Pre-Calculus Curriculum Map
Updated June 2023

Month	Unit/Topic of Study from CPM	Standards	Key Vocabulary	Test Taking, and Reading , and Engagement Strategies	Math Skills (decipher/use charts and graphs)	Writing in the content area	Assessments
Sept	Chapter 1: Preparing you for your Journey	F.IF.4 F.IF.5 F.IF.7b F.BF.1 F.BF.4 A.CED.1 A.CED.2 A.SSE.2 A.APR.6	Chapter 1 Vocabulary	*Think-Ink-Pair-Share Mix-Pair-Share *Swapmeet Pairs Compare *Peer Edits *Dyad *Whiparound *"I Wonder…" *Huddle *Traveling Salesman *Silent Debate * Red Light, Green Light *I Spy One Stray	You will review and revisit inverse and piecewise-defined functions. You will also be introduced to composite functions. You will define radians, use them to measure angles, and apply these units of measure to the unit circle.	Content Writing Map https://docs.google.com/document/d/1e8TtIvyzuF5GhHaazWVAqFS4DzCNc7eMcXk_ID_JH1s/edit	Chapter 1 Team Test Chapter 1 Individual Test
Oct	Chapter 2: Functions and Trigonometry Chapter 3: Algebra and Area Under a	Chapter 2: F.IF.4 F.IF7 F.BF.3 F.TF.3 F.TF.4 F.TF.6 F.TF.7	Chapter 2 Vocabulary Chapter 3 Vocabulary	Ch. 2: *Peer Edit *Think-Pair-Share *Reciprocal Teaching Rally Table *Red Light, Green Light *Walk and Talk	Chapter 2: You will identify even and odd functions. You will transform functions by shifting and stretching them. You will determine the values of coordinates of key points on the unit circle and use them to calculate the values of sine and cosine for any angle. You will use the unit circle to generate the graphs of sine and cosine.You will	Claim Identification	Unit Circle Quiz Chapter 2 Team Test Chapter 2 individual Test

	Curve	Chapter 3: A.APR.6 A.APR.7 A.SSE.3 A.REI.7 A.REI.11 A.CED.1 F.BF.1		Chapter3: Huddle Whiparound Red Light, Green Light Participation Quiz I Spy One Stray Gallery Walk Swapmeet Pairs Compare	generate the graphs of the inverse trigonometric functions. You will solve trigonometric equations by looking at a graph, the unit circle, and using the inverse functions on a calculator. You will see how trigonometric equations can have multiple solutions. Chapter 3: In this section you will begin by working with rational expressions. This work will be extended to complex fractions. You will use your algebra skills to solve complicated equations and systems of equations. Finally, you will apply what you have learned to solve a series of word problems. You will learn how to calculate sums of expressions using summation notation. You will learn how to approximate the area under a curve using rectangles and understand what the area under a curve represents. You will apply what you have learned about the area under a curve to everyday situations.		Chapter 3 Team Test Chapter 3 Individual test
Nov	Chapter 4: Polynomial and Rational Functions	Chapter 4: A.APR.3 A.APR.6 A.CED.1 A.CED.3 F.IF.4 F.IF.7c F.IF.7D	Chapter 4 Vocabulary	Chapter 4: Whiparound Pairs Check Hot Potato Fish bowl “I wish…” Team Swap Traveling Salesman	Chapter 4: You will investigate polynomial functions and learn how to sketch their graphs without using a graphing calculator. You will also learn how to write equations from graphs. You will apply the Fundamental Theorem of Algebra to determine all of the roots of a polynomial. You will transform rational functions, learning a new way to rewrite the equations of these functions so that the graphs	Command of Evidence	Checkpoint 4A: Transformations of Functions Checkpoint 4B: Graphs of Trig Functions Checkpoint Chapter 4 Team Test

		N.CN.8 N.CN.9			can be more easily sketched. Next, you will learn to graph rational functions with discontinuities other than horizontal and vertical asymptotes.You will begin by solving polynomial and rational inequalities. To conclude the chapter you will apply what you have learned to some everyday situations.		Chapter 4 Individual Test
Dec	Chapter 5: Exponentials and Logarithms	Chapter 5: A.CED.2 F.BF.5 F.IF.7e F.LE.2 F.LE.4	Chapter 5 Vocabulary	Chapter 5: I spy One Stray Swapmeet Pairs Compare Hot Potato Pairs Check Jigsaw Fish Bowl Dyad Red Light, Green Light Numbered Heads KWL Huddle Gallery Walk	Chapter 5 You will apply what you know about exponential functions, explore equivalent transformations, and investigate the number e. The properties of logarithms are reviewed and proved in this section. You will practice using these properties to solve equations and simplify expressions. You will then graph and transform the family of logarithmic functions	Inference	Checkpoint 5: Rational Expressions and Complex Fractions Chapter 5 Team Test Chapter 5 Individual Test
Jan	Chapter 6 Triangles and Vectors	G.SRT.9 G.SRT.10 G.SRT.11 N.VM.1 N.VM.2 N.VM.3 N.VM.4 N.VM.5	Chapter 6 Vocabulary	Whip around Huddle I spy One Stray Give one, Get one All record round robin Think Pair Share Gallery Walk	You will develop and use the Law of Sines and the Law of Cosines to solve non-right triangles. You will learn to solve triangles when the given information does not create one unique triangle. You will learn how to use vectors to describe motion. You will complete vector operations both graphically and algebraically. You will apply your knowledge of vectors to solve everyday problems.	Inference	Checkpoint 6A: Polynomial Functions Checkpoint 6B: Rational Functions Chapter 6 Team Test

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Feb	Chapter 8 Extending Periodic Functions	A.CED.2 F.BF.3 F.TF.7 F.TF.9 F.TF.10	Chapter 8 Vocabulary	Dyad Huddle Hot Potato Pairs Check Reciprocal Teaching Red Light, Green Light Think-Ink-Pair-Share	You will use sinusoidal functions in application problems. You will extend your knowledge of modeling with periodic functions to more complex situations. You will generate the graphs of the reciprocal trigonometric functions: secant, cosecant, and cotangent. You will prove and apply trigonometric identities. You will use these identities to simplify expressions and to solve more complex trigonometric equations.	Compare/ Contrast	Checkpoint 8A: Solving Triangles Checkpoint 8B: Vector Operations Chapter 8 Team Test Chapter 8 Individual Test
March	Chapter 7 Limits and Rates	Preparation for Calculus	Chapter 7 Vocabulary	Peer Edit Proximity Partners Gallery Walk Pairs check Think-Ink-Pair-Share Mix-Pair-Share Dyad Elevator Talk Walk and Talk Huddle I Spy One Stray	You will look at limits from several perspectives including geometry, graphs, tables, and algebra. You will learn the formal definition of continuity. You will explore rates of change using multiple representations. You will calculate average rates of change and use these averages to estimate instantaneous rates of change. You will look at the slopes of secant and tangent lines. You will use limits to determine instantaneous rates of change.	Review	Checkpoint 7A: Solving Equations with Exponents Checkpoint 7B: Solving Logarithmic Equations Chapter 7 Team Test Chapter 7 Individual Test
April	Chapter 9: Matrices	Chapter 9: N.VM.6 N.VM.7 N.VM.8 N.VM.9 N.VM.10	Chapter 9 Vocabulary	Chapter 9 Red light green light Think pair share Dyad I spy	Ch 9: In this section, you will learn what matrices are and how to perform basic operations with matrices. You will also learn how they can be useful for solving systems of equations with many	Testing	Checkpoint 9A: Limits Checkpoint 9B: Rates of Change

		N.VM.11 N.VM.12 A.REI.8 A.REI.9		One Stray Huddle Pairs Check Whiparound	variables.Linear transformations using matrices are introduced in this section. You will work with 2×2 matrices as transformations of the plane, learning how to rotate and reflect points. You will compose transformations using matrices and investigate the properties of linear transformations.		Chapter 9 Individual Test Chapter 9 Team Test
May	Chapter 10 Conics and Parametric Functions	Chapter 10: G.GPE.3 F.IF.10	Chapter 10 Vocabulary	Chapter 10 Hot Potato Red light, Green Light Huddle Ambassador Think Pair Share	Chapter 10: You will use formal definitions to generate circles, ellipses, hyperbolas, and parabolas. You will identify conic sections from their equations. You will see how a graph can be described by letting x and y be functions dependent on the parameter t, called parametric equations. You will use these functions to describe and solve problems involving motion and velocity.	Variety	Checkpoint 10A: Trigonometric expressions and identities Chapter 10 Individual Test Chapter 10 Team Test
June	Chapter 11: Polar Functions and Complex Numbers	F.IF.11 N.CN.3 N.CN.4 N.CN.5 N.CN.6	Chapter 11 Vocabulary	Gallery Walk Red light Green light	In your studies of mathematics, you have graphed points using rectangular coordinates (x,y). In this chapter you will learn how to plot points and graph functions with polar coordinates, which use a distance and an angle. You will then apply your work with polar coordinates to the world of complex numbers. You will graph complex numbers and learn to rewrite them in polar form. You will also perform operations with complex numbers in polar form, including multiplying, dividing,		Checkpoint 11: Operations with Matrices Chapter 11 Individual Test Chapter 11 Team Test

					and computing powers and roots.		