Pine Hill Public Schools								
Content A	rea:	Mathematics	Mathematics					
Course Tit	le/ Grade Level:	Algebra I						
Unit 1:	Equations and Ine	qualities	Duration:	16 Days				
Unit 2:	Functions		Duration:	12 Days				
Unit 3:	Linear Functions		Duration:	18 Days				
Unit 4:	Solving Equations	and Inequalities	Duration:	20 Days				
Unit 5:	Exponents and Po	lynomials	Duration:	17 Days				
Unit 6:	Factoring Polynon	nials	Duration:	18 Days				
Unit 7:	Quadratic Function	ons and Equations	Duration:	18 Days				
Unit 8:	Data Analysis and	Probability	Duration:	14 Days				
Unit 9:	Exponential and F	Radical Functions	Duration:	10 Days				
Unit 10:	Rational Function	s and Equations	Month:	20 Days				
BOE Appr	BOE Approval Date: July 17, 2012							

Unit Title: Eq	uations and Inequalities	Unit #: 1					
Course or Grad	e Level: Algebra I	Length of Time: 16 days (2 days per section, 2 review days, 2 summative assessment days)					
Pacing	September						
Essential Questions	 How does solving equations apply to the real world? How are inverse operations useful in solving equations? What is the difference in the strategies used to solve multi-step equations and equations containing a variable on both sides of the equal sign? How can I use proportions to solve real world problems? What is the difference between the solution of an equation and an inequality? What is the difference of the solution of an inequalities that contains a less than/greater than sign compared to a less than or equal to/ greater than or equal to? What is the difference of a solution to an inequality when multiplied/divided by a positive or negative number? 						
Content	 Solving Two-Step and Multi-Step Equations (2-3) Solving Equations with Variables on both sides (2-4) Solving for a Variable (2-5) Proportions with Distribution and Expressions (2-6/2-7) Solving Two-Step and Multi-Step Inequalities (3-4) Solving Inequalities with Variables on Both Sides (3-5) 						
Skills	 Review solving equations by isolating th Use the distributive property to simplify Combine like terms to simplify the left of Cross multiply involving algebraic expression Identify solutions of inequalities Graph inequality solutions and determin Solve inequalities by isolating the variable 	 Review solving equations by isolating the variable and using inverse operations Use the distributive property to simplify multi-step equations Combine like terms to simplify the left or right side of the equation Cross multiply involving algebraic expressions to solve for a specific variable Identify solutions of inequalities Graph inequality solutions and determine a solution from a graph 					
Assessments Interventions /	 Formative: Teacher observation and questioning Seat and or group work Fist to five/ Thumbs up, thumbs down Homework Student participation at board Students given handouts of power point if 	Summative: Quizzes, tests and benchmark notes					
differentiated instruction	Students given assess to online textbookPartners or group work (groups formed h)	eterogeneously according to ability)					
Inter- disciplinary Connections	 Using geometry to determine the area an Using geometric shapes to solve proportion 	d perimeter of shapes ons involving algebraic expressions					
Lesson resources / Activities	 Holt McDougal Algebra I, copyright 2007 – Chapter 2 & 3 Power point resources Textbook practice worksheet Online textbook (<u>www.hrw.com</u>) 						
Cuede en Car	Common Col	e State Standards					
Grade or Conce	ptual Category (HS only): Algebra I						
Domain (name a Inequalities	and #): Quantities; Seeing Structure in ex	pressions; Creating equations; Reasoning with equations and					
Cluster: Reason	n #. Standard:						
quantitatively a	nd use N-Q-1, N-Q-2, A-CED-1, A-0	CED-4, A-REI-1, A-REI-3					

Inte expr Crea desc relat Und equa reas reas Solv ineq	s to solve problems. rpret the structure ressions. ate equations that ribe numbers or tionships. erstand solving ations as a process of oning and explain to oning. e equations and ualities in one	of				
varia Matl	able. h Practices: Make ser	nse of	problems and persevere in solv	ving th	em, Reason abstractly and	quantitatively, Construct
vari Matl viab	able. h Practices: Make ser le arguments and crit	nse of ique th	problems and persevere in solv ne reasoning of others, Model wi 21 st Century	ving th th mat	em, Reason abstractly and hematics nes	quantitatively, Construct
vari Matl viabl	able. h Practices: Make set le arguments and criti Global Awareness	nse of ique th	problems and persevere in solv ne reasoning of others, Model wi <u>21st Century</u> Financial, Economic, Business, and Entrepreneurial Literacy	ving th th mat Then	em, Reason abstractly and hematics nes Civic Literacy	quantitatively, Construct Health Literacy
varia Matl viabl	able. h Practices: Make sen le arguments and critit Global Awareness	nse of ique th X	problems and persevere in solv the reasoning of others, Model with 21 st Century Financial, Economic, Business, and Entrepreneurial Literacy 21 st Century	ving th th mat <u>Then</u> y Skil	em, Reason abstractly and hematics nes Civic Literacy	quantitatively, Construct Health Literacy
varia Matl viabl	able. A Practices: Make set a arguments and critication Global Awareness Creativity and Innovation	nse of ique th X	problems and persevere in solv ne reasoning of others, Model wi 21 st Century Financial, Economic, Business, and Entrepreneurial Literacy 21 st Centur Critical Thinking and Problem Solving	ving th th mat Then y Skil	em, Reason abstractly and hematics Civic Literacy ls Communication and Collaboration	quantitatively, Construct Health Literacy Information Literacy

F	Pine Hill Public Schools
Μ	lathematics Curriculum

Unit Title: Fu	nctions			Unit #: 2						
Course or Grad	e Level: Alg	gebra I	Length of Time: 12 days (2 and 2 summative assessment day	days per section, 2 review days						
Pacing	October									
Essential Questions	What is aWhy is thWhat are	What is a function? Why is the range allowed to repeat in a function, but a domain cannot? What are the steps and strategies of graphing a function from a given equation?								
Content	 Graphing Relations Writing I Graphing 	Graphing relationships (4-1) Relations and Functions (4-2) Writing Functions (4-3) Graphing Functions (4-4)								
Skills	 Relate graphs to situations, sketch graphs for situations, and write situations for graphs Find the domain and range of a function Identify functions Identify independent and dependent variables of functions Evaluate functions by the use of substitution Graph functions 									
Assessments	Formative:		Summative:							
	 Teacher observation and questioning Quizzes, tests and benchmark Seat and or group work Fist to five/ Thumbs up, thumbs down Homework Student participation at board 									
Interventions /	• Students g	iven handouts of power point not	es							
differentiated	• Students	given assess to online textbook	1 1 1 1 1 1 1 1 1 1 1 1 1							
instruction	• Partners of	or group work (groups formed het	erogeneously according to ability)							
Inter- disciplinary Connections	• Using biol	ogy to help sketch graphs of func	tions							
Lesson	Holt McD	ougal Algebra I, copyright 2007	– Chapter 4							
resources /	Power po	int resources								
Activities	 Textbook Online text 	book (www.hrw.com)								
		Common Core	State Standards							
Grade or Conce	ptual Categ	ory (HS only): Algebra I								
Domain (name a	and #): Quar	ntities; Creating Equations; Re	asoning with Equations and Ine	qualities; Interpreting						
Functions, Linear	r, Quadratic,	and exponential models; Inter	preting Categorical and Quanti	tative data						
Cluster: Reason	1 	#. Standard:								
units to solve pr	na use oblems.	N-Q-1, A-CED-1, A-CED-2,	, A-CED-3, A-REI-3, A-REI-10), F-IF-1, F-IF-2, F-IF-4, F-						
Create equation	s that	IF-5, F-IF-7, F-BF-1,								
describe numbers or										
relationships										
Represent and e	equations									
granhically										
Understand the	concept of									
a function and u	ise									
function notatio	n									
Construct and c	ompare									

linear, quadratic, and exponential models and solve problems Summarize, represent, and interpret data on two categorical and quantitative variables							
Math strate	egically	nse of	problems and persevere in sol	ving t	hem, model with mathem	atics,	use appropriate tools
			<u>21st Century</u>	Ther	nes		
Х	Global Awareness	Х	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
21 st Century Skills							
	Creativity and Innovation	Х	Critical Thinking and Problem Solving	Х	Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy	X	Life and C	Career	r Skills

Pine Hill Public Schools	
Mathematics Curriculum	

Unit Title: Lir	near Functio	ons		Unit #: 3					
Course or Grad	e Level: Alg	gebra I	Length of Time: 18 days (2 d and 2 summative assessment day	days per section, 2 review days					
Pacing	October/No	vember							
Essential Questions	 What are How do How do What is t 	 What are two different ways to determine if a function is a linear function? How do you determine if it is useful to write a linear equation in slope-intercept form or point-slope form? How do you determine if a pair of lines is parallel or perpendicular? What is the difference between a pair of lines that are parallel and a pair of lines that are perpendicular? Identifying Linear Functions (5-1) 							
Content	 Identifying Linear Functions (5-1) Using Intercepts (5-2) The Slope Formula (5-4) Slope-Intercept Form (5-6) Point-Slope Form (5-7) Scatter Plots and Trend Lines by use of Graphing Calculator (4-5) Slopes of Parallel and Perpendicular Lines (5-8) 								
Skills	 Identify linear functions from a graph and/or ordered pairs Graph linear functions Identify intercepts Determine the slope of a line Write linear equations in slope-intercept and point-slope form Describe correlations from scatter plots Use a trend line to make predictions from data 								
Assessments	Formative: Summative: • Teacher observation and questioning • Quizzes, tests and benchmark • Seat and or group work • Fist to five/ Thumbs up, thumbs down • Homework • Homework								
Interventions / differentiated instruction	 Students Students Partners of 	given handouts of power point not given assess to online textbook or group work (groups formed hete	es erogeneously according to ability)						
Inter- disciplinary Connections	Use finanUse finan	the to determine the domain and range to determine the rate of change	nge of functions in cost over a period of time						
Lesson resources / Activities	 Holt McDougal Algebra I, copyright 2007 – Chapter 5 Power point resources Textbook practice worksheet Online textbook (www brw com) 								
		Common Core	State Standards						
Grade or Conceptual Category (HS only): Algebra I									
Domain (name and #): Creating Equations; Reasoning with Equations and Inequalities; Interpreting Functions; Building Functions; Linear, Quadratic, and exponential models; Interpreting Categorical and Quantitative data.									
Cluster: Creati equations that d numbers or rela Represent and equations and	ng lescribe ttionships solve	#. Standard: N-Q-1, A-CED-2, A-CED-3, LE-2, F-LE-5, S-ID-6	A-REI-3, F-IF-4, F-IF-5, F-IF-	-6, F-IF-7, F-IF-9, F-BF-1, F-					

ineq	ualities graphical	y.					
Ana	lyze functions usi	ıg					
diffe	erent						
repr	esentations.						
Buil	d a function that						
mod	els a relationship						
betw	veen two quantitie	s.					
Con	struct and company	re					
linea	r, quadratic, and						
expo	nential models an	d					
solve	e problems.						
Inte	rpret expressions						
for f	unctions in terms	of					
the s	ituation they						
mod	el.						
Inte	rpret linear mode	ls.					
Math	Practices: Make se	nse o	f problems and persevere in so	olving	them, Construct viable a	argun	ents and critique the
reaso	ning of others, Mode	l with	mathematics, Use appropriate t	ools s	trategically, Attend to pre	cision	, Look for and express
regul	arity in repeated reas	oning	, ot -				
			<u>21st Century</u>	Ther	<u>nes</u>		
Х	Global Awareness		Financial, Economic,		Civic Literacy		Health Literacy
			Business, and Entrepreneurial				
			Literacy				
	21 st Century Skills						
	Creativity and	Χ	Critical Thinking and Problem	Χ	Communication and		Information Literacy
	Innovation		Solving	V	Collaboration	C	01.111
	Media Literacy		ICI Literacy	Х	Life and	Career	r Skills

Pine Hill Public Schools	
Mathematics Curriculum	

Unit Title: Sys	stems of Equ	uations and Inequalities		Unit #: 4				
Course or Grad	e Level: Alg	gebra I	Length of Time: 20 days (2 and 2 summative assessment day	days per section, 2 review days ys)				
Date Created: 8	/5/14		BOE Approval Date:					
Pacing	November/I	December						
Essential	• What is the	he difference between a system of	equations and a linear function?					
Questions	How canHow do y	you determine the best method to you determine if a system is classif	solve a system of equations? fied as a special system?					
Content	Solving Systems by Graphing (6-1)							
	Solving S	Systems by Substitution (6-2)						
	Solving S	Systems by Elimination (6-3)						
	 Solving I 	Special Systems (0-4)						
	 Solving S 	Systems of Linear Inequalities (6-0)	6)					
Skills	Graph a s	system of linear equations to find a	a solution					
	• Determin	the solution of a system by subs	titution					
	Determin	e the solution of a system by elim	ination					
	Classify a	a special system as consistent or in	nconsistent					
	• Classify	a special system by the number of	solutions					
Assessments	Formative:	becamultion and questioning	Summative:	an ab mort				
	 Teacher C Seat and C 	or group work	• Quizzes, tests and be	enchmark				
	 Fist to fiv 	e/ Thumbs up thumbs down						
	Homework	rk						
	• Student p	articipation at board						
Interventions /	• Students	given handouts of power point not	tes					
differentiated	• Students	s given assess to online textbook						
instruction	• Partners of	or group work (groups formed hete	erogeneously according to ability)					
Inter-	• Use finan	ce to determine the solution of a s	ystem of equation.					
disciplinary	• Use geom	netry to determine the degree meas	surement of x and y by solving a s	ystem of equations.				
Connections								
Lesson	Holt McE	Dougal Algebra I , copyright 2007	– Chapter 6					
resources /	Power po	int resources						
Activities	Textbook Online to	practice worksheet						
	• Online te:	Common Core	State Standards					
Cuada au Canaa	mtural Catao		State Standarus					
Grade or Conce	eptual Categ	gory (HS omy): Algebra I						
Domain (name a Building Functio	and #): Crea	ting Equations; Reasoning with Quadratic, and Exponential Mo	h Equations and Inequalities; In dels.	nterpreting Functions;				
Cluster: Creati	ng	#. Standard:						
equations that d	lescribe	A-CED-2, A-CED-3, A-REI-	3, A-REI-6, A-REI-12,					
numbers or rela	tionships.							
Solve systems of	Ĺ							
equations.	alva							
Acquisitions and in	nagualitias							
granhically	ncquanties							
Analyze function	ns using							
	8							

different representations.Build a function thatmodels a relationshipbetween two quantities.Construct and comparelinear, quadratic, andexponential models andsolve problems.Math Practices: Make sense of problems and persevere in solving them, Reason abstractly and quantit						untitatively, Construct		
VIADI	viable arguments and critique the reasoning of others, Use appropriate tools strategically, Attend to precision. <u>21st Century Themes</u>							
Х	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy	
21 st Century Skills								
	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy	
	Media Literacy		ICT Literacy	Х	Life and C	Career	Skills	

Pine Hill Public Schools								
		Mathematics	Curriculum					
Unit Title: Exp	ponents and	l Polynomials		Unit #: 5				
Course or Grad	e Level: Alg	gebra I	Length of Time: 17 days (2 and 2 summative assessment da	days per section, 2 review days ys)				
Pacing	December/J	anuary						
Essential	• What is t	he difference between scientific no	otation and standard notation?					
Questions	 Why can When co What is t bases? How do y What are 	an exponent never be negative? mbining like terms why doesn't th he difference between multiplying you determine if a polynomial is a the steps to multiply polynomials	e value of the exponent change? and dividing numerical bases co perfect square trinomial or a diff by the use of FOIL and the box 1	ntaining exponents and variable erence of squares? nethod?				
Content	 Integer exponents (7-1) Review Multiplication and Division Properties of Exponents (7-3/7-4) Polynomials (7-5) Adding and subtracting polynomials (7-6) Multiplying polynomials (7-7) 							
Skills	 Evaluate Express r Simplify Identify r Add and Multiply Determin 	 Evaluate integer exponents, rewrite negative exponents as positive Express numbers in standard and scientific notation Simplify algebraic expressions by exponent properties Identify polynomials and express them in standard form Add and subtract polynomials by combining like terms Multiply polynomials by FOIL or box method 						
Assessments	Formative:		Summative:					
	 Teacher of Seat and of Fist to fiv Homewor Student p 	observation and questioning or group work re/ Thumbs up, thumbs down rk articipation at board	• Quizzes, tests and b	enchmark				
Interventions /	• Students	given handouts of power point not	es					
differentiated instruction	 Students g Partners c 	given assess to online textbook or group work (groups formed hete	erogeneously according to ability)					
Inter- disciplinary Connections	Use finanUse photo	te to add and subtract polynomial ography to determine the area of pl	profits of two different industries hotograph by multiplying binomi	s. als.				
Lesson resources /	Holt McEPower po	Dougal Algebra I , copyright 2007 int resources	– Chapter 7					
Activities	 Textbook Online text 	t practice worksheet xtbook (www.hrw.com)						
		Common Core S	State Standards					
Grade or Conce	ptual Categ	gory (HS only): Algebra I						
Domain (name a Rational Express	and #): The lions.	Real Number System; Seeing S	Structure in Expressions; Arith	metic with Polynomials and				
Cluster: Extend	d the	#. Standard:						
properties of ex	ponents to	N-RN-1, A-APR-1, A-APR-4	, A-REI-3, F-IF-2, G-MG-1					

ratio Inter expr Writ equiv prob Perfo oper polyr Math reaso expro	onal exponents. rpret the structure of essions. te expressions in valent forms to solv olems. orm arithmetic ations on <u>nomials.</u> n Practices: Make se oning of others, Mod ess regularity in repea	of e nse of el wit	f problems and persevere in so h mathematics, Attend to preci easoning.	olving sion,	them, Construct viable a Look for and make sure	argum of str	nents and critique the ructure, Look for and
v	Clobal Awaranaga		Einengiel Egonomia		Civia Literaay		Haalth Literaau
Λ	Giobal Awareliess		Financial, Economic, Business and Entrepreneurial		Civic Literacy		nearm Literacy
			Literacy				
			21 st Centur	v Ski	lls		
		N					
	Creativity and	Х	Critical Thinking and Problem	Х	Communication and		Information Literacy
	Innovation		Solving		Collaboration		
	Media Literacy		ICT Literacy		Life and	Career	r Skills
	1		J	1	1		

Pine Hill Public Schools Mathematics Curriculum									
Unit Title: Factoring Polynomials Unit #: 6									
Course or Grad	e Level: Algebra I	Length of Time: 18 days (2 days per section, 2 review days and 2 summative assessment days)							
Pacing	January/February								
Essential Questions	 How does the GCF between a number and a variable differ? What is the difference between factoring a polynomial in the form x² + bx + c compared to ax² + bx + c? What are the properties to determine if a polynomial is a perfect square trinomial or a difference of squares? What are signs of identification to beln determine the appropriate factoring method? 								
Content	 Factoring by GCF (8-2) Factoring x² + bx + c (8-3) Factoring ax² + bx + c (8-4) Factoring special products (8-5) Choosing a factoring method (8-6) 								
Skills	 Identify the GCF between a set of monomials Factor of the GCF from a polynomial to express as a distributive expression Factor a trinomial into a multiplication of binomials Determine if a trinomial is a perfect square trinomial by use of square roots Determine if a binomial difference is a difference of squares by use of square roots 								
Assessments	 Formative: Teacher observation and questioning Seat and or group work Fist to five/ Thumbs up, thumbs down Homework Student participation at board 	Summative: • Quizzes, tests and benchmark							
Interventions / differentiated instruction	 Students given handouts of power point not Students given assess to online textbook Partners or group work (groups formed hete 	es erogeneously according to ability)							
Inter- disciplinary Connections	 Use finance to determine the domain and ra Use finance to determine the rate of change 	nge of functions in cost over a period of time							
Lesson resources / Activities	 Holt McDougal Algebra I, copyright 2007 Power point resources Textbook practice worksheet Online textbook (<u>www.hrw.com</u>) 	– Chapter 8							
	Common Core	State Standards							
Grade or Conce	ptual Category (HS only): Algebra I								

Domain (name and #): Quantities; Seeing Structure in Expression.

Math Practices: Make sense of problems and persevere in solving them, Reason abstractly and quantitatively, Construct viable arguments and critique the reasoning of others, Model with mathematics, Use appropriate tools strategically, Attend to precision, Look for and make use of structure, Look for and express regularity in repeated reasoning.

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

Pine Hill Public Schools									
	Mathematics	Curriculum							
Unit Title: Qu	adratic Functions and Equations	Unit #: 7							
Course or Grad	e Level: Algebra I	Length of Time: 18 days (2 days per section, 2 review days and 2 summative assessment days)							
Pacing	February/March								
Essential	• How does the graph differ from a linear fun	nction to a quadratic function?							
Questions	 What determines if a quadratic equation has a maximum or minimum? What are the steps to graph a quadratic function using its axis of symmetry, vertex, and y-intercept? What is the difference between having a > 1 and a < 1, and what is its effect on a quadratic function? What are the zeros of a quadratic function? What are the steps to determine the zeros of a quadratic function by the use of the zero product property? What are the steps to determine the zeros of a quadratic function by the use of square roots? What is the difference between determining the zeros of a quadratic function by factoring and use of square roots? 								
Content	 Identifying Quadratic Functions (9-1) Characteristics of Quadratics Functions (9- Graphing Quadratic Functions (9-3) Transforming Quadratic Functions (9-4) Solving Quadratic Functions by Graphing (9) Solving Quadratic Equations by Factoring Solving Quadratic Equations by Using Squ 	2) (9-5) (9-6) are Roots (9-7)							
Skills	 Identify an equation quadratic by having a 	degree of two							
	 Determine the axis of symmetry and vertex Determine the axis of symmetry and vertex Determine the maximum and minimum of Graph a quadratic function by determining Identify the transformation of a quadratic function Determine the zeros of a quadratic function Determine the zeros of a quadratic function 	to f a quadratic function by its graph to f a quadratic function by its equation a quadratic function the axis of symmetry, vertex, and y-intercept unction to its parent function $f(x) = x^2$ to by factoring and the zero product property to by the use of square roots							
Assessments	Formative: • Teacher observation and questioning • Seat and or group work	Summative: • Quizzes, tests and benchmark							
	 Fist to five/ Thumbs up, thumbs down Homework Student participation at board 								
Interventions / differentiated instruction	 Students given handouts of power point not Students given assess to online textbook Partners or group work (groups formed hete 	es erogeneously according to ability)							
Inter- disciplinary Connections	 Use knowledge of architecture to determine Use physics to determine the velocity of a v in the pipe. Use physics to compare the graphs of fallin reach the ground. 	if the height of a boat can pass under the arch of a bridge. vater flow in a pipe and if it varies according to the circumference g objects from two different heights and the length it takes to							
Lesson	• Holt McDougal Algebra I, copyright 2007	– Chapter 9							
resources /	 Power point resources Textbook practice workshoot 								
Activities	 • Textbook practice worksneet • Online textbook (www.hrw.com) 								
	Common Core	State Standards							
Grade or Conce	eptual Category (HS only): Algebra I								

Domain (name and #):	Quantities; Seeing Struct	ture in Expressions;	Reasoning with	Equations and Inequ	alities;
Interpreting Functions: F	suilding Functions				

muer	interpreting Functions, Bunding Functions.						
Clus	ter: Reason	#	[#] . Standard:				
quan	uantitatively and use N-Q-1, A-SSE-3, A-APR-4, A-CED-1, A-CED-2, A-CED-3, A-REI-4, A-REI-11, F-IF-						I-4, A-REI-11, F-IF-
units	to solve problems.	2	4, F-IF-5, F-IF-7, F-IF-9, F-BF	-1, F-l	BF-3		
Writ	e expressions in						
equiv	valent forms to solv	e					
prob	lems.						
Solve	e equations and						
inequ	ualities in one						
varia	ıble.						
Anal	yze functions using						
diffe	rent representation	s.					
Build	l new functions from	m					
existing functions.							
Math	Practices: Make ser	nse of	problems and persevere in solv	ving th	iem, Reason abstractly ai	nd qu	antitatively, Construct
viable	e arguments and criti	que tl	ne reasoning of others, Model w	ith ma	athematics, Use appropria	te too	ls strategically, Attend
to pro	ecision, Look for and	make	use of structure.				
			<u>21st Century</u>	Ther	<u>nes</u>		
Х	Global Awareness		Financial, Economic,		Civic Literacy		Health Literacy
			Business, and Entrepreneurial				
			Literacy				
			<u>21st Centur</u>	y Ski	<u>lls</u>		
	Creativity and	Х	Critical Thinking and Problem	Х	Communication and		Information Literacy
	Innovation		Solving		Collaboration		
	Media Literacy		ICT Literacy		Life and	Career	r Skills

Pine Hill Public Schools									
		Mathematics	Curriculum						
Unit Title: Da	ta Analysis	and Probability		Unit #: 8					
Course or Grad	le Level: Alg	gebra I	Length of Time: 14 days (2 d and 2 summative assessment day	lays per section, 2 review days s)					
Pacing	icing March/April								
Essential Questions	 How can you determine the best visual representation for given data? What are some factors that cause a great to be misleading? What is the difference between experimental and theoretical probability? What is the difference between an independent and dependent event? When determining the probability of a dependent event, what is affected if an object in the event is not replaced? What is the difference between a combination and a permutation and what characteristics help determine 								
Content	 the correct Experime Theoretic Independ Combination Organizition 	the correct principle needed to find the solution? Experimental Probability (10-5) Theoretical Probability (10-6) Independent and Dependent Events (10-7) Combinations and Permutations (10-8)							
Skills	 Read and Determini 	Ind interpret bar graphs, line graphs, circle graphs nine the experimental probability of a given event nine the theoretical probability of a given event nine the outcome of an independent event nine the outcome of a dependent event nine the number of outcomes using the fundamental counting principal							
Assessments	Formative: • Teacher of • Seat and of • Fist to fiv • Homewor • Student p	observation and questioning or group work re/ Thumbs up, thumbs down rk articipation at board	Summative: • Quizzes, tests and be	nchmark					
Interventions / differentiated instruction	 Students Students Partners of 	given handouts of power point not given assess to online textbook or group work (groups formed hete	es erogeneously according to ability)						
Inter- disciplinary Connections	 Use histo represent Use finan Use histo 	ry in developing the population of ations. Ice to determine the central tenden ry to determine the total number o	different cultural minorities by the cy of a display of data. f outcomes in the NANP by the us	e use of graphical e of permutations.					
Lesson resources / Activities	 Holt McI Power po Textbook Online text 	Dougal Algebra I , copyright 2007 int resources practice worksheet xtbook (<u>www.hrw.com</u>)	- Chapter 10						
Grade or Conce	Common Core State Standards Grade or Conceptual Category (HS only): Algebra I								
Domain (name a	and #): Qua	ntities; Interpreting Categorica	l and Quantitative Data						
Cluster: Reason	n	#. Standard:							
quantitatively a units to solve pr	nd use oblems.	A-SSE-2, A-SSE-3, F-BF-3, S S-CP-8, S-CP-9, S-MD-7	S-ID-1, S-CP-1, S-CP-2, S-CP-	3, S-CP-5, S-CP-6, S-CP-7,					

Sum	marize, repeat, and						
inter	pret data on a singl	e					
coun	t or measureable						
varia	able.						
Sum	marize, represent,						
and	interpret data on tv	VO					
categ	gorical and						
quar	titative variables.			• 4			
wight	o practices: Make sei	ise or	problems and persevere in solv	ing tr	tem, Keason abstractly an	ia qua to too	antitatively, Construct
to nr	e arguments and critic	make	use of structure		unematics, Use appropria	10 100	is su alegically, Attenu
10 p1		mune	21 st Century	Ther	nes		
	~			Inci			
Х	Global Awareness		Financial, Economic,		Civic Literacy		Health Literacy
			Business, and Entrepreneurial				
			Literacy				
			<u>21st Centur</u>	<u>y Ski</u>	<u>lls</u>		
	Creativity and	Х	Critical Thinking and Problem	Х	Communication and		Information Literacy
	Innovation		Solving		Collaboration		
	Media Literacy		ICT Literacy		Life and	Career	r Skills

	Pine Hill Public Schools Mathematics Curriculum								
Unit Title • Ex	nonential ar	nd Radical Functions		Unit #• 9					
Course on Cred			Longth of Times 10 days ()	$\int draw = \pi $					
Course or Grau	e Level: Alg		and 1 summative assessment day	ys)					
Pacing	April/May								
Essential	• What is t	he difference between a geometric	c sequence and an arithmetic sequ	ence?					
Questions	• What is t	he difference between the graph o	f a linear, quadratic, and exponen	tial function?					
	 What is t What real 	he difference between exponential	I growths when compared to expo	d exponential decays?					
Content	Arithmet	ic and Geometric Sequences (4-6/	(11-1)						
Content	Exponent	tial Functions (11-2)							
	• Exponent	tial Growth and Decay (11-3)							
	• Linear, Q	Quadratic, and Exponential Models	s (11-4)						
Skills	• Extend an	nd find the <i>nth</i> of a Arithmetic and	d Geometric Sequence						
	 Identify a Graph an 	Exponential European by use of a	10n						
	 Orapii an Determin 	e the exponential growth and deca	av of functions						
	Graph da	ta to determine if a model is linear	r, quadratic, or exponential						
Assessments	Formative:		Summative:						
	• Teacher o	bservation and questioning	• Quizzes, tests and be	enchmark					
	• Seat and o	or group work							
	 F1St to T1V Homework 	e/ I numbs up, thumbs down							
	 Student p 	articipation at board							
Interventions /	• Students	given handouts of power point not	es						
differentiated	• Students	given assess to online textbook							
instruction	• Partners of	or group work (groups formed hete	erogeneously according to ability)						
Inter-	• Use histor	ry in determining if the population	is an exponential growth or deca	y through centuries.					
disciplinary	• Use finan	ce to determine the exponential ef	fect of the compound interest fun	ction.					
Connections	• Use scien	ce to determine measurements ren	naining after a certain period of ti	me by the use of the half-life					
T	Iormula.	Ougal Algebra L. convright 2007	- Chapter 11						
Lesson resources /	Power po	int resources							
Activities	• Textbook	practice worksheet							
	Online tex	xtbook (<u>www.hrw.com</u>)							
		Common Core	State Standards						
Grade or Conce	eptual Categ	ory (HS only): Algebra I							
Domain (name a Exponential Mod	and #): Qua lels.	ntities; Seeing Structure in Exp	pressions; Build Functions; Lin	near, Quadratic, and					
Cluster: Reason #. Standard:									
quantitatively a	nd use	N-O-1 A-SSE-3 A-CED-1	A-CED-2 A-CED-3 A-REI-3	A-REI-4 F-IF-2 F-IF-4 F-					
units to solve pr	oblems.	IF-7, F-IF-9, F-BF-1, F-BF-2	, F-LE-1, F-LE-2, F-LE-3, F-L	E-5, S-MD-7					
Write expressio	ns in		, , , , , ,	· · · · · · · · · · · · · · · · · · ·					
equivalent form	s to solve								
Problems. Build a function	that								
models a relation	nship								
between two qu	antities.								
Construct and c	ompare								

linea expo solve Inter func situa Math viabl	r, quadratic, and nential models and problems. pret expressions fo tions in terms of the tion they model. Practices: Make ser e arguments and criti	r e nse of	problems and persevere in solv ne reasoning of others, Model w	ving tl ith ma	nem, Reason abstractly an athematics, Use appropria	nd qua	antitatively, Construct ls strategically, Attend
to pr	ecision, Look for and	make	use of structure.				
			21 st Century	Ther	nes		
Х	Global Awareness		Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
			<u>21st Centur</u>	y Ski	lls		
	Creativity and	Х	Critical Thinking and Problem	Х	Communication and		Information Literacy
	Innovation		Solving		Collaboration		
	Media Literacy		ICT Literacy		Life and	Career	r Skills

Pine Hill Public Schools								
		Mathematics	Curriculum					
Unit Title: Rati	onal Funct	tions and Equations		Unit #: 10				
Course or Grade	Level: Alg	gebra I	Length of Time: 20 days (2 and 2 summative assessment da	days per section, 2 review days ys)				
Pacing	May/June							
Essential	• Can two quantities be inversely proportional if an increase in one corresponds to a decrease in the other?							
Questions	• What kinds of asymptotes are possible for a rational function?							
	Are a rational expression and its simplified form equivalent?							
Content	 Inverse F Rational 	Functions (12-1)						
	 Simplifyi 	ing Rational Functions (12-3)						
	 Multiplyi 	ing and Dividing Rational Express	tions (12-4)					
	Adding a	nd Subtracting Rational Expression	ons (12-5)					
	• Dividing	Polynomials (12-6)						
	Solving I	Rational Equations (12-7)						
Skills	 Identify a 	and Graph Inverse Variations	voluded values and asymptotes					
	 Simplify 	Rational Expressions by the use of	f Factoring, and determining und	efined values				
	 Multiplyi 	ing and Dividing Rational Express	ions by Factoring and Exponent I	Properties				
	Adding a	nd Subtracting Rational Expression	ons with like denominators and de	etermining the LCD for unlike				
	denomina	ators						
	• Dividing	Polynomials by Long Division an	d Synthetic Division					
	 Solutions 	kational Equations by using Cross	Products and the LCD to determine	ine if there are an Extraneous				
Assessments	Formative:		Summative:					
	• Teacher of	observation and questioning	• Quizzes, tests and be	enchmark				
	• Seat and o	or group work						
	• Fist to fiv	e/ Thumbs up, thumbs down						
	 Homewoi Student n 	rk articipation at board						
Interventions /	 Student p Students e 	given handouts of power point not	es					
differentiated	• Students	given access to online textbook						
instruction	• Partners of	or group work (groups formed hete	erogeneously according to ability))				
T 4	• Uso physic	iss and the product rule to determi	ng the pressure in on oir pump by	inverse variation				
Inter-	 Use physic Use biolo 	by to determine the surface-area-t	o-volume ratio of plants by simpl	ifying rational expressions.				
Connections	• Use statis	tics to determine the probability o	f a dependent event involving rati	ional expressions to define a				
Connections	sample sp	pace.		-				
Lesson	Holt McE	Dougal Algebra I, copyright 2007	– Chapter 12					
resources /	• Power po	int resources						
Activities	 Textbook Online text 	thook (www.hrw.com)						
		Common Core	State Standards					
Grade or Concen	tual Cateo	ory (HS only): Algebra I						
Grade of Concep								
Domain (name ar	nd #): Arit	hmetic with Polynomials and F	Rational Expressions, Creating	Equations, Reasoning with				
Equations and Ine	qualities, Ir	nterpreting Functions, Building	Functions					
Cluster: Rewrite	simple	#. Standard:						
rational expression different forms.	ons in	A-APR-6, A-APR-7, A-CED F-IF-9, F-BF-3	-2, A-CED-3, A-REI-2, A-RE	I-3, A-REI-4, F-IF-5, F-IF-7,				

Solve and graph simple rational and radical equations and inequalities. Understand rational function models and there graphs. Effects of graphs using technology.								
		ere						
Math Practices: Make sense of problems and persevere in solving them, Reason abstractly and quantitatively, Construct								
to precision, Look for and make use of structure.								
21 st Century Themes								
X	Global Awareness	X	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy			
21 st Century Skills								
	Creativity and Innovation	Х	Critical Thinking and Problem Solving	X	Communication and Collaboration			
	Media Literacy		ICT Literacy	Х	Life and	Career Skills		

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