explain the reasoning.	A-REI.A	A-REI.1b
				A-REI.2
		Solve equations and inequalities in one variable.	A-REI.B	A-REI.4b
		Solve systems of equations.	A-REI.C	A-REI.7b
		Represent and solve equations and inequalities graphically.	A-REI.D	A-REI.11
Functions 38% - 45%	Interpreting Functions	Understand the concept of a function and use function notation.	F-IF.A	F-IF.3
		Interpret functions that arise in applications in terms of the context.	F-IF.B	F-IF.4
				F-IF.6
		Analyze functions using different representations.	F-IF.C	F-IF.7(c,e)
				F-IF.8b
				F-IF.9
	Building Functions	Build a function that models a relationship between two quantities.	F-BF.A	F-BF.1(a,b)
				F-BF.2
		Build new functions from existing functions.	F-BF.B	F-BF.3b
				F-BF.4a
				F-BF.5a
				F-BF.6
				F-BF.7
	Linear, Quadratic, and Exponential Models	Construct and compare linear, quadratic, and exponential models and solve problems.	F-LE.A	F-LE.2
				F-LE.4
		Interpret expressions for functions in terms of the situation they model.	F-LE.B	F-LE.5
	Trigonometric Functions	Extend the domain of trigonometric functions using the unit circle.	F-TF.A	F-TF.1
				F-TF.2
				F-TF.4
		Model periodic phenomena with trigonometric functions.	F-TF.B	F-TF.5
		Prove and apply trigonometric identities.	F-TF.C	F-TF.8
Statistics and Probability 14% - 22%	Interpreting Categorical and Quantitative Data	Summarize, represent, and interpret data on a single count or measurement variable.	S-ID.A	S-ID.4a
				S-ID.4b
		Summarize, represent, and interpret data on two categorical and quantitative variables.	S-ID.B	S-ID.6a
	Making Inferences and Justifying Conclusions	Understand and evaluate random processes underlying statistical experiments.	S-IC.A	S-IC.2
		Make inferences and justify conclusions from sample surveys, experiments, and observational studies.	S-IC.B	S-IC.3
				S-IC.4
				S-IC.6a
				S-IC.6b
	Conditional Probability and the Rules of Probability	Understand independence and conditional probability and use them to interpret data.	S-CP.A	S-CP.1
				S-CP.4
		Use the rules of probability to compute probabilities of compound events in a uniform probability model.	S-CP.B	S-CP.7

Conceptual Category	Percent of Test by Credits	Domains in Algebra II
Number & Quantity	4% - 8%	The Real Number System (N-RN) The Complex Number System (N-CN)
Algebra	30% - 39%	Seeing Structure in Expressions (A-SSE) Arithmetic with Polynomials and Rational Expressions (A-APR) Creating Equations (A-CED) Reasoning with Equations and Inequalities (A-REI)
Functions	38% - 45%	Interpreting Functions (F-IF) Building Functions (F-BF) Linear, Quadratic, and Exponential Models (F-LE) Trigonometric Functions (F-TF)
Statistics & Probability	14% - 22%	Interpreting Categorical and Quantitative Data (S-ID) Making Inferences and Justifying Conclusions(S-IC) Conditional Probability and the Rules of Probability(S-CP)

Next-Generation Math Content Standards

Next-Generation Math Practice Standards

Standard for Mathematical Practice	Student Friendly Language
1. Make sense of problems and persevere in solving them. 	• I can try many times to understand and solve a math problem.
2. Reason abstractly and quantitatively. 	• I can think about the math problem in my head, first.
3. Construct viable arguments and critique the reasoning of others. 	• I can make a plan, called a strategy, to solve the problem and discuss other students' strategies too.
4. Model with mathematics. 	• I can use math symbols and numbers to solve the problem.
5. Use appropriate tools strategically. 	• I can use math tools, pictures, drawings, and objects to solve the problem.
6. Attend to precision. 	• I can check to see if my strategy and calculations are correct.
7. Look for and make use of structure 	• I can use what I already know about math to solve the problem.
8. Look for and express regularity in repeated reasoning. 	• I can use a strategy that I used to solve another math problem.

Algebra 2 Resources

NextGen Math SCDN site

eMathinstruction videos

Math Medic Link

Amplify Desmos

Open Middle

Which One Doesn't Belong?

Geogebra

NYS Math Regents Prep

Enrichment Google Doc