



Carroll ISD Pre-Calculus 2021-2022 Year-At-A-Glance

	1 st Grading Period	2 nd Grading Period	3 rd Grading Period	4 th Grading Period
Process Standards	PC.1 A, B, C, D, E, F, G Math Process Standards, how students understand and learn mathematics, used throughout the course			
TEKS	Unit 1: Prerequisites (Review of Alg 2 Teks) and Right/Oblique Triangle Trig. PC4.E, F, G, H Unit 2a: Unit Circle and Trig. Values PC4.A, B, C, D, E, F; PC2.P Unit 2b: Unit Circle and Trig. Values of Non-Special Angles PC4.A, B, C, D, E, F; PC2.P	Unit 3: Trig. Graphing and Inverses PC2.E, F, G, H, I, O, P Unit 4: Trig. Equations and Identities PC2.P; PC4. E; PC5.M, N Unit 5: Vectors and Parametric Equations PC3.A, B, C; PC4.I, J, K Unit 6: Polar Equations and Graphs PC3.D, E	Unit 7: Characteristics of Functions: PC2.B, C, D, E, F, G, I, J, K, L, M Unit 8a: Polynomials PC2.F, G, H, I, J; PC5. J, K Unit 8b: Polynomials PC2.F, G, H, I ; PC5.J, K	Unit 9: Rational Functions PC2.F, G, I, J, K, L, M, N, PC5.L Unit 10: Exponential and Logarithmic Functions PC2. F, G, I, J, N, PC5.G, H, I Unit 11: Sequences and Series PC5.A, B, C, D, E, F Unit 12: Conics Sections PC3. F, G, H, I
Topic Focus	Unit 1: Prerequisites <ul style="list-style-type: none"> ● Review Algebra skills ● Right Triangle Trigonometry ● Linear equations/Graphing ● Factoring ● Solve application problems using right triangle trigonometry 	Unit 3: Trig. Graphing and Inverses <ul style="list-style-type: none"> ● Graph sine and cosine graphs ● Graph transformations of sine and cosine graphs ● Use sinusoidal curves to model application problems 	Unit 7: Characteristics of Functions <ul style="list-style-type: none"> ● Graph sine and cosine graphs ● Graph the functions listed in the library of functions ● Form the sum, difference, product, and quotient of two functions 	Rational Functions <ul style="list-style-type: none"> ● Add/subtract/multiply and divide rational functions ● Solve rational functions ● Graph rational functions ● Evaluate and analyze graphs of rational functions including end behavior



	<ul style="list-style-type: none"> • Solve application problems using the Law of Sines and the Law of Cosines • Use Law of Sines and Heron’s Formula to solve the area of triangles <p>Unit 2a: Unit Circle and Trig. Values of Special Angles</p> <ul style="list-style-type: none"> • Evaluate the six basic trigonometric function • Develop the idea of the unit circle and note the patterns and relationships • Develop understanding of the unit circle in both radians and degrees • Evaluate trigonometric identities <p>Unit 2b: Unit Circle and Trig. Values of Non-Special Angles</p> <ul style="list-style-type: none"> • Evaluate the six basic trigonometric function • Develop the idea of the unit circle and note the patterns and relationships • Develop understanding of the unit circle in both radians and degrees • Evaluate trigonometric identities 	<ul style="list-style-type: none"> • Graph inverse trigonometric functions <p>Unit 4: Trig. Equations and Identities</p> <ul style="list-style-type: none"> • Verify fundamental trigonometric identities • Verify identities using other formulas • Solve trigonometric equations using identities and formulas • Sum and Difference Identities <p>Unit 5: Vectors and Parametric Equations</p> <ul style="list-style-type: none"> • Use the component form of vectors to solve for magnitude and direction of vectors • Solve application problems using vectors • Convert between the parametric and rectangular forms of functions • Use parametric equations to simulate two dimensional motion problems. <p>Unit 6: Polar Equations and Graphs</p> <ul style="list-style-type: none"> • Plot polar points on polar graphs • Plot polar functions 	<ul style="list-style-type: none"> • Identify the domain of a function defined by an equation • Graph Piecewise functions • Graph functions using vertical/horizontal shifts, compressions, and stretches • Graph functions using reflections over the x-and y-axis • Use composition of functions to verify that two functions are inverses <p>Unit 8a: Polynomials</p> <ul style="list-style-type: none"> • Investigate area under a curve • Write quadratic functions in vertex form • Use quadratics to model real-life problems • Graph and solve polynomial inequalities • Evaluate and analyze graphs of polynomial functions including end behavior • Graph polynomial functions <p>Unit 8b: Polynomials</p> <ul style="list-style-type: none"> • Identify polynomial functions and their degree • Graph a polynomial function using transformations • Find a polynomial function from its zeros 	<ul style="list-style-type: none"> • Graph and solve nonlinear inequalities <p>Exponential and logarithmic functions</p> <ul style="list-style-type: none"> • Graph exponential growth and decay functions • Evaluate and graph logarithmic functions • Apply properties of logarithms in order to solve logarithmic equations <p>Apply exponential and power functions in order to solve exponential equations</p> <p>Sequences and Series</p> <ul style="list-style-type: none"> • Represent patterns using geometric and arithmetic sequences • Use sequences and series to solve real life application problems • Use the binomial theorem to expand binomial expressions • Use binomial expansion to solve probability application problems <p>Conic Sections</p> <ul style="list-style-type: none"> • Solve and Graph Equations of Ellipses, and Hyperbolas • Identify Conic sections from equations
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Additional Resources	McGraw Hill Pre-Calculus My Math Lab			

Power Standards: PC2.A, PC2.C, PC2.D, PC2.I, PC2.J, PC2.K, PC2.M, PC5.A, PC5.M