Pine Hill Public Schools

Content Area:	**Mathematics**		
Course Title/ Grade Level:	**Math Grade 7**		
Unit 1:	**Ratios and Proportional Relationships**	**Duration:**	**40 days**
Unit 2:	**The Number System**	**Duration:**	**34 days**
Unit 3:	**Expressions and Equations**	**Duration:**	**40 days**
Unit 4:	**Geometry**	**Duration:**	**36 days**
Unit 5:	**Statistics and Probability**	**Duration:**	**32 days**
Date Revision Approved:	September 2018		
Initial BOE Approval Date:	August 15, 2017		

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Ratios and Proportional Relationships		**Unit 1**
Course or Grade Level: 7	**Length of Time:** 40 days	
Pacing	Battery Pre-Assessment administration: 1 day Ratios and Proportional Reasoning: 18 instructional days + 2 day for re-teaching/enrichment + 1 days for summative assessment Percents: 16 instructional days + 2 day for re-teaching/enrichment + 1 day for summative assessment	
Essential Questions	● How can you show that two objects are proportional? ● How can percent help you understand situations involving money?	
Content	● Rates and Unit Rates ● Complex Fractions ● Proportional and Nonproportional Relationships ● Finding Percents using the Percent Proportion and Percent Equation ● Markups and markdowns, percent of change ● Simple Interest	
Skills	● Find unit rates ● Simplify complex fractions ● Convert rates using unit rates and dimensional analysis ● Identify proportional and nonproportional relationships ● Identify proportional relationships by graphing on the coordinate plane ● Use proportions to solve problems ● Represent and identify constant rates of change. ● Identify slope using tables and graphs ● Use direct variation to solve problems	
Assessments	● Homework ● Classwork ● Quizzes ● Chapter Tests 1-2 ● ALEKS	
Interventions / differentiated instruction	● Readiness assessments to generate study plans, as necessary ● Readiness lessons to address weaknesses in prior knowledge, as necessary ● Lesson interventions to address weaknesses throughout the units, as necessary ● Lesson materials available online in both English and Spanish ● Homework-Individualized to needs of student ● Enrichment/21st Century Career activities available as needed/for extra credit	
Inter-disciplinary Connections	● Online Technology Tools ● Math Literacy ● Financial Literacy ● Career Connections/21st Century Skills	
Lesson resources / activities	● Online tools/Manipulatives ● Student Edition ● Homework and Assessments ● Inquiry Labs ● Chapter Review ● Performance Task ● ALEKS ● connectED.mcgraw-hill.com	

New Jersey Student Learning Standards for Mathematics	
Standard(s) for Mathematical Practice: 1,2,3,4,5,6,7,8,9	**Standard(s) for Mathematical Content: 7.RP.1, 7.RP.2, 7.RP.2a, 7.RP.2b, 7.RP.2c, 7.RP.2c, 7.RP.2d, 7.RP.3, 7.NS.3, 7.EE.2, 7.EE.3**
Math Practices: 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.	**Domain: Ratios and Proportional Relationships** **Cluster: Analyze proportional relationships and use them to solve real-world and mathematical problems.** CCSS.Math.Content.7.RP.A.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction $^{1/2}/_{1/4}$ miles per hour, equivalently 2 miles per hour*. CCSS.Math.Content.7.RP.A.2 Recognize and represent proportional relationships between quantities. ● CCSS.Math.Content.7.RP.A.2a Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. ● CCSS.Math.Content.7.RP.A.2b Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships. ● CCSS.Math.Content.7.RP.A.2c Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn*. ● CCSS.Math.Content.7.RP.A.2d Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate. ● CCSS.Math.Content.7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error. **Domain: The Number System** **Cluster: Apply and extend previous understandings of operations with fractions.** ● CCSS.Math.Content.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers. **Domain: Geometry**

	Cluster: Draw construct, and describe geometrical figures and describe the relationships between them. CCSS.Math.Content.7.G.A.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.

21st Century Themes							
x	Global Awareness:	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy	x	Health Literacy
21st Century Skills							
x	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication and Collaboration		Information Literacy
	Media Literacy	x	ICT Literacy	x	Life and Career Skills		

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.		
Strand:A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.	**Content Statement:** Understand and use technology systems.	**Indicator:** 8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools.
E: Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.	Plan strategies to guide inquiry. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media. Evaluate and select information sources and digital tools based on the appropriateness for specific tasks. Process data and report results.	8.1.8.E.1 Effectively use a variety of search tools and filters in professional public databases to find information to solve a real world problem.

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: The Number System		**Unit 2**
Course or Grade Level: 7	**Length of Time: 34 Days**	
Pacing	Integers: 10 instructional days + 2 day for re-teaching/enrichment + 2 day for summative assessment Rational Numbers: 16 instructional days + 2 day for re-teaching/enrichment + 2 day for summative assessment	
Essential Questions	● What happens when you add, subtract, multiply, and divide integers? ● What happens when you add, subtract, multiply, and divide fractions?	
Content	● Integers and Absolute Value ● Adding, Subtracting, Multiplying, and Dividing Integers ● Rational Numbers on the Number Line ● Terminating and Repeating Decimals ● Compare and Order Rational Numbers ● Add and Subtract Fractions and Mixed Numbers ● Multiply and Divide Fractions ● Convert Between Systems	
Skills	● Read and Write integers, and find the absolute value of an integer ● Add, Subtract, Multiply, and Divide Integers ● Write fractions as terminating or repeating decimals ● Compare and order rational numbers ● Add and subtract rational numbers expressed as fractions ● Add and Subtract mixed numbers ● Multiply and divide fractions and mixed numbers ● Convert units of measure between the customary and metric systems	
Assessments	● Homework ● Classwork ● Quizzes ● Chapter Tests 3-4 ● ALEKS	
Interventions / differentiated instruction	● Readiness assessments to generate study plans, as necessary ● Readiness lessons to address weaknesses in prior knowledge, as necessary ● Lesson interventions to address weaknesses throughout the units, as necessary ● Lesson materials available online in both English and Spanish ● Homework-Individualized to needs of student ● Enrichment/21st Century Career activities available as needed/for extra credit	
Inter-disciplinary Connections	● Online Technology Tools ● Math Literacy ● Financial Literacy ● Career Connections/21st Century Skills	
Lesson resources / activities	● Online tools/Manipulatives ● Student Edition ● Homework and Assessments ● Inquiry Labs ● Chapter Review ● Performance Task ● ALEKS ● connectED.mcgraw-hill.com	

New Jersey Student Learning Standards for Mathematics	
Standard(s) for Mathematical Practice: 1,2,3,4,5,6,7,8	**Standards() for Mathematical Content: 7.NS.1, 7.NS.2, 7.NS.3, 7.EE, 7.RP.3**
Math Practices: 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.	Domain: The Number System Cluster: Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers. CCSS.Math.Content.7.NS.A.1 Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. ● CCSS.Math.Content.7.NS.A.1a Describe situations in which opposite quantities combine to make 0. *For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged*. ● CCSS.Math.Content.7.NS.A.1b Understand $p + q$ as the number located a distance $\|q\|$ from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts. ● CCSS.Math.Content.7.NS.A.1c Understand subtraction of rational numbers as adding the additive inverse, $p – q = p + (–q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts. ● CCSS.Math.Content.7.NS.A.1d Apply properties of operations as strategies to add and subtract rational numbers. CCSS.Math.Content.7.NS.A.2 Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. ● CCSS.Math.Content.7.NS.A.2a Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(–1)(–1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts. ● CCSS.Math.Content.7.NS.A.2b Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then $–(p/q) = (–p)/q$

	= $p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts. ● CCSS.Math.Content.7.NS.A.2c Apply properties of operations as strategies to multiply and divide rational numbers. ● CCSS.Math.Content.7.NS.A.2d Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats. ● CCSS.Math.Content.7.NS.A.3 Solve real-world and mathematical problems involving the four operations with rational numbers. Domain: Expressions and Equations Cluster: Use properties of operations to generate equivalent expressions. Solve real-life and mathematical problems using numerical and algebraic expressions and equations. ● CCSS.Math.Content.7.EE.A.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."* Cluster: Solve real-life and mathematical problems using numerical and algebraic expressions and equations. CCSS.Math.Content.7.EE.B.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation*. Domain: Ratios and Proportional Relationships Cluster: Analyze proportional relationships and use them to solve real-world and mathematical problems.

	• CCSS.Math.Content.7.RP.A.3 Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.

21st Century Themes							
x	Global Awareness	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy	x	Health Literacy
21st Century Skills							
x	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication and Collaboration		Information Literacy
	Media Literacy	x	ICT Literacy	x	Life and Career Skills		

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Strand:A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.	**Content Statement:**Understand and use technology systems.	**Indicator:**8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools.
B. Creativity and Innovation: Students demonstrate creative thinking, construct knowledge and develop innovative products and process using technology.	Apply existing knowledge to generate new ideas, products, or processes. Create original works as a means of personal or group expression.	8.1.P.B.1 Create a story about a picture taken by the student on a digital camera or mobile device.
C. Communication and Collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.	Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media. Communicate information and ideas to multiple audiences using a variety of media and formats. Develop cultural understanding and global awareness by engaging with learners of other cultures.	8.1.P.C.1 Collaborate with peers by participating in interactive digital games or activities.

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Expressions and Equations		Unit 3
Course or Grade Level: 7	Length of Time: 40 Days	
Pacing	Expressions: 16 instructional days + 1 day for re-teaching/enrichment + 1 day for summative assessment Equations and Inequalities: 16 instructional days + 1 day for re-teaching/enrichment + 1 day for summative assessment	
Essential Questions	● How can you use numbers and symbols to represent mathematical ideas? ● What does it mean to say that two quantities are equal?	
Content	● Algebraic Expressions ● Sequences ● Properties of Operations ● The Distributive Property ● Simplify Algebraic Expressions ● Add and Subtract Linear Expressions ● Factor Linear Expressions ● Solve one-step addition and subtraction equations ● Multiplication and Division Equations ● Solve Equations with Rational Coefficients ● Solve two-step equations ● Solve inequalities by addition or subtraction ● Solve inequalities by multiplication or Division ● Solve two-step inequalities	
Skills	● Evaluate simple algebraic equations ● Describe the relationships and extend terms in arithmetic sequences ● Identify and use mathematical properties to simplify algebraic expressions ● Apply the distributive property to rewrite algebraic expressions ● Simplify algebraic expressions ● Add and subtract linear expressions ● Read and write integers and find the absolute value of an integer ● Solve addition and subtraction equations ● Solve one-step multiplication and division equations ● Solve one-step equations with rational coefficients ● Solve two-step equations ● Solve two-step equations of the form $p(x + q) = r$ ● Solve inequalities by using the addition and subtraction properties of inequality ● Solve inequalities by using the multiplication or division properties of inequality ● Model and solve two-step inequalities and represent the solution on the number line. ●	
Assessments	● Homework ● Classwork ● Quizzes ● Topics Tests 5-6 ● ALEKS	

Interventions / differentiated instruction	● Readiness assessments to generate study plans, as necessary ● Readiness lessons to address weaknesses in prior knowledge, as necessary ● Lesson interventions to address weaknesses throughout the units, as necessary ● Lesson materials available online in both English and Spanish ● Homework-Individualized to needs of student ● Enrichment/21st Century Career activities available as needed/for extra credit
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New Jersey Student Learning Standards for Mathematics	
Standard(s) for Mathematical Practice: 1,3,4,5,6,7	**Standard(s) for Mathematical Content: 7.EE.1, 7.EE.2, 7.NS.3, 7.EE.4**
Math Practices: 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.	Domain: Expressions and Equations Cluster: Use properties of operations to generate equivalent expressions ● CCSS.Math.Content.7.EE.A.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. ● CCSS.Math.Content.7.EE.A.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, a + 0.05a = 1.05a means that "increase by 5%" is the same as "multiply by 1.05."* Cluster: Solve real-life and mathematical problems using numerical and algebraic expressions and equations ● CCSS.Math.Content.7.EE.B.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation*.

	● CCSS.Math.Content.7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. ● CCSS.Math.Content.7.EE.B.4a Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. *For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?* CCSS.Math.Content.7.EE.B.4b Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.*

21st Century Themes

x	Global Awareness:	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy

21st Century Skills

x	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication and Collaboration	x	Information Literacy
	Media Literacy	x	ICT Literacy	x	Life and Career Skills		

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.

Strand:A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations. A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations	**Content Statement:**Understand and use technology systems. Select and use applications effectively and productively.	**Indicator:**8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools. 8.1.8.A.3 Use and/or develop a simulation that provides an environment to solve a real world problem or theory.

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Geometry		Unit 4
Course or Grade Level: 7	Length of Time: 36 Days	
Pacing	Geometric Figures: 14 instructional days + 1 day for re-teaching/enrichment + 1 day for summative assessment Measuring Figures: 18 instructional days + 1 day for re-teaching/enrichment + 1 day for summative assessment	
Essential Questions	● How does geometry help us describe real-world objects? ● How do measurements help you describe real-world objects?	
Content	● Classifying Angles ● Complementary and Supplementary Angles ● Triangles ● Scale Drawings ● Draw Three-Dimensional Figures ● Cross Sections ● Circumference ● Area of Circles ● Area of Composite Figures ● Volume of Prisms ● Volume of Pyramids ● Nets of Three-Dimensional Figures ● Surface area of Prisms ● Surface area of Pyramids ● Volume and Surface Area of Composite Figures	
Skills	● Classify angles and identify vertical and adjacent angles ● Identify pairs of supplementary and complementary angles ● Identify and classify triangles and find missing angle measures ● Solve problems involving scale drawings ● Draw three-dimensional figures given the top, side, and front views ● Identify and draw three-dimensional figures ● Find the circumference of a circle ● Find the area of circles ● Find the area of composite figures ● Find the volume of prisms and pyramids ● Find the surface area of prisms and pyramids ● Find the volume and surface area of a composite figure	
Assessments	● Homework ● Classwork ● Quizzes ● Chapter Tests 7-8 ● ALEKS	
Interventions / differentiated instruction	● Readiness assessments to generate study plans, as necessary ● Readiness lessons to address weaknesses in prior knowledge, as necessary ● Lesson interventions to address weaknesses throughout the units, as necessary ● Lesson materials available online in both English and Spanish ● Homework-Individualized to needs of student ● Enrichment/21st Century Career activities available as needed/for extra credit	
Inter-disciplinary Connections	● Online Technology Tools ● Math Literacy ● Financial Literacy ● Career Connections/21st Century Skills	

Lesson resources / activities	• Online tools/Manipulatives • Student Edition • Homework and Assessments • Inquiry Labs • Chapter Review • Performance Task • ALEKS • connectED.mcgraw-hill.com

New Jersey Student Learning Standards for Mathematics

Standard(s) for Mathematical Practice: 1,2,3,4,5,6,7	**Standards() for Mathematical Content: 7.G.1, 7.G.2, 7.G.3, 7.G.5, 7.G.4, 7.G.6**
Math Practices: 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.	Domain: Geometry Cluster: Draw construct, and describe geometrical figures and describe the relationships between them. • CCSS.Math.Content.7.G.A.2 Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. • CCSS.Math.Content.7.G.A.3 Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. Cluster: Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. • CCSS.Math.Content.7.G.B.4 Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. • CCSS.Math.Content.7.G.B.5 Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. • CCSS.Math.Content.7.G.B.6 Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.

21st Century Themes

x	Global Awareness:	x	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
21st Century Skills							
x	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication and Collaboration	x	Information Literacy
	Media Literacy	x	ICT Literacy	x	Life and Career Skills		

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Strand: A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.	**Content Statement:** Understand and use technology systems.	**Indicator:** 8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools.
E: Research and Information Fluency: Students apply digital tools to gather, evaluate, and use information.	Plan strategies to guide inquiry. Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media. Evaluate and select information sources and digital tools based on the appropriateness for specific tasks. Process data and report results.	8.1.8.E.1 Effectively use a variety of search tools and filters in professional public databases to find information to solve a real world problem.

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Probability and Statistics		Unit 5
Course or Grade Level: 7	Length of Time: 32 Days	
Pacing	Probability: 17 instructional days + 1 day for re-teaching/enrichment + 1 day for summative assessment Statistics: 18 instructional days + 1 day for re-teaching/enrichment + 1 day for summative assessment	
Essential Questions	● How can you predict the outcome of future events? ● How do you know which type of graph to use when displaying data?	
Content	● Probability of simple events ● Theoretical and Experimental probability ● Probability of compound events ● Simulations ● Fundamental counting principle ● Permutations ● Independent and Dependent Events ● Make predictions ● Unbiased and biased samples ● Misleading graphs and statistics ● Compare populations ● Select an appropriate display	
Skills	● Find the probability of a simple event and its complement ● Find and compare theoretical and Experimental probabilities ● Find probabilities of compound events ● Perform probability simulations to model real world situations involving uncertainty ● Use multiplication to count the number of outcomes and find probabilities ● Find the number of permutations of a set of objects and find probabilities ● Explore and find the probability of dependent and independent events ● Predict actions of a larger group by using a sample ● Determine whether sampling methods are valid ● Identify misleading graphs and statistics ● Solve problems by using a graph ● Compare two populations ● Select, organize, and construct appropriate data displays	
Assessments	● Homework ● Classwork ● Quizzes ● Chapter Tests 9-10 ● ALEKS	
Interventions / differentiated instruction	● Readiness assessments to generate study plans, as necessary ● Readiness lessons to address weaknesses in prior knowledge, as necessary ● Lesson interventions to address weaknesses throughout the units, as necessary ● Lesson materials available online in both English and Spanish ● Homework-Individualized to needs of student ● Enrichment/21st Century Career activities available as needed/for extra credit	

Inter-disciplinary Connections	● Online Technology Tools ● Math Literacy ● Financial Literacy ● Career Connections/21st Century Skills
Lesson resources / activities	● Online tools/Manipulatives ● Student Edition ● Homework and Assessments ● Inquiry Labs ● Chapter Review ● Performance Task ● ALEKS ● connectED.mcgraw-hill.com

New Jersey Student Learning Standards for Mathematics	
Standard(s) for Mathematical Practice: 1,3,4,5,6,7,8	**Standards() for Mathematical Content: 7.SP.5, 7, 7a, 7b,8b,8c**
Math Practices: 1. Make sense of problems and persevere in solving them. 2. Reason abstractly and quantitatively. 3. Construct viable arguments and critique the reasoning of others. 4. Model with mathematics. 5. Use appropriate tools strategically. 6. Attend to precision. 7. Look for and make use of structure. 8. Look for and express regularity in repeated reasoning.	Domain: Statistics and Probability Cluster: Use random sampling to draw inferences about a population CCSS.Math.Content.7.SP.A.1 Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. CCSS.Math.Content.7.SP.A.2 Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.* Cluster: Draw informal comparative inferences about two populations CCSS.Math.Content.7.SP.B.3 Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. *For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable*. CCSS.Math.Content.7.SP.B.4 Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. *For example, decide whether the words in a chapter of a*

			seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book				
21st Century Themes							
x	Global Awareness:		Financial, Economic, Business, and Entrepreneurial Literacy	x	Civic Literacy	x	Health Literacy
21st Century Skills							
x	Creativity and Innovation	x	Critical Thinking and Problem Solving	x	Communication and Collaboration		Information Literacy
x	Media Literacy	x	ICT Literacy	x	Life and Career Skills		
8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.							
Strand:A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations. A. Technology Operations and Concepts: Students demonstrate a sound understanding of technology concepts, systems and operations.			**Content Statement:**Understand and use technology systems. Select and use applications effectively and productively.		**Indicator:**8.1.8.A.1 Demonstrate knowledge of a real world problem using digital tools. 8.1.8.A.4 Graph and calculate data within a spreadsheet and present a summary of the results		