



Algebra II PACING GUIDE

FIRST QUARTER

UNIT	PACING	TOPICS	STANDARDS	LEARNING OBJECTIVES
Topic 1 – Linear Functions and Systems	18 days	<ol style="list-style-type: none"> Key Features of Functions Transformations of Functions Piecewise-Defined Functions Arithmetic Sequences and Series Solving Equations and Inequalities by Graphing Linear Systems Solving Linear Systems Using Matrices 	<ul style="list-style-type: none"> A2.F.IF.A.1 A2.F.IF.A.2 A2.F.IF.B.4 A2.F.BF.B.3 A2.F.BF.B.4 A2.F.BF.A.1 A2.F.BF.A.2 A2.A.CED.A.1 A2.A.REI.B.3 	<ul style="list-style-type: none"> Topic 1 focuses on extending students' previous knowledge of functions. Students identify the key features of functions and understand how to interpret graphs of functions. Students learn methods for solving equations and inequalities and systems of linear equations and inequalities by using graphing, tables, and matrices.
Topic 2 – Quadratic Functions and Equations	18 days	<ol style="list-style-type: none"> Vertex Form of a Quadratic Function Standard Form of a Quadratic Function Factored Form of a Quadratic Function Complex Numbers and Operations Completing the Square The Quadratic Formula Linear-Quadratic Systems 	<ul style="list-style-type: none"> A2.F.BF.B.3 A2.F.BF.A.1 A2.A.CED.A.2 A2.F.IF.A.1 A2.A.APR.A.2 A2.F.IF.B.5.a A2.A.REI.A.1 A2.A.REI.B.4 	<ul style="list-style-type: none"> Topic 2 focuses on extending previous understanding of quadratic functions. Students identify different forms of quadratic functions and their key features. Students explore complex numbers and solve problems with complex numbers. Students learn different methods for solving quadratic equations.

SECOND QUARTER

UNIT	PACING	TOPICS	STANDARDS	LEARNING OBJECTIVES
Topic 3 – Polynomial Functions	19 days	<ol style="list-style-type: none"> Graphing Polynomial Functions Adding, Subtracting, and Multiplying Polynomials Polynomial Identities 	<ul style="list-style-type: none"> A2.F.IF.A.1 A2.F.IF.A.3 A2.F.IF.B.4 A2.F.IF.B.6.a A2.F.BF.A.1 	<ul style="list-style-type: none"> Topic 3 focuses on extending students' previous knowledge of polynomials. Students identify the key features of polynomial functions and interpret graphs of polynomial functions. They learn

		4. Dividing Polynomials 5. Zeroes of Polynomial Functions 6. Theorems About Roots of Polynomial Functions 7. Transformations of Polynomial Functions 8. Understanding Geometric Formulas as Functions	<ul style="list-style-type: none"> A2.F.BF.B.3 A2.A.APR.A.1 A2.A.APR.A.2 A2.N.Q.A.1.b 	<p>methods to add, subtract, multiply, and divide polynomial expressions. They use polynomial identities to multiply and factor polynomial expressions, use multiple theorems as tools to understand roots of polynomial functions, and transform graphs from cubic or quartic parent functions.</p>
Topic 5 – Rational Exponents and Radical Functions	16 days	1. nth Roots, Radicals, and Rational Exponents 2. Properties of Exponents and Radicals 3. Graphing Radical Functions 4. Solving Radical Equations 5. Function Operations 6. Inverse Relations and Functions	<ul style="list-style-type: none"> A2.N.RN.A.1.a A2.N.RN.A.1.b A2.N.RN.A.1.c A2.F.IF.A.1 A2.F.IF.B.4 A2.F.BF.B.3 A2.F.BF.A.1.a A2.F.BF.A.1.b A2.F.BF.B.4.a A2.F.BF.B.4.b A2.F.BF.B.4.c A2.A.REI.A.1 A2.A.REI.A.2 A2.A.CED.A.3 A2.A.CED.A.1 	<ul style="list-style-type: none"> Topic 5 extends knowledge of radical functions. Students understand properties of rational exponents and radicals. They learn methods to graph radical functions, solve radical equations, and combine functions. Students identify inverses of functions and learn to write the equations of inverse functions.
Review and Semester 1 Exams				
THIRD QUARTER				
UNIT	PACING	TOPICS	STANDARDS	LEARNING OBJECTIVES
Topic 6 – Exponential and Logarithmic Functions	19 days	1. Key Features of Exponential Functions 2. Exponential Models 3. Logarithms 4. Logarithmic Functions 5. Properties of Logarithms 6. Exponential and Logarithmic Equations 7. Geometric Sequences and Series	<ul style="list-style-type: none"> A2.F.IF.A.2 A2.F.IF.B.4 A2.F.IF.B.6.a A2.F.IF.B.5 A2.F.IF.B.5.b A2.F.IF.B.6.b A2.F.BF.A.1 A2.F.BF.A.2 A2.F.BF.B.3 A2.F.BF.B.4.b 	<ul style="list-style-type: none"> Topic 6 focuses on extending previous understanding of exponential functions. Students identify the key features of exponential functions. Students understand logarithms and their properties. Students learn how to solve exponential and logarithmic equations.

		8. Comparing Properties of Functions	<ul style="list-style-type: none"> • A2.A.SSE.A.1.a • A2.A.SSE.A.1.b • A2.N.Q.A.1.d • A2.F.LE.A.1.a • A2.F.LE.A.1.b • A2.F.LE.A.1.c • A2.F.LE.A.2 • A2.A.CED.A.1 • A2.A.REI.A.1 	
Topic 10 - Matrices	14 days	1. Operations with Matrices 2. Matrix Multiplication 3. Inverses and Determinants 4. Inverse Matrices and Systems of Equations	<ul style="list-style-type: none"> • A2.N.M.A.1 • A2.N.M.A.2.a • A2.N.M.A.2.b • A2.N.M.A.2.c • A2.N.M.A.2.d • A2.N.M.A.3 	<ul style="list-style-type: none"> • Topic 10 focuses on extending matrices. Students understand that matrices use rows and columns to organize a represent data. Students learn methods to add, subtract, and multiply matrices and to solve systems of linear equations with matrices.
Topic 11 – Data Analysis and Statistics	16 days	1. Statistical Questions and Variables 2. Statistical Studies and Sampling Methods 3. Data Distributions 4. Normal Distributions 5. Margin of Error 6. Introduction to Hypothesis Testing	<ul style="list-style-type: none"> • A2.N.Q.A.1.a • A2.N.Q.A.1.c • A2.S.IC.A.1 • A2.S.IC.A.2 • A2.S.IC.A.3 • A2.S.ID.A.1 • A2.S.ID.A.2 • A2.S.ID.A.3 	<ul style="list-style-type: none"> • Topic 11 focuses on the comparison of statistical data. Students identify statistical questions and types of statistical studies. They understand that data distributions can be normal and skewed and sample statistics can be used to estimate population parameters. Students learn methods to explain where data values fall within a population and use statistical data to compare groups and formula and test a hypothesis.
FOURTH QUARTER				
UNIT	PACING	TOPICS	STANDARDS	LEARNING OBJECTIVES
Topic 12 – Probability	11 days	1. Probability Events 2. Conditional Probability 3. Permutations and Combinations 4. Probability Distributions 5. The Law of Large Numbers	<ul style="list-style-type: none"> • A2.S.CP.A.1 • A2.S.CP.C.4 • A2.S.CP.B.2.a • A2.S.CP.B.2.b • A2.S.CP.B.3 	<ul style="list-style-type: none"> • Topic 12 focuses on extending students' previous knowledge of ratios and basic probability to the probability of multiple events, combinatorics, probability distributions, and expected value. Students understand and graph probability distributions. Students learn methods for using probability models and expected value to make decisions.

EOC Review	15 days	All previously covered topics	Major Focus Standards of TNReady	<ul style="list-style-type: none"> • All previously covered objectives.
Topic 7 – Trigonometric Functions (Pre-Calculus Intro)	14 days		<ul style="list-style-type: none"> • G.SRT.C.4.a • G.SRT.C.5.a • G.SRT.C.4 • A2.F.IF.A.1 • A2.F.IF.A.2 • A2.F.IF.B.6.a • A2.F.BF.B.3 	<ul style="list-style-type: none"> • Topic 7 focuses on extending knowledge of functions to trigonometric functions. Students learn the trigonometric ratios and use them to find missing side lengths of triangles. They learn to graph trigonometric functions and identify the key features of the graphs. Students learn methods to solve problems using trigonometric functions.
Review and Semester 2 Exams				