Deptford Township School District

Course Name: College Math
Grade: Twelfth
Board Approved: September 2025

Range of Assessment Requirements

Quarter 1	Quarter 2
Tests – Essentials of Algebra, Systems of Equations Quizzes – Quiz 1.1 – 1.3, Quiz 1.4 – 1.6, Quiz 2.1-2.3, Quiz 2.4 Notebook Check Homework / Classwork / Misc – Notes for each topic, Homework to correspond with each topic, Daily Warm ups, Additional Practice sheets	Tests – Matrices, Polynomials Quizzes – Quiz 3.1-3.2, Quiz 3.3 – 3.4, Quiz 3.5, Quiz 4.1-4.4, Quiz 4.5-4.6 Notebook Check Homework / Classwork / Misc – Notes for each topic, Homework to correspond with each topic, Daily Warm ups, Additional Practice sheets
Quarter 3	Quarter 3
Tests – Quadratics, Trigonometric Ratios and Functions Quizzes – Quiz 5.1-5.3, Quiz 5.4, Quiz 6.1 – 6.2, Quiz 6.3-6.4 Homework / Classwork / Misc – Notes for each topic, Homework to correspond with each topic, Daily Warm ups, Additional Practice sheets	Tests – Probability, Exponential and Logarithmic Functions Quizzes – Quiz 7.1-7.2, Quiz 7.3-7.5, Quiz 8.1-8.2, Quiz 8.3-8.4, Quiz 8.5-8.6 Homework / Classwork / Misc – Notes for each topic, Homework to correspond with each topic, Daily Warm ups, Additional Practice sheets

Deptford Township School District Grading Scale

Test (consistent in number and quality)	**50%**
Quiz	**30%**
Homework / Classwork / Misc.	**20%**

	Chapter 1
Overarching Theme	Essentials of Algebra

	Acquisition (knowledge, skills needed to understand)	Meaning (Why are the students learning this)	Transfer (Evidence of Learning and Performance Tasks)
Power/Anchor Standards and Evidence of Learning **Non-negotiable** Suggested	- Patterns and Iterations - The Coordinate plane, Relations, and Functions - Linear Functions - One Step Equations - Multi-Step Equations - Solve Linear Inequalities	Newspapers and television news shows are the primary source for news information for people today. Both use tables, charts, graphs, and other types of graphics to engage their audience and communicate information effectively. This unit gives students a chance to see the mathematics behind these concepts.	Evidence of Learning : Students will show their understanding through classwork and exit slips throughout the class. They will show step-by-step understanding on their homework assignments based on each section. Quizzes and Tests will be provided for each topic to assess the students' understanding of skills. Performance Tasks: Students will be provided activities that practice real-world problem solving skills. For the chapter, the students may have a project-based task to complete on the topic.

Standards	F-IF.3 Recognize that sequences are functions sometimes defined recursively whose domain is a subset of the integers.

	F-IF.1 Understand that a function from one set to another assigns to each element of the domain exactly one element of the range. F-IF.7 Graph functions expressed symbolically and show key features of the graph. A-REI.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. S-ID.5 Summarize categorical data for two categories in two-way frequency tables. S_ID.1 Represent data with plots on the real number line.
Enduring Understanding	Students will develop a deep understanding of how patterns and iterations form the foundation of algebraic thinking. Through exploring the coordinate plane, relations, and functions, they will learn to represent and analyze relationships between variables. By working with linear functions and solving one-step and multi-step equations, students will strengthen their ability to manipulate expressions and understand equality. Finally, by solving linear inequalities, they will extend their problem-solving skills to represent and interpret constraints and ranges of possible solutions. These concepts together build a strong algebraic framework for modeling real-world situations and preparing for more advanced mathematical learning.
Essential Questions	What is a sequence? What makes a relation a function? What is the difference between the domain and range of a function? What are linear equations and what do their graphs look like? How are equations solved?
Differentiation and Support for Learners **Non-negotiable** Suggested (additions made after consensus at district PLC meetings)	**Enrichment (Compacting, Gifted and Talented, Student Readiness Levels)** FRECKLE Mathematicians Notebook – Foldables Resources by Chapter Book – Enrichment & Extensions Sections **Interventions (for at-risk, 504, Spec. Ed., ELL)** FRECKLE

	Lesson Tutorials Skills Review Handbook Dynamic Assessment and Progress Monitoring Tool **Student Grouping Strategies** Homogeneous Ability level Heterogeneous ability level Random
Resources **Non-negotiable** Suggested **(additions made after consensus at district PLC meetings)**	**Technology** Promethean Board Calculators Canvas Dynamic Classroom **Readings** Read sections of chapter as needed **Manipulatives/Lab Activity Resources** Foldable Notebook Algebra Tiles **Interdisciplinary Connections** **ELA** **Science** **SS**
Assessment **Non-negotiable** Suggested	**Formative (Assessment used by the individual teacher to gather feedback on student progress toward learning targets.)** Warm ups Exit slips

	Chapter 2

Overarching Theme	Systems of Equations		
Power/Anchor Standards and Evidence of Learning **Non-negotiable** Suggested	**Acquisition** (knowledge, skills needed to understand)	**Meaning** (Why are the students learning this)	**Transfer** (Evidence of Learning and Performance Tasks)
	- Systems of Equations - Solve by Substitution - Solve by Elimination - Systems of Inequalities	Tables and graphs are used to organize data about manufacturing and product development. Tables provide a way to organize numerical information. Many types of data are kept in regards to manufacturing. Companies are concerned with quality, performance, sales, shipping, and production quotas. Graphs are often used to show trends in sales and performance. This unit connects mathematical concepts to the theme of manufacturing and industry.	Evidence of Learning : Students will show their understanding through classwork and exit slips throughout the class. They will show step-by-step understanding on their homework assignments based on each section. Quizzes and Tests will be provided for each topic to assess the students' understanding of skills. Performance Tasks: Students will be provided activities that practice real-world problem solving skills. For the chapter, the students may have a project-based task to complete on the topic.
Standards	A-REI.5 Solve systems of linear equations in two or more variables. A-REI.6 Solve systems of linear equations exactly and approximately (e.g., with graphs and tables).		

	A–REI.7 Solve a system of linear equations. A–REI.8 Represent a system of linear equations as a matrix.
Enduring Understanding	Understanding systems of equations allows students to explore how multiple relationships interact within a given context. By solving systems, whether through substitution, elimination, or graphing, students will develop strategies to find common solutions that satisfy all equations in the system simultaneously. This concept emphasizes the idea that real–world problems often involve multiple variables that must be considered together, and students will learn how to analyze and solve such problems efficiently. Mastery of systems of equations provides the foundational skills needed for more complex problem–solving in algebra and beyond.
Essential Questions	What is a system of equations? How do you solve systems of equations?
Differentiation and Support for Learners **Non-negotiable** Suggested **(additions made after consensus at district PLC meetings)**	**Enrichment (Compacting, Gifted and Talented, Student Readiness Levels)** FRECKLE Mathematicians Notebook – Foldables Resources by Chapter Book – Enrichment & Extensions Sections **Interventions (for at–risk, 504, Spec. Ed., ELL)** FRECKLE Lesson Tutorials Skills Review Handbook Dynamic Assessment and Progress Monitoring Tool **Student Grouping Strategies** Homogeneous Ability level Heterogeneous ability level Random
Resources **Non-negotiable** Suggested **(additions made after consensus at district**	**Technology** Promethean Board Calculators Canvas Dynamic Classroom

PLC meetings)	
	Readings Read sections of chapter as needed **Manipulatives/Lab Activity Resources** Foldable Notebook Algebra Tiles **Interdisciplinary Connections** **ELA** **Science** **SS**
Assessment Non-negotiable Suggested	**Formative (Assessment used by the individual teacher to gather feedback on student progress toward learning targets.)** Warm ups Exit slips

	Chapter 3		
Overarching Theme	Matrices		
Power/Anchor Standards and Evidence of Learning Non-negotiable Suggested	**Acquisition** (knowledge, skills needed to understand)	**Meaning** (Why are the students learning this)	**Transfer** (Evidence of Learning and Performance Tasks)
	- Matrix operation - Multiplying Matrices - Determinant and Cramer's Rule - Identity and Inverse Functions	Students learn matrices because they provide a powerful, systematic way to represent and solve complex problems, particularly systems of linear equations. Matrices simplify the process of handling multiple equations	Evidence of Learning : Students will show their understanding through classwork and exit slips throughout the class. They will show step-by-step

	- Solving Systems Using Inverse Matrices	and variables simultaneously, making it easier to find solutions to real-world problems in fields such as economics, computer science, engineering, and physics.	understanding on their homework assignments based on each section. Quizzes and Tests will be provided for each topic to assess the students' understanding of skills. Performance Tasks: Students will be provided activities that practice real-world problem solving skills. For the chapter, the students may have a project-based task to complete on the topic.

Standards	A-REI.8 Solve systems of linear equations exactly and approximately (e.g., with graphs, tables, or matrices). A-REI.9 Represent a system of linear equations as a matrix. Solve the system using the inverse of the matrix. F-IF.4 Interpret the structure of expressions. F-BF.1 Build a function that models a relationship between two quantities. N-VM.4 Perform operations on matrices and use matrix algebra to solve systems of linear equations. N-VM.5 Understand the relationship between matrices and linear transformations.
Enduring Understanding	Students learn matrices because they serve as a powerful mathematical tool for representing and solving systems of linear equations. Matrices allow students to handle multiple equations and variables in a compact and organized way, making complex problems more manageable. Through the study of matrices, students develop an understanding of operations like addition, multiplication, and finding inverses, which are essential for solving real-world problems in fields such as

	engineering, computer science, economics, and physics.
Essential Questions	What is the role of matrices in solving systems of linear equations, and how do they simplify the process compared to traditional methods? How do matrix operations (addition, multiplication, and inversion) help in solving problems in algebra and real-world contexts? In what ways can matrices be used to represent real-world situations or problems, such as networks, data analysis, or transformations? What is the relationship between matrices and linear transformations, and how do they help us understand changes in space or data? How can matrix determinants and inverses be used to analyze and solve systems of equations, and why are they important in determining the solutions to a system?
Differentiation and Support for Learners Non-negotiable Suggested **(additions made after consensus at district PLC meetings)**	**Enrichment (Compacting, Gifted and Talented, Student Readiness Levels)** FRECKLE Mathematicians Notebook – Foldables Resources by Chapter Book – Enrichment & Extensions Sections **Interventions (for at-risk, 504, Spec. Ed., ELL)** FRECKLE Lesson Tutorials Skills Review Handbook Dynamic Assessment and Progress Monitoring Tool **Student Grouping Strategies** Homogeneous Ability level Heterogeneous ability level Random
Resources Non-negotiable Suggested	**Technology** Promethean Board Calculators

(additions made after consensus at district PLC meetings)	Canvas Dynamic Classroom **Readings** Read sections of chapter as needed **Manipulatives/Lab Activity Resources** Foldable Notebook Algebra Tiles **Interdisciplinary Connections** **ELA** **Science** **SS**
Assessment Non-negotiable Suggested	**Formative (Assessment used by the individual teacher to gather feedback on student progress toward learning targets.)** Warm ups Exit slips

	Chapter 4		
Overarching Theme	Polynomials		
Power/Anchor Standards and Evidence of Learning Non-negotiable Suggested	**Acquisition** (knowledge, skills needed to understand)	**Meaning** (Why are the students learning this)	**Transfer** (Evidence of Learning and Performance Tasks)
	- Add and Subtract Polynomials - Multiply by a Monomial	Polynomials are essential because they form the foundation for a wide range of	Evidence of Learning : Students will show their understanding

	- Divide and find Factors - Multiply Two Binomials - Review - Quiz - Factor Trinomials a = 0 - Factor Trinomials a > 0	mathematical concepts and real-world applications. They help students develop critical thinking, problem-solving, and analytical skills while providing a bridge to more advanced topics in mathematics and science. Understanding polynomials equips students with the tools they need to model, solve, and analyze problems in various fields, making them a crucial part of the learning process.	through classwork and exit slips throughout the class. They will show step-by-step understanding on their homework assignments based on each section. Quizzes and Tests will be provided for each topic to assess the students' understanding of skills. Performance Tasks: Students will be provided activities that practice real-world problem solving skills. For the chapter, the students may have a project-based task to complete on the topic.

<u>Standards</u>	A-APR.1 Understand that polynomials are expressions involving variables raised to whole-number exponents. A-APR.2 Perform arithmetic operations on polynomials. A-APR.3 Factor polynomials. A-APR.4 Use polynomial identities to solve problems. A-APR.5 Understand the relationship between the factors and solutions of a polynomial equation. F-IF.7 Graph polynomial functions, identifying zeros and using the degree of the function to identify end behavior.

	F–IF.8 Write polynomial functions in factored form. A–CED.3 Create and solve quadratic and other polynomial equations to model real–world situations.
Enduring Understanding	Students learn polynomials to develop a foundational understanding of how algebraic expressions work, how to solve polynomial equations, and how polynomials are used in real–world contexts. The study of polynomials prepares students for more advanced mathematical concepts, such as calculus and abstract algebra, and is essential in many fields, including science, economics, and engineering.
Essential Questions	What are polynomials, and how do their terms and structure affect their behavior? How do polynomial operations (addition, subtraction, multiplication) work, and how do they help us simplify complex expressions? How can factoring polynomials help in solving polynomial equations and finding their roots?
Differentiation and Support for Learners Non–negotiable Suggested (additions made after consensus at district PLC meetings)	**Enrichment (Compacting, Gifted and Talented, Student Readiness Levels)** FRECKLE Mathematicians Notebook – Foldables Resources by Chapter Book – Enrichment & Extensions Sections **Interventions (for at–risk, 504, Spec. Ed., ELL)** FRECKLE Lesson Tutorials Skills Review Handbook Dynamic Assessment and Progress Monitoring Tool **Student Grouping Strategies** Homogeneous Ability level Heterogeneous ability level Random
Resources Non–negotiable Suggested (additions made after consensus at district	**Technology** Promethean Board Calculators Canvas Dynamic Classroom

PLC meetings)	
	Readings Read sections of chapter as needed **Manipulatives/Lab Activity Resources** Foldable Notebook Algebra Tiles **Interdisciplinary Connections** **ELA** **Science** **SS**
Assessment Non-negotiable Suggested	**Formative (Assessment used by the individual teacher to gather feedback on student progress toward learning targets.)** Warm ups Exit slips

	Chapter 5		
Overarching Theme	Quadratics		
Power/Anchor Standards and Evidence of Learning Non-negotiable Suggested	**Acquisition** (knowledge, skills needed to understand)	**Meaning** (Why are the students learning this)	**Transfer** (Evidence of Learning and Performance Tasks)
	- Quadratic Functions - Factor and Graph - Quadratic Formula	We learn quadratic equations because they help us understand and solve problems involving curved (nonlinear) relationships. Quadratics appear in real life — from the path of a thrown object	Evidence of Learning : Students will show their understanding through classwork and exit slips throughout the class.

		to calculating areas and optimizing business decisions. Learning how to solve and graph them builds important skills in algebra, problem-solving, and critical thinking, and prepares us for advanced math like calculus.	They will show step-by-step understanding on their homework assignments based on each section. Quizzes and Tests will be provided for each topic to assess the students' understanding of skills. Performance Tasks: Students will be provided activities that practice real-world problem solving skills. For the chapter, the students may have a project-based task to complete on the topic.

Standards	A-REI.4 Solve quadratic equations in one variable. A-REI.7 Solve quadratic equations by using the quadratic formula. F-IF.7e Graph quadratic functions and analyze their key features: vertex, axis of symmetry, and x-intercepts (real solutions). A-CED.3 Create and solve quadratic equations to model real-world problems. F-IF.9 Analyze and interpret the relationship between the solutions of a quadratic equation and its graph.
Enduring Understanding	Students learn quadratic equations to understand how variables relate in curved (nonlinear) patterns. They explore different ways to solve them—like factoring and using the quadratic formula—and see how those solutions connect to graphs. Quadratic equations also help students solve real-world problems, like finding maximum heights or areas. By studying quadratics, students build important problem-solving skills and prepare for more advanced math.
Essential Questions	What defines a quadratic equation, and how does its structure impact the solutions and graph of the equation?

	How do the coefficients of a quadratic equation (particularly a, b, and c) affect the graph's shape, direction, and position? What is the connection between the solutions of a quadratic equation and the points where its graph intersects the x-axis? How can we solve a quadratic equation using the quadratic formula?
Differentiation and Support for Learners **Non-negotiable** Suggested **(additions made after consensus at district PLC meetings)**	**Enrichment (Compacting, Gifted and Talented, Student Readiness Levels)** FRECKLE Mathematicians Notebook – Foldables Resources by Chapter Book – Enrichment & Extensions Sections **Interventions (for at-risk, 504, Spec. Ed., ELL)** FRECKLE Lesson Tutorials Skills Review Handbook Dynamic Assessment and Progress Monitoring Tool **Student Grouping Strategies** Homogeneous Ability level Heterogeneous ability level Random
Resources **Non-negotiable** Suggested **(additions made after consensus at district PLC meetings)**	**Technology** Promethean Board Calculators Canvas Dynamic Classroom **Readings** Read sections of chapter as needed **Manipulatives/Lab Activity Resources** Foldable Notebook

	Algebra Tiles **Interdisciplinary Connections** ELA Science SS
Assessment Non-negotiable Suggested	**Formative (Assessment used by the individual teacher to gather feedback on student progress toward learning targets.)** Warm ups Exit slips

	Chapter 6		
Overarching Theme	Trigonometry		
Power/Anchor Standards and Evidence of Learning Non-negotiable Suggested	**Acquisition** (knowledge, skills needed to understand)	**Meaning** (Why are the students learning this)	**Transfer** (Evidence of Learning and Performance Tasks)
	- Basic Trigonometric Ratios - Solve Right Triangles - General Angles and Radian Measure - Trig Functions of any Angle	Students learn trigonometry to understand how angles and sides of triangles are related. It helps them solve real-world problems involving heights, distances, and waves. Trigonometry is also important for jobs in science, engineering, and technology, and it prepares students for more advanced math like calculus.	Evidence of Learning : Students will show their understanding through classwork and exit slips throughout the class. They will show step-by-step understanding on their homework assignments based on each section. Quizzes and Tests will be provided for each topic to assess the students' understanding of skills.

			Performance Tasks: Students will be provided activities that practice real-world problem solving skills. For the chapter, the students may have a project-based task to complete on the topic.
Standards	G.SRT.C.6 Understand through similarity that side ratios in right triangles define the trigonometric ratios sine, cosine, and tangent for acute angles. G.SRT.C.7 Explain and use the relationship between sine and cosine for complementary angles (the co-function identities). G.SRT.C.8 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problem-solving contexts.		
Enduring Understanding	Trigonometry helps students understand the relationship between angles and side lengths in triangles, especially right triangles. By exploring trigonometric ratios (sine, cosine, tangent) and functions, students learn how to model and solve real-world problems involving height, distance, rotation, and periodic patterns. It builds a bridge between geometry and algebra and prepares students for advanced topics in math and science, like physics, engineering, and calculus.		
Essential Questions	· What are the three basic trigonometric ratios? · How can you find the lengths and angle measures of a right triangle?		
Differentiation and Support for	**Enrichment (Compacting, Gifted and Talented, Student Readiness Levels)**		

Learners **Non-negotiable** Suggested **(additions made after consensus at district PLC meetings)**	FRECKLE Mathematicians Notebook – Foldables Resources by Chapter Book – Enrichment & Extensions Sections **Interventions (for at-risk, 504, Spec. Ed., ELL)** **FRECKLE** Lesson Tutorials Skills Review Handbook Dynamic Assessment and Progress Monitoring Tool **Student Grouping Strategies** Homogeneous Ability level Heterogeneous ability level Random
Resources **Non-negotiable** Suggested **(additions made after consensus at district PLC meetings)**	**Technology** Promethean Board Calculators Canvas Dynamic Classroom **Readings** Read sections of chapter as needed **Manipulatives/Lab Activity Resources** Foldable Notebook Algebra Tiles **Interdisciplinary Connections** **ELA** **Science** **SS**
Assessment	**Formative (Assessment used by the individual teacher to gather feedback on student progress toward learning**

Non-negotiable Suggested	**targets.)** Warm ups Exit slips

	Chapter 7		
Overarching Theme	Probability		
	Acquisition (knowledge, skills needed to understand)	**Meaning** (Why are the students learning this)	**Transfer** (Evidence of Learning and Performance Tasks)
Power/Anchor Standards and Evidence of Learning Non-negotiable Suggested	- The Fundamental Counting Principle and Permutations - Combinations and Binomial Theorem - An introduction to Probability - Probability of Compound Events - Probability of Independent and Dependent Events	We learn topics like the Fundamental Counting Principle and Permutations to help us efficiently count possible outcomes when order matters, which is useful in planning, decision-making, and creating codes or schedules. Combinations and the Binomial Theorem allow us to count selections where order doesn't matter and expand expressions, which are valuable in statistics, finance, and forming groups. An introduction to probability teaches us how to understand and measure chance and uncertainty, helping us make informed decisions in everyday situations like weather predictions or games. Learning about compound events helps us calculate the likelihood of multiple events happening together or	Evidence of Learning : Students will show their understanding through classwork and exit slips throughout the class. They will show step-by-step understanding on their homework assignments based on each section. Quizzes and Tests will be provided for each topic to assess the students' understanding of skills. Performance Tasks: Students will be provided activities that practice real-world problem solving skills. For the chapter, the students may have a project-based task to complete on the topic.

	separately, which is important in risk analysis and strategic planning. Finally, studying independent and dependent events shows us how the outcome of one event can affect another, a concept that's crucial in areas like medical testing, business decisions, and data interpretation. Together, these topics develop logical thinking and practical problem-solving skills that are widely applicable in real life.

Standards	7.SP.C.7 Developing uniform probability models and using lists, tables, tree diagrams for compound events
	7.SP.C.8 Finding probabilities of compound events using organized methods; includes understanding independent and dependent events
	7.SP.C.5 Understanding probability values between 0 and 1 as measures of likelihood
	7.SP.C.8 Focused on compound events and distinguishing between independent/dependent cases using trees, tables, etc.
	S–CP.A.1 Describing events in sample space, including "and," "or," and "not" — foundational for probability theory
	S–CP.A.2 Understanding independence through the multiplication rule; recognizing dependent events

Enduring Understanding	Understanding the principles of counting, permutations, combinations, and probability equips students with the ability to analyze and solve problems involving uncertainty and choice. By applying the Fundamental Counting Principle, permutations, and combinations, students learn how to efficiently calculate possible outcomes in both ordered and unordered situations. The Binomial Theorem extends this understanding to algebraic expressions and probability patterns. Through the study of probability, students gain insight into the likelihood of events, allowing them to make informed predictions and decisions. Exploring compound events, as well as independent and dependent events, deepens their ability to evaluate real-world situations where outcomes are interconnected. These concepts form a foundation for data analysis, critical thinking, and practical decision-making in everyday life and future academic or professional contexts.
Essential Questions	How can we determine the total number of possible outcomes in a situation without listing them all?
	How can permutations help us solve real-world problems involving arrangements and scheduling?
	When does order not matter in a selection, and how do we calculate the number of outcomes in those cases?
	How do combinations differ from permutations, and why is the distinction important?
	How does the Binomial Theorem connect algebraic expressions with patterns in probability or counting?
	What does probability tell us about the world, and how can we use it to make better decisions?
	How do we calculate the likelihood of an event, and what does that number mean?
	In what ways do randomness and patterns affect the outcome of everyday events?
	How do we determine the probability of two or more events happening together or separately?
	What strategies or tools can we use to organize and solve compound probability problems?
	How do compound events appear in real-life situations like games, experiments, or risk assessment?

	How can we tell if two events are independent or dependent, and why does it matter?
	How does the outcome of one event affect the probability of another?
	In what situations is understanding the relationship between events essential to making accurate predictions?
ferentiation and Support for Learners **Non-negotiable** Suggested dditions made after consensus at district PLC meetings)	**Enrichment (Compacting, Gifted and Talented, Student Readiness Levels)** FRECKLE Mathematicians Notebook – Foldables Resources by Chapter Book – Enrichment & Extensions Sections **Interventions (for at-risk, 504, Spec. Ed., ELL)** FRECKLE Lesson Tutorials Skills Review Handbook Dynamic Assessment and Progress Monitoring Tool **Student Grouping Strategies** Homogeneous Ability level Heterogeneous ability level Random
Resources **Non-negotiable** Suggested dditions made after consensus at district PLC meetings)	**Technology** Promethean Board Calculators Canvas Dynamic Classroom

	Readings Read sections of chapter as needed **Manipulatives/Lab Activity Resources** Foldable Notebook Algebra Tiles **Interdisciplinary Connections** **ELA** **Science** **SS**
<u>**Assessment**</u> **Non-negotiable** Suggested	**Formative (Assessment used by the individual teacher to gather feedback on student progress toward learning targets.)** Warm ups Exit slips

	Chapter 8		
<u>**Overarching Theme**</u>	Exponential and Logarithmic Functions		
<u>**Power/Anchor**</u> <u>**Standards**</u> <u>**and**</u> <u>**Evidence of Learning**</u> **Non-negotiable** Suggested	**Acquisition** (knowledge, skills needed to understand)	**Meaning** (Why are the students learning this)	**Transfer** (Evidence of Learning and Performance Tasks)
	- Exponential Growth - Exponential Decay - The Number e - Logarithmic Functions	Students learn exponential and logarithmic functions to understand and solve problems involving growth, decay, and repeated multiplication. These functions help	Evidence of Learning : Students will show their understanding through classwork and exit slips throughout the class.

	- Properties of Logs - Solving Exponential and Logarithmic Equations	model real-life situations like population changes, interest, and radioactive decay. They also build skills needed for higher math, science, and everyday decision-making.	They will show step-by-step understanding on their homework assignments based on each section. Quizzes and Tests will be provided for each topic to assess the students' understanding of skills. Performance Tasks: Students will be provided activities that practice real-world problem solving skills. For the chapter, the students may have a project-based task to complete on the topic.
Standards	F.LE.A.1.a: Prove that linear functions grow by equal differences over equal intervals, and exponential functions grow by equal factors over equal intervals. F.LE.A.1.b: Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. F.LE.A.1.c: Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. F.LE.A.2: Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (including reading these from a table). F.LE.B.5: Interpret the parameters in a linear or exponential function in terms of a context. F.LE.A.1.a: Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.		

	F.LE.A.1.b: Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. F.LE.A.1.c: Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. F.LE.A.2: Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (including reading these from a table). F.LE.B.5: Interpret the parameters in a linear or exponential function in terms of a context.
Enduring Understanding	Students understand that exponential functions describe processes that grow or decay at rates proportional to their current value, modeling real-world phenomena like population growth, radioactive decay, and compound interest. Logarithmic functions serve as the inverse of exponential functions, allowing us to solve equations where the unknown is an exponent. Together, these functions provide powerful tools for analyzing change, solving complex problems, and making predictions in mathematics, science, and everyday life.
Essential Questions	What distinguishes exponential growth and decay from linear change? What is the relationship between exponential and logarithmic functions? How can logarithms be used to solve equations involving exponential expressions? What does the base of an exponential or logarithmic function represent?
Differentiation and Support for Learners **Non-negotiable** Suggested (additions made after consensus at district PLC meetings)	**Enrichment (Compacting, Gifted and Talented, Student Readiness Levels)** FRECKLE Mathematicians Notebook – Foldables Resources by Chapter Book – Enrichment & Extensions Sections **Interventions (for at-risk, 504, Spec. Ed., ELL)** FRECKLE Lesson Tutorials Skills Review Handbook

	Dynamic Assessment and Progress Monitoring Tool **Student Grouping Strategies** Homogeneous Ability level Heterogeneous ability level Random
Resources Non-negotiable Suggested **(additions made after consensus at district PLC meetings)**	**Technology** Promethean Board Calculators Canvas Dynamic Classroom **Readings** Read sections of chapter as needed **Manipulatives/Lab Activity Resources** Foldable Notebook Algebra Tiles **Interdisciplinary Connections** **ELA** **Science** **SS**
Assessment Non-negotiable Suggested	**Formative (Assessment used by the individual teacher to gather feedback on student progress toward learning targets.)** Warm ups Exit slips