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Course: Pre-Calculus
Year: 2020-2021

Resources used: Ohio's New Learning Standards, AP Calculus AB and BC Course Guide

Suggested Pacing	Content Standards What must students know and be able to do?	Learning and Performance Expectations	Assessment of Learning Options How will we know if they learned this skill?	Learning Resources Options
2-3 days	A.SSE.1. Interpret expressions that represent a quantity in terms of its context. ★ a. Interpret parts of an expression, such as terms, factors, and coefficients. b. Interpret complicated expressions by viewing one or more of their parts as a single entity. A.SSE.2 Use the structure of an expression to identify ways to rewrite it. For example, to factor 3x(x − 5) + 2(x − 5), students should recognize that the "x − 5" is common to both expressions being added, so it simplifies to (3x + 2)(x − 5); or see x4 − y4 as (x2)2 − (y2)2, thus recognizing it as a difference of squares that can be factored as (x2 − y2)(x2 + y2). A.SSE.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.★ a. Factor a quadratic expression to reveal the zeros of the function it defines. (A1, M2)	Prerequisite Skills (Factoring Quadratics, Quadratic Formula, Synthetic Division)	Observation, in class discussion, practice problems, activities (kahoot, quizizz), assessments - formative and summative	Textbook, Notes, Real life examples, modeling problems
2-3 days		Linear Algebra Review	Observation, in class discussion, practice problems, activities (kahoot, quizizz), assessments	Graphing Calculator

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3-4 weeks	A.SSE.1. Interpret expressions that represent a quantity in terms of its context. ★ a. Interpret parts of an expression, such as terms, factors, and coefficients. b. Interpret complicated expressions by viewing one or more of their parts as a single entity. F.IF.6 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. ★ (A2, M3) F.IF.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include the following: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.★ (A2, M3)	Functions- including graphing and properties (even and odd, end behavior)	Observation, in class discussion, practice problems, activities (kahoot, quizizz), assessments	Textbook, Notes, Graphing Calculator, Modeling, Real Life application
	F.IF.1 Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. The graph of f is the graph of the equation y = f(x). F.IF.2 Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. F.IF.7 Graph functions expressed symbolically and indicate key features of the graph, by hand in simple cases and using technology for more complicated cases. Include applications and how key features relate to characteristics of a situation, making selection of a particular type of function model appropriate.★ a. Graph linear functions and indicate intercepts. (A1, M1) b. Graph quadratic functions and indicate intercepts,	Library of Functions; Piecewise Functions		Textbook, Notes, Graphing Calculator, Modeling, Real Life application

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	maxima, and minima. (A1, M2) c. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions. (A2, M3)			
	F.BF.3 Identify the effect on the graph of replacing f(x) by f(x) + k, kf(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. (A2, M3) a. Focus on transformations of graphs of quadratic functions, except for f(kx); (A1, M2)	Transformations		Textbook, Notes, Graphing Calculator
	A.CED.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations.★ a. Focus on formulas in which the variable of interest is linear or square. For example, rearrange Ohm's law V = IR to highlight resistance R, or rearrange the formula for the area of a circle A = (π)r2 to highlight radius r. (A1) b. Focus on formulas in which the variable of interest is linear. For example, rearrange Ohm's law V = IR to highlight resistance R. (M1) c. Focus on formulas in which the variable of interest is linear or square. For example, rearrange the formula for the area of a circle A = (π)r2 to highlight radius r. (M2) d. While functions will often be linear, exponential, or quadratic, the types of problems should draw from more complicated situations. (A2, M3)	*Mathematical Modeling ** Topic covered in Advanced PreCalculus		Textbook, Notes, Graphing Calculator, Real Life application
2 weeks	N.CN.7 Solve quadratic equations with real coefficients that have complex solutions.	Quadratic Functions and Models	Observation, in class discussion, practice problems, activities (kahoot, quizizz), assessments	Textbook, Notes, Graphing Calculator

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	A.APR.2 Understand and apply the Remainder Theorem: For a polynomial p(x) and a number a, the remainder on division by x − a is p(a). In particular, p(a) = 0 if and only if (x – a) is a factor of p(x). A.APR.3 Identify zeros of polynomials, when factoring is reasonable, and use the zeros to construct a rough graph of the function defined by the polynomial.	Polynomial Functions and Models		Textbook, Notes, Graphing Calculator
	A.APR.6 Rewrite simple rational expressionsG in different forms; write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x), using inspection, long division, or, for the more complicated examples, a computer algebra system.	Properties of Rational Functions		Textbook, Notes
	A.APR.6 Rewrite simple rational expressionsG in different forms; write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x), using inspection, long division, or, for the more complicated examples, a computer algebra system. F.IF.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include the following: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.★ (A2, M3) F.IF.7 Graph functions expressed symbolically and indicate key features of the graph, by hand in simple cases and using technology for more complicated cases. Include applications and how key features relate to characteristics of a situation, making selection of a particular type of function model appropriate.★(+) g. Graph rational functions, identifying zeros and	Graphing Rational Functions		Textbook, Notes, Graphing Calculator

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	asymptotes when factoring is reasonable, and indicating end behavior. (A2, M3)			
	(+) N.CN.9 Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.	Real Zeros of Polynomial Function		Graphing Calculator
	N.CN.1 Know there is a complex number ii such that $ii2$ = −1, and every complex number has the form aa + $bbbb$ with aa and bb real. N.CN.2 Use the relation $ii2$= −1 and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers. (+) N.CN.3 Find the conjugate of a complex number; use conjugates to find magnitudes and quotients of complex numbers. (+) N.CN.8 Extend polynomial identities to the complex numbers. For example, rewrite x² + 4 as (x + 2 ii)(x − 2 ii).	Complex Zeros: Fundamental Theorem of Algebra		Graphing Calculator
3 weeks	F.BF.1 Write a function that describes a relationship between two quantities.★ (+) c. Compose functions. For example, if T(y) is the temperature in the atmosphere as a function of height, and h(t) is the height of a weather balloon as a function of time, then T(h(t)) is the temperature at the location of the weather balloon as a function of time.	Composition of Functions	Observation, in class discussion, practice problems, activities (kahoot, quizizz), assessments	
	F.BF.4 Find inverse functions. a. Informally determine the input of a function when the output is known. (A1, M1) (+) b. Read values of an inverse function from a graph or a table, given that the function has an inverse. (A2, M3) (+) c. Verify by composition that one function is the inverse of another. (A2, M3) (+) d. Find the inverse of a function algebraically, given that the function has an inverse. (A2, M3) (+) e. Produce an invertible function from a non-	One to One Functions; Inverses		Textbook, Notes, Graphing Calculator

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	invertible function by restricting the domain. (+) F.BF.5 Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents			
	N.RN.1 Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define 51/3 to be the cube root of 5 because we want (51/3)3 = 5(1/3)3 to hold, so (51/3)3 must equal 5. N.RN.2 Rewrite expressions involving radicals and rational exponents using the properties of exponents.	Exponential Functions		Textbook, Notes, Graphing Calculator
	F.IF.7 Graph functions expressed symbolically and indicate key features of the graph, by hand in simple cases and using technology for more complicated cases. Include applications and how key features relate to characteristics of a situation, making selection of a particular type of function model appropriate.★(+) h. Graph Logarithmic functions, indicating intercepts and end behavior.	Logarithmic Functions		Textbook, notes, Real Life application, Modeling, Graphing Calculator
	(+) F.BF.5 Understand the inverse relationship between exponents and Logarithms and use this relationship to solve problems involving Logarithms and exponents	Properties of Logarithms		Textbook, notes
	A.SSE.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.★ c. Use the properties of exponents to transform expressions for exponential functions. For example, 8t can be written as 23t.	Logarithmic and Exponential Equations		Textbook, notes, Real Life application, Modeling, Graphing Calculator
	N.Q.2 Define appropriate quantities for the purpose of descriptive modeling.★ N.Q.3 Choose a level of accuracy	Compound Interest		Textbook, notes, Real Life application,

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	appropriate to limitations on measurement when reporting quantities.★			Modeling
	N.Q.2 Define appropriate quantities for the purpose of descriptive modeling.★ N.Q.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.★ F.IF.8 Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function. a. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. (A2, M3) i. Focus on completing the square to quadratic functions with the leading coefficient of 1. (A1, M2) b. Use the properties of exponents to interpret expressions for exponential functions. For example, identify percent rate of changeG in functions such as y = (1.02)t , and y = (0.97)t and classify them as representing exponential growth or decay. (A2, M3) i. Focus on exponential functions evaluated at integer inputs. (A1, M2)	*Exponential Growth and Decay Models **Topic Covered in Advanced PreCalculus		Textbook, notes, Real Life application, Modeling
3-4 weeks	F.TF.1 Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle. G.C.6 Derive formulas that relate degrees and radians, and convert between the two. (A2, M3)	Angles	Observation, in class discussion, practice problems, activities (kahoot, quizizz), assessments	Textbook, notes
	(+) F.TF.3 Use special triangles to determine geometrically the values of sine, cosine, tangent for π /3, π /4, and π /6, and use the unit circle to express the values of sine, cosine, and tangent for π − x, π + x, and 2π − x in terms of their values for x, where x is any real number.	Unit Circle		Textbook, notes

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	(+) F.TF.4 Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.	Applying the Unit Circle to Trigonometric Functions		Textbook, notes
	(+) F.TF.4 Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions	Properties of Trigonometric Functions		Textbook, notes
	F.IF.7 Graph functions expressed symbolically and indicate key features of the graph, by hand in simple cases and using technology for more complicated cases. Include applications and how key features relate to characteristics of a situation, making selection of a particular type of function model appropriate.★ f. Graph exponential functions, indicating intercepts and end behavior, and trigonometric functions, showing period, midlineG, and amplitude. (A2, M3) F.TF.5 Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.★	Graphs of Sine, Cosine, Tangent, Cosecant, Secant, Cosecant		Real Life application, Modeling, Graphing Calculator
	F.IF.7 Graph functions expressed symbolically and indicate key features of the graph, by hand in simple cases and using technology for more complicated cases. Include applications and how key features relate to characteristics of a situation, making selection of a particular type of function model appropriate.★ f. Graph exponential functions, indicating intercepts and end behavior, and trigonometric functions, showing period, midlineG, and amplitude. (A2, M3) F.TF.5 Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.★	Sinusoidal Equations and Phase shift		Textbook, notes, Graphing Calculator
5 weeks	(+) F.TF.6 Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed.	Inverse Trigonometric Functions	Observation, in class discussion, practice problems,	Textbook, notes, Real life application, Modeling

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	(+) F.T F.7 Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context. ★		activities (kahoot, quizizz), assessments	
	F.TF.8 Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$, and use it to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant of the angle	Trigonometric Identities		Textbook, notes
	(+) F.TF.9 Prove the addition and subtraction formulas for sine, cosine, and tangent, and use them to solve problems.	Sum and Difference Formulas		Textbook, notes
		Double Angle and Half Angle Formulas		Textbook, notes
	(+) F.T F.7 Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context. ★	Trigonometric Equations		Textbook, notes, Real life application, modeling
2 weeks	G.SRT.8 Solve problems involving right triangles.★ a. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems if one of the two acute angles and a side length is given. (G, M2) (+) b. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.★ (A2, M3)	Right Triangle Trigonometry	Observation, in class discussion, practice problems, activities (kahoot, quizizz), assessments	Textbook, notes, Real life application, modeling
	(+) G.SRT.10 Explain proofs of the Laws of Sines and Cosines and use the Laws to solve problems. (+) G.SRT.11 Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles, e.g., surveying problems, resultant forces.	Law of Sines		Textbook, notes

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	(+) G.SRT.10 Explain proofs of the Laws of Sines and Cosines and use the Laws to solve problems. (+) G.SRT.11 Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles, e.g., surveying problems, resultant forces.	Law of Cosines		Textbook, notes
	(+) G.SRT.9 Derive the formula A = 1/2 ab sin(C) for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.	Area of Triangle		
		*Harmonic Motion; Combining Waves		Textbook, notes
2 weeks	(+) N.CN.4 Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number.	Polar Coordinates	Observation, in class discussion, practice problems, activities (kahoot, quizizz), assessments	Textbook, notes
	(+) N.CN.4 Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number.	Polar Equations and Graphs		Graphing Calculator
	(+) N.CN.4 Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number. (+) N.CN.5 Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation. For example, $(-1 + ii\sqrt{3})^3 = 8$ because $(-1 + ii\sqrt{3})$ has	Complex Plane; De Moivre's Theorem		Textbook, notes

	magnitude 2 and argument 120°. (+) N.CN.6 Calculate the distance between numbers in the complex plane as the magnitude of the difference, and the midpoint of a segment as the average of the numbers at its endpoints.			
	(+) N.CN.3 Find the conjugate of a complex number; use conjugates to find magnitudes and quotients of complex numbers. (+) N.VM.1 Recognize vectorG quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes, e.g., $\boldsymbol{vv}$, $\| \boldsymbol{vv} \|$, $\|\boldsymbol{vv}\|$, $vv^{\rightarrow}$. (+) N.VM.2 Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point. (+) N.VM.3 Solve problems involving velocity and other quantities that can be represented by vectors. Perform operations on vectors. (+) N.VM.4 Add and subtract vectors. a. Add vectors end-to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes. b. Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum. c. Understand vector subtraction $\boldsymbol{vv} - \boldsymbol{ww}$ as $\boldsymbol{vv} + (-\boldsymbol{ww})$, where $-\boldsymbol{ww}$ is the additive inverse of $\boldsymbol{ww}$, with the same magnitude as $\boldsymbol{ww}$ and pointing in the opposite direction. Represent vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction component-wise. (+) N.VM.5 Multiply a vector by a scalar. a. Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g., as cc (vvx, vvy) = ($cccc$ x, $cccc$ y). b. Compute the magnitude of a scalar multiple $cc\boldsymbol{vv}$ using $\|cc\boldsymbol{vv}\|$ = $\|cc\|$ $\boldsymbol{vv}$. Compute the direction of $cc\boldsymbol{vv}$ knowing that when $\| cc \|$ $\boldsymbol{vv} \neq 0$, the	*Vectors, Dot Product, Cross Product **Topic Covered in Advanced PreCalculus		

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	direction of $cc\boldsymbol{vv}$ is either along $\boldsymbol{vv}$ (for $cc > 0$) or against $\boldsymbol{vv}$ (for $cc < 0$).			
1 week	G.GPE.1 Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation. (+) G.GPE.2 Derive the equation of a parabola given a focus and directrix. (+) G.GPE.3 Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.	*Conics **Topic Covered in Advanced PreCalculus	Observation, in class discussion, practice problems	Desmos graphing calculator
3-4 weeks	(+) N.VM.6 Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network. (+) N.VM.7 Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled. (+) N.VM.8 Add, subtract, and multiply matrices of appropriate dimensions. (+) N.VM.9 Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties. (+) N.VM.10 Understand that the zero and identity matrices play a role in matrix addition and multiplication analogous to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse. (+) N.VM.11 Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors. A.REI.5 Verify that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. A.REI.6 Solve systems of linear	Systems of Linear Equations (Substitution, Elimination, Matrices, Determinants)	Observation, in class discussion, practice problems, activities (kahoot, quizizz), assessments	Textbook, notes, Graphing Calculator

	equations algebraically and graphically. a. Limit to pairs of linear equations in two variables. (A1, M1) b. Extend to include solving systems of linear equations in three variables, but only algebraically. (A2, M3)			
	(+) N.VM.6 Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network. (+) N.VM.7 Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled. (+) N.VM.8 Add, subtract, and multiply matrices of appropriate dimensions. (+) N.VM.9 Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties. (+) N.VM.10 Understand that the zero and identity matrices play a role in matrix addition and multiplication analogous to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse. (+) N.VM.11 Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors. (+) A.REI.9 Find the inverse of a matrix if it exists and use it to solve systems of linear equations (using technology for matrices of dimension 3 × 3 or greater).	Matrix Algebra		Graphing Calculator, Textbook, notes
		*Partial Fraction Decomposition **Topic Covered in Advanced PreCalculus		Textbook, notes
	A.REI.7 Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. For example, find the points of intersection between the line y = −3x and the circle x^2 +	Systems of Nonlinear Equations		Textbook, notes

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	$y^2 = 3$.			
	A.CED.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.★ (A1, M1) A.REI.12 Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.	*Systems of Inequalities **Topic Covered in Advanced PreCalculus		Modeling problems, real life examples
2-3 weeks		Limits (Tables, Graphs, Algebraic Methods, One-sided, Continuous Functions)	Observation, in class discussion, practice problems, activities (kahoot, quizizz), assessments	Graphing Calculator
	F.IF.6 Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. ★ (A2, M3)	Tangent and Derivatives		Graphing Calculator
		Area and Integrals		Graphing Calculator
2-3 weeks	(+) A.SSE.4 Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. For example, calculate mortgage payments.★ F.IF.3 Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. For example, the Fibonacci sequence is defined recursively by f(0) = f(1) = 1, f(n + 1) = f(n) + f(n −	Sequences (General, Arithmetic and Geometric)	Observation, in class discussion, practice problems, activities (kahoot, quizizz), assessments	Modeling, Notes, Real life problems

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	1) for n ≥ 1. F.BF.1 Write a function that describes a relationship between two quantities.★ a. Determine an explicit expression, a recursive process, or steps for calculation from context. F.BF.2 Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.★			
		Mathematical Induction - Prove statements using Mathematical Induction		Textbook, notes
	(+) A.APR.5 Know and apply the Binomial Theorem for the expansion of (x + y)n in powers of x and y for a positive integer n, where x and y are any numbers. For example by using coefficients determined by Pascal's Triangle. The Binomial Theorem can be proved by mathematical induction or by a combinatorial argument.	The Binomial Theorem		Textbook, notes
1-2 weeks	S.CP.1 Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").★	Probability- Sets and Counting	Observation, in class discussion, practice problems	Textbook, notes, Modeling, Real Life application
	(+) S.CP.9 Use permutations and combinations to compute probabilities of compound events and solve problems.★	Permutations and Combinations		Textbook, notes, Real life application, Modeling
		Probability - Constructing Probability Models - Computing		Textbook, notes

		Probabilities of Equally Likely Outcomes - Use the Addition Rule to Find Probabilities - Use the Complement Rule to Find Probabilities		