

Pine Hill Public Schools Curriculum

Content Area:	Mathematics		
Course Title/ Grade Level:	Math Applications/11th		
Unit 1:	Properties of Real Numbers Quizzes 1, 2, 3, 4	Month:	September/October
Unit 2:	Geometry – Polygons & Parallel Lines Quizzes 5, 6	Month:	October/November
Unit 3:	Geometry – Tessellations & Transformations, Pythagorean Theorem Quizzes 7, 8, 9	Month:	November/December
Unit 4:	Geometry – Conversions, Area, Perimeter, Volume, Trig Functions Quizzes 10, 11, 12	Month:	December/January
Unit 5:	Data Analysis – Graphs Quizzes 13, 14	Month:	February
Unit 6:	Probability – Measures of Central Tendency, Quizzes 15, 16	Month:	February/ March
Unit 7:	Probability – Permutations & Combinations Quizzes 17, 18	Month:	March
Unit 8:	Algebra – Equations, Patterns, Sequences Quizzes 19, 20	Month:	April
Unit 9:	Algebra – Functions, Systems of Equations, Quadratic Equations Quizzes 21, 22, 23, 24	Month:	April/May
Unit 10:	Algebra – Polynomials Quizzes 25, 26	Month:	June
Date Created or Revised:	11/18/2013		
BOE Approval Date:	08/2012 with revisions on 12/19/2013		

**Pine Hill Public Schools
Curriculum**

Unit Title: Properties of Real Numbers		Unit #: 1
Course or Grade Level: Math Applications/11th and 12th Grade		Length of Time: 5 weeks
Date Created: 11/18/2013		BOE Approval Date:
Pacing	Week 1 Rational & Irrational Numbers Week 2 Properties of Real Numbers Week 3 Matrices, Ratio and Proportion Week 4 Tolerance Limits Week 5 Estimation	
Essential Questions	<ul style="list-style-type: none"> • What is the difference between rational & irrational numbers? • How do number properties assist in computation? • Is estimation more appropriate than finding an exact answer? 	
Content	<ul style="list-style-type: none"> • Fractions & Decimals • Order of Operations • Exponents • Multiples & Factors • Prime Numbers • Scientific Notation 	
Skills	<ul style="list-style-type: none"> • Identify rational and irrational numbers • Express numbers as fractions or decimals • Use Order of Operations to solve problems • Use rules of exponents to solve problems • Solve problems using factors & multiples • Demonstrate knowledge of properties of numbers • Interpret matrices • Express numbers in scientific notation • Use ratios & proportions to solve word problems • Find percent of error and tolerance limit of sets of data • Use estimation to solve word problems 	
Math Skills/ Science Processes	<ul style="list-style-type: none"> • Convert fractions and decimals • Factor numbers into primes • Finding percentages • Construct matrices 	
Assessments	<ul style="list-style-type: none"> • Anecdotal Records • Teacher Observations • Question & Answer • Worksheets • Quizzes • Benchmark Tests at end of each marking period 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Whole group, small group, and individual instruction • Quality work over quantity work • Workload may vary according to student's individual levels • After school tutorial 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Math • Economics • Financial Literacy • English 	

Lesson resources / Activities	<ul style="list-style-type: none"> • SmartBoard • Mathematic Coach Workbook – Pages 17 - 65 • Teacher Generated Worksheets • Websites • NJ Department of Education website 						
Common Core State Standards							
Grade or Conceptual Category (HS only): Number and Quantity							
Domain (name and #): The Real Number System – N-RN Quantities – N-Q Vector and Matrix Quantities – N-VM							
Cluster(s):				Standard #			
Extend the properties of exponents to rational exponents Reason quantitatively and use units to solve problems Perform operations on matrices and use matrices in application				N-RN 1, N-RN 2, N-RN 3 N-Q 1, N-Q 3 N-VM 6, N-VM 7, N-VM 8, N-VM 9			
<u>21st Century Themes</u>							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
<u>21st Century Skills</u>							
	Creativity and Innovation		Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

**Pine Hill Public Schools
Curriculum**

Unit Title: Geometry – Polygons & Parallel Lines		Unit #: 2
Course or Grade Level: Math Applications/11th and 12th Grade		Length of Time: 4 weeks
Date Created: 11/18/2013		BOE Approval Date:
Pacing	Week 1 Polygons and Maps Week 2 Pythagorean Theorem Week 3 Parallel Lines Week 4 Triangle Inequality Theorem	
Essential Questions	<ul style="list-style-type: none"> • How do you find the number of degrees in each angle of a polygon? • How does the Pythagorean Theorem assist in solving real-world problems? • How can you determine if the measure of three sticks will form a triangle? 	
Content	<ul style="list-style-type: none"> • Diagonals of polygons • Sum of the angles of polygons • Maps of figures • Right triangles • Angle measures of parallel lines • Making triangles 	
Skills	<ul style="list-style-type: none"> • Find the number of triangles contained in a polygon • Find the number of degrees of angles in a polygon • Determine the shape of a figure if given a map of the figure • Find the missing sides of a right triangle • Find the angle measures when parallel lines are cut by a transversal • Determine if three lengths can form a triangle 	
Math Skills/ Science Processes	<ul style="list-style-type: none"> • The number of degrees in a triangle • The number of sides and angles in different types of polygons • The different classifications of angles formed by parallel lines cut by a transversal • The concepts of greater than and less than with regards to making a triangle. 	
Assessments	<ul style="list-style-type: none"> • Anecdotal Records • Teacher Observations • Question & Answer • Worksheets • Quizzes • Benchmark Tests at end of each marking period 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Whole group, small group, and individual instruction • Quality work over quantity work • Workload may vary according to student's individual levels • After school tutorial 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Math • Economics • Financial Literacy • English 	
Lesson resources / Activities	<ul style="list-style-type: none"> • SmartBoard • Mathematic Coach Workbook – Pages 68 – 83 • Teacher Generated Worksheets • Websites • NJ Department of Education website 	

Common Core State Standards

Grade or Conceptual Category (HS only): Geometry

Domain (name and #): Congruence – G-CO

Cluster(s): **Standard #**

Congruence G-CO 1, G-CO 3, G-CO 4, G-CO 9, G-CO 10, G-CO 11

21st Century Themes

	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
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21st Century Skills

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

**Pine Hill Public Schools
Curriculum**

Unit Title: Geometry – Tessellations & Transformations, Pythagorean Theorem		Unit #: 3
Course or Grade Level: Math Applications/11th and 12th Grade		Length of Time: 4 weeks
Date Created: 11/18/2013		BOE Approval Date:
Pacing	Week 1 Tessellations Week 2 Central and Inscribed Angles Week 3 Transformations Week 4 Vectors	
Essential Questions	<ul style="list-style-type: none"> • How can you determine if a figure will tessellate? • What is the difference between a central angle and an inscribed angle? • How can we use vectors to solve a real-world problem? 	
Content	<ul style="list-style-type: none"> • Polygons and tessellation • Circles and their parts • Lines of symmetry • Midpoint of a line • Distance Formula • Slope 	
Skills	<ul style="list-style-type: none"> • Find the degree measures of angles of a polygon • Finding measures of central angles • Finding the measures of inscribed angles • Transform figures on a coordinate plane • Use formulas to find the midpoint of a line on a coordinate plane • Use the distance formula to find the length of a line on a coordinate plane • Find the slope of a line using the Pythagorean Theorem 	
Math Skills/ Science Processes	<ul style="list-style-type: none"> • Understand the relationship between angle measures and the shape of the polygon • Understand the various transformation and how the coordinates change • Find the square root of a number 	
Assessments	<ul style="list-style-type: none"> • Anecdotal Records • Teacher Observations • Question & Answer • Worksheets • Quizzes • Benchmark Tests at end of each marking period 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Whole group, small group, and individual instruction • Quality work over quantity work • Workload may vary according to student’s individual levels • After school tutorial 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Math • Economics • Financial Literacy • English 	
Lesson resources / Activities	<ul style="list-style-type: none"> • SmartBoard • Mathematic Coach Workbook – Pages 90 – 172 • Teacher Generated Worksheets • Websites • NJ Department of Education website 	
Common Core State Standards		
Grade or Conceptual Category (HS only): Geometry		

Domain (name and #): Congruence – G-CO							
G-SRT							
G-C							
Cluster(s):				Standard #			
Experiment with transformation in the plane Similarity, right triangles, and trigonometry Circles				G-CO 4, G-CO 5, G-CO 13 G-SRT 1b, G-SRT 2, G-SRT 8 G-C 2, G-C 3			
<u>21st Century Themes</u>							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
<u>21st Century Skills</u>							
	Creativity and Innovation		Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

**Pine Hill Public Schools
Curriculum**

Unit Title: Geometry – Conversions, Area, Perimeter, Volume, Trig Functions		Unit #: 4
Course or Grade Level: Math Applications/11th and 12th Grade		Length of Time: 4 weeks
Date Created: 11/18/2013		BOE Approval Date:
Pacing	Week 1 Triangles and Quadrilaterals Week 2 Circles Week 3 Prisms Week 4 Cylinders, Cones, and Spheres	
Essential Questions	<ul style="list-style-type: none"> • What is the relationship between area and perimeter of a figure? • How can you find the area of a circle when given the circumference of that circle? • What is the relationship between the volume of a cone and the volume of a cylinder with the same radius & height? 	
Content	<ul style="list-style-type: none"> • Area and Perimeter of Triangles and Quadrilaterals • Area and Circumference of Circles • Surface Area and Volume of Prisms • Surface Area and Volume of Spheres 	
Skills	<ul style="list-style-type: none"> • Multiplying numbers • Exponents • Drawing figures • Applying formulas 	
Math Skills/ Science Processes	<ul style="list-style-type: none"> • Understand the relationship between angle measures and the shape of the polygon • Understand the various transformation and how the coordinates change • Find the square root of a number 	
Assessments	<ul style="list-style-type: none"> • Anecdotal Records • Teacher Observations • Question & Answer • Worksheets • Quizzes • Benchmark Tests at end of each marking period 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Whole group, small group, and individual instruction • Quality work over quantity work • Workload may vary according to student's individual levels • After school tutorial 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Math • Economics • Financial Literacy • English 	
Lesson resources / Activities	<ul style="list-style-type: none"> • SmartBoard • Mathematic Coach Workbook – Pages 173 – 198 • Teacher Generated Worksheets • Websites • NJ Department of Education website 	
Common Core State Standards		
Grade or Conceptual Category (HS only): Geometry		
Domain (name and #): Congruence – G-CO Similarity, Right Triangles, and trigonometry – C-SRT Circles – G-C		

Expressing Geometric Properties with equations – G-GPE
Geometric measurement and dimension – G-GMD

Cluster(s):	Standard #
Experiment with transformations in the plane	G-CO 5
Understand similarity in terms of similarity transformations	G-SRT 5, G-SRT 6, G-SRT 7, G-SRT 8
Understand and apply theorems about circles	G-C 2, G-C 8,
Translate between the geometric description and the equation for a conic section	G-GPE 7
Explain volume formulas and use them to solve problems	G-GMD 1

21st Century Themes

Global Awareness	Financial, Economic, Business, and Entrepreneurial Literacy	Civic Literacy	Health Literacy
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21st Century Skills

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

**Pine Hill Public Schools
Curriculum**

Unit Title: Data Analysis - Graphs		Unit #: 5
Course or Grade Level: Math Applications/11th and 12th Grade		Length of Time: 4 weeks
Date Created: 11/18/2013		BOE Approval Date:
Pacing	Week 1 Bar Graphs & Line Graphs Week 2 Circles Graphs Week 3 Box & Whisker Plots & Scatterplots Week 4 Direct & Inverse Variation	
Essential Questions	<ul style="list-style-type: none"> • How do you determine which type of graph is used to for each situation? • How do you determine the size of each piece in a circle graph? • What is the main difference between direct and inverse variation? 	
Content	<ul style="list-style-type: none"> • Constructing and Interpreting Bar Graphs • Constructing and Interpreting Line Graphs • Constructing and Interpreting Circle Graphs • Constructing and Interpreting Box & Whisker Plots • Constructing and Interpreting Scatterplots • Formulas used for Direct Variation 	
Skills	<ul style="list-style-type: none"> • Determining the spacing of each axis of a bar or line graph • Find the degree measure for each section of a circle graph • Finding the measures of central tendency needed for a Box & Whisker Plot • Applying formulas 	
Math Skills/ Science Processes	<ul style="list-style-type: none"> • Using a protractor • Finding the median • Determining increasing or decreasing values 	
Assessments	<ul style="list-style-type: none"> • Anecdotal Records • Teacher Observations • Question & Answer • Worksheets • Quizzes • Benchmark Tests at end of each marking period 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Whole group, small group, and individual instruction • Quality work over quantity work • Workload may vary according to student's individual levels • After school tutorial 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Math • Economics • Financial Literacy • English 	
Lesson resources / Activities	<ul style="list-style-type: none"> • SmartBoard • Mathematic Coach Workbook – Pages 336 – 357 • Teacher Generated Worksheets • Websites • NJ Department of Education website 	
Common Core State Standards		
Grade or Conceptual Category (HS only): Statistics and Probability		
Domain (name and #): Interpreting Categorical and Quantitative data – S-ID		

Cluster(s):				Standard #			
Summarize, represent, and interpret data on a single count or measurement variable				S-ID 1, S-ID 6ex			
<u>21st Century Themes</u>							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
<u>21st Century Skills</u>							
	Creativity and Innovation		Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

**Pine Hill Public Schools
Curriculum**

Unit Title: Probability – Measures of Central Tendency		Unit #: 6
Course or Grade Level: Math Applications/11th and 12th Grade		Length of Time: 4 weeks
Date Created: 11/18/2013		BOE Approval Date:
Pacing	Week 1 Simple Probability Week 2 Measures of Central Tendency Week 3 Probability Week 4 Mutually Exclusive & Non-Mutually Exclusive Events	
Essential Questions	<ul style="list-style-type: none"> • How do you compute simple probability? • Which measure of central tendency is the most reliable? • How do you find the probability of more than one event? 	
Content	<ul style="list-style-type: none"> • Finding the probability of one event • Finding probability using a tree diagram • Finding the mean, median, and mode of a set of data • Finding probability with and without replacement • Determining if an event is mutually exclusive or non-mutually exclusive 	
Skills	<ul style="list-style-type: none"> • The Fundamental Counting Principle • Constructing tree diagrams • Distinguishing between the mean, median, and mode • Applying formulas 	
Math Skills/ Science Processes	<ul style="list-style-type: none"> • Fraction multiplication • Computation of averages • Recognizing situations with and without replacement. 	
Assessments	<ul style="list-style-type: none"> • Anecdotal Records • Teacher Observations • Question & Answer • Worksheets • Quizzes • Benchmark Tests at end of each marking period 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Whole group, small group, and individual instruction • Quality work over quantity work • Workload may vary according to student's individual levels • After school tutorial 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Math • Economics • Financial Literacy • English 	
Lesson resources / Activities	<ul style="list-style-type: none"> • SmartBoard • Mathematic Coach Workbook – Pages 358 – 399 • Teacher Generated Worksheets • Websites • NJ Department of Education website 	
Common Core State Standards		
Grade or Conceptual Category (HS only): Statistics and Probability		
Domain (name and #): Interpreting Categorical and Quantitative data – S-ID		
Conditional Probability and the rules of Probability – S-CP		
Cluster(s):	Standard #	

Summarize, represent, and interpret data on a single count or measurement variable		S-ID 2, S-ID 4	
Understand and evaluate random processes underlying statistical experiments		S-CP 1, S-CP 2, S-CP 3, S-CP 4, S-CP 7	
<u>21st Century Themes</u>			
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy
			Civic Literacy
			Health Literacy
<u>21st Century Skills</u>			
	Creativity and Innovation		Critical Thinking and Problem Solving
			Communication and Collaboration
	Media Literacy		ICT Literacy
			Life and Career Skills

Pine Hill Public Schools Curriculum	
Unit Title: Probability – Permutations & Combinations	Unit #: 7
Course or Grade Level: Math Applications/11th and 12th Grade	Length of Time: 4 weeks
Date Created: 11/18/2013	BOE Approval Date:
Pacing	<ul style="list-style-type: none"> Week 1 Permutations Week 2 Combinations Week 3 Permutations & Combinations Week 4 Fundamental Counting Principle
Essential Questions	<ul style="list-style-type: none"> • What is the difference between a permutation and combination? • Do you have to learn the formulas for permutations and combinations • How will the Fundamental Counting Principle help me with permutations & combinations?
Content	<ul style="list-style-type: none"> • Finding factorials • Finding permutations • Using the Fundamental Counting Principle • Comparing permutations and combinations
Skills	<ul style="list-style-type: none"> • The Fundamental Counting Principle • Distinguishing situations • Ordered and unordered situations • Applying formulas
Math Skills/ Science Processes	<ul style="list-style-type: none"> • Fraction multiplication • Use of formulas • Use of calculator functions
Assessments	<ul style="list-style-type: none"> • Anecdotal Records • Teacher Observations • Question & Answer • Worksheets • Quizzes • Benchmark Tests at end of each marking period
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Whole group, small group, and individual instruction • Quality work over quantity work • Workload may vary according to student’s individual levels • After school tutorial
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Math • Economics • Financial Literacy • English
Lesson resources / Activities	<ul style="list-style-type: none"> • SmartBoard • Mathematic Coach Workbook – Pages 400 – 407 • Teacher Generated Worksheets • Websites • NJ Department of Education website
Common Core State Standards	
Grade or Conceptual Category (HS only): Algebra	
Domain (name and #): Conditional Probability and the rules of Probability – S-CP Using Probability to make decisions – S-MD	
Cluster(s):	Standard #
Understand independence and conditional probability and use them to interpret data	S-CP 9 S-MD 5a

Using Probability to make decisions							
<u>21st Century Themes</u>							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
<u>21st Century Skills</u>							
	Creativity and Innovation		Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

**Pine Hill Public Schools
Curriculum**

Unit Title: Algebra – Equations, Patterns, Sequences		Unit #: 8
Course or Grade Level: Math Applications/11th and 12th Grade		Length of Time: 4 weeks
Date Created: 11/18/2013		BOE Approval Date:
Pacing	Week 1 Patterns Week 2 Linear Equations Week 3 Arithmetic Sequences Week 4 Geometric Sequences	
Essential Questions	<ul style="list-style-type: none"> • How do you use coordinate points to find a linear equation? • How do you use the graph of a line to find a linear equation? • How do you extend arithmetic and geometric sequences? 	
Content	<ul style="list-style-type: none"> • Extending patterns and the rules they follow • Making linear equations from coordinate points or graphs • Finding the common difference to extend an arithmetic sequence • Finding the common ratio to extend a geometric sequence 	
Skills	<ul style="list-style-type: none"> • Following patterns • Finding slope and intercepts • Determining if a sequence is arithmetic or geometric • Applying formulas 	
Math Skills/ Science Processes	<ul style="list-style-type: none"> • Understanding slope • Finding missing terms • Use of calculator functions 	
Assessments	<ul style="list-style-type: none"> • Anecdotal Records • Teacher Observations • Question & Answer • Worksheets • Quizzes • Benchmark Tests at end of each marking period 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Whole group, small group, and individual instruction • Quality work over quantity work • Workload may vary according to student's individual levels • After school tutorial 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Math • Economics • Financial Literacy • English 	
Lesson resources / Activities	<ul style="list-style-type: none"> • SmartBoard • Mathematic Coach Workbook – Pages 199 – 236 • Teacher Generated Worksheets • Websites • NJ Department of Education website 	
Common Core State Standards		
Grade or Conceptual Category (HS only): Algebra		
Domain (name and #): Seeing Structure in expressions – A-SSE		
Linear, Quadratic, and exponential models – F-LE		
Cluster(s):	Standard #	

Interpret the structure of expressions Construct and compare linear, quadratic, and exponential models and solve problems			A-SSE 1a, A-SSE 1b F-LE 2				
<u>21st Century Themes</u>							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
<u>21st Century Skills</u>							
	Creativity and Innovation		Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

**Pine Hill Public Schools
Curriculum**

Unit Title: Algebra – Functions, Systems of Equations, Quadratic Equations		Unit #: 9
Course or Grade Level: Math Applications/11th and 12th Grade		Length of Time: 4 weeks
Date Created: 11/18/2013		BOE Approval Date:
Pacing	<ul style="list-style-type: none"> Week 1 Functions Week 2 Quadratic Equations Week 3 Graphing Equations Week 4 Recursive Formulas 	
Essential Questions	<ul style="list-style-type: none"> • How do you determine if a set of points is a function? • What does the graph of a quadratic equation look like? • How do various transformations effect the graph of a function? 	
Content	<ul style="list-style-type: none"> • Finding domain and range • Find the solution of a system of equations by graphing • Find the minimum and maximum of a quadratic equation • Factor quadratic equations • Classify functions by their graphs 	
Skills	<ul style="list-style-type: none"> • Reading charts • Graphing Equations • Identifying zeros of equations • Factoring • Visualizing graphs 	
Math Skills/ Science Processes	<ul style="list-style-type: none"> • Finding correlations between x & y • Understanding slope and intercepts • Multiplication and addition skills • Understanding how graphs change 	
Assessments	<ul style="list-style-type: none"> • Anecdotal Records • Teacher Observations • Question & Answer • Worksheets • Quizzes • Benchmark Tests at end of each marking period 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Whole group, small group, and individual instruction • Quality work over quantity work • Workload may vary according to student’s individual levels • After school tutorial 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Math • Economics • Financial Literacy • English 	
Lesson resources / Activities	<ul style="list-style-type: none"> • SmartBoard • Mathematic Coach Workbook – Pages 237 – 273 • Teacher Generated Worksheets • Websites • NJ Department of Education website 	
Common Core State Standards		
Grade or Conceptual Category (HS only): Algebra		

Domain (name and #): Seeing Structure in expressions – A-SSE Arithmetic with Polynomials and rational expressions – A-APR Creating equations – A-CED Reasoning with equations and inequalities – A-REL Interpreting functions – F-IF							
Cluster(s):				Standard #			
Interpret the structure of expressions Understand the relationship between zeros and factors of polynomials Create equations that describe numbers or relationships Understand solving equations as a process of reasoning and explain the reasoning Solve equations and inequalities in one variable Solve systems of equations Understand the concept of a function and use function notation Analyze functions using different representations				A-SSE 3a A-APR 3 A-CED 1, A-CED 2 A-REL 1, A-REL 2 A-REL 4b A-REL 6 F-IF 1, F-IF 2 F-IF 7b			
<u>21st Century Themes</u>							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
<u>21st Century Skills</u>							
	Creativity and Innovation		Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		

**Pine Hill Public Schools
Curriculum**

Unit Title: Algebra – Polynomials		Unit #: 10
Course or Grade Level: Math Applications/11th and 12th Grade		Length of Time: 4 weeks
Date Created: 11/18/2013		BOE Approval Date:
Pacing	Week 1 Evaluating Polynomials Week 2 Performing operations on Polynomials Week 3 Factoring Polynomials Week 4 Quadratic Equation	
Essential Questions	<ul style="list-style-type: none"> • How do you evaluate polynomials involving exponents? • What does FOIL stand for? • Can you solve a quadratic equation without using the Quadratic Equation? 	
Content	<ul style="list-style-type: none"> • Find the value of a given polynomial when given a value for the variable • Add and subtract polynomials • Multiply a polynomial by a binomial • Multiply two polynomials • Divide polynomials • Use the Quadratic Equation to solve equations 	
Skills	<ul style="list-style-type: none"> • Operations on signed numbers • Recognizing like terms • Multiplying and dividing exponents • Factoring polynomials 	
Math Skills/ Science Processes	<ul style="list-style-type: none"> • Knowledge of rules for signed numbers • Simplifying expressions • Multiplying and addition skills 	
Assessments	<ul style="list-style-type: none"> • Anecdotal Records • Teacher Observations • Question & Answer • Worksheets • Quizzes • Benchmark Tests at end of each marking period 	
Interventions / differentiated instruction	<ul style="list-style-type: none"> • Whole group, small group, and individual instruction • Quality work over quantity work • Workload may vary according to student's individual levels • After school tutorial 	
Inter-disciplinary Connections	<ul style="list-style-type: none"> • Math • Economics • Financial Literacy • English 	
Lesson resources / Activities	<ul style="list-style-type: none"> • SmartBoard • Mathematic Coach Workbook – Pages 274 – 334 • Teacher Generated Worksheets • Websites • NJ Department of Education website 	
Common Core State Standards		
Grade or Conceptual Category (HS only): Algebra		
Domain (name and #): Arithmetic with Polynomials and rational expressions – A-APR		
Reasoning with Equations and Inequalities – R-REL		
Cluster(s):	Standard #	

Perform arithmetic operations on polynomials				A-APR 1			
Solve equations and inequalities in one variable				A-REL 4 a, A-REL 4b			
<u>21st Century Themes</u>							
	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
<u>21st Century Skills</u>							
	Creativity and Innovation		Critical Thinking and Problem Solving		Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy		Life and Career Skills		