	Pine Hill Public Schools							
Content A	rea:	Mathematics	Mathematics					
Course Tit	tle/ Grade Level:	Advanced Geor	lvanced Geometry /Grade 10					
Unit 1:	Foundations of Ge	ometry	Duration	4 Weeks				
Unit 2:	Geometric Reason	ing	Duration	4 Weeks				
Unit 3:	Parallel and Perpe	endicular Lines	Duration	4 Weeks				
Unit 4:	Triangle Congru	ence	Duration	4 Weeks				
Unit 5:	Properties and A Triangles	ttributes of	Duration	4 Weeks				
Unit 6:	Polygons and Qu	adrilaterals	Duration	4 Weeks				
Unit 7:	Similarity		Duration	4 Weeks				
Unit 8:	Right Triangles a Trigonometry	ind	Duration	4 Weeks				
Unit 9:	Circles		Duration	4 Weeks				
Unit 10:	***Extending Pe Circumference, a		Duration	2 Weeks				
Unit 11:	***Spatial Reaso	ning	Duration	2 Weeks				
BOE Appro	oved Revision:							
BOE Initial	l Adoption Date: J	une 20, 2017						

^{***}if times allows

Pine Hill Public Schools								
	Mathematics Curriculum							
Unit Title: For	ındations of	Geometry			Unit #: 1			
Course or Grad	e Level: Ad	vanced Geometry	Length of	Time: 20 days				
Pacing		ay introduction to course, assessment days	2 days per section, o	covering all sections in	n chapter 1, 2 review day and 2			
Essential Questions	How do vHow do vHow do v	points, lines, segments, rave measure line segments we apply formulas for find we apply and use the midp the transformations in the	and angles? ling perimeter, area a point and distance for	mula?	d translation)			
Content	Points, linAngle meFormulasMidpoint	nes, planes easure s, i.e. Perimeter, area and o and distance formulas	•		,			
Skills	Identify pMeasure aIdentifyinCalculatinUsing forUsing ord	Transformations Identify points, lines and planes Measure and drawing line segments and angles Identifying special pairs of angles Calculating segments lengths and angle measure involving algebraic expressions Using formulas to find perimeter, area and circumference Using ordered pairs to calculate midpoint and distance of segments in the coordinate plane Identify basic transformations in the coordinate plane						
Assessments	Formative: • Teacher o • Seat and o • Homework	bservation and questioning group work	(Summative: • Quizzes, tests and b	penchmark			
Interventions / differentiated instruction	• Students :	given handouts of power p given access to online tex group work						
Inter-disciplin ary Connections	• Using alg	ebra to solve problems in	volving line segment	s, angles, perimeter a	nd area			
Lesson resources / Activities	Power poTextbookScientificOnline text	Dougal Geometry , copyrigint resources practice worksheet Calculator atbook (www.hrw.com) ion and measuring of seg New Jersey Student	ments and angles					
Grade or Conce	ntual Cateo	ory (HS only): Geome		ioi iviamemanes				
Grade of Conce	ptuai Categ	ory (115 omy). Geome	ici y					
Domain (name a	and #): Cong	gruence						
Cluster: Experi transformations plane.		#. Standard: G-CO-1						
Understand con terms of rigid m	_	G-CO-2 G-CO-3						

		(G-CO-4					
		•	G-CO-5					
Math	Math Practices: 1. Make sense of problems and persevere in solving them 5. Use appropriate tools strategically 8. Look for and express regularity in repeated reasoning							
			21st Century	Then	<u>nes</u>			
X	Global Awareness	X	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy	
			21st Centur	<u>y Skil</u>	<u>ls</u>			
	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy	
	Media Literacy		ICT Literacy	X	Life and	Caree	r Skills	
8.1	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.							
Stran C	d:		Content Statement: Students interact, collaborate wir peers using variety of media and formats.		Indicator: 8.1.12.C.1			

	Pine Hill Public Schools						
	Mathematic	s Curriculum					
Unit Title: Ge	ometric Reasoning		Unit #: 2				
Course or Grad	Course or Grade Level: Advanced Geometry Length of Time: 13 days						
Pacing	13 days, 1.5-2 days per section, covering sec days	tions 2-1-2-6 skip 2-3, 2 review da	ays and 2 summative assessment				
Essential Questions	 How is inductive reasoning used to identify How do we analyze the truth value of continuous How do we identify properties of equality How do we use deductive reasoning in processing in	ditional statements? and congruence?					
Content	 Inductive reasoning, conjecture and counted Conditional statement, hypothesis and conditional Statements and Definitions Properties of equality Algebraic equations Theorem and two column proofs 		trapositives, and inverse)				
Skills	 Make a conjecture and find examples and Identify parts of conditional statements (2 Be able to write the converse of a conditional write and analyze biconditional statement Identify properties of equality and congruent Understand the concept of a two column properties 	.2 skip truth values, contrapositive onal statement as ence	s, and inverse)				
Assessments	Formative: Teacher observation and questioning Seat and or group work Homework Student participation at board	Summative: • Quizzes, tests and b	penchmark				
Interventions / differentiated instruction	 Students given handouts of power point no Students given access to online textbook Partner or group work 	otes					
Inter-disciplin ary Connections	 Using algebra to solve problems involving Using Biology to make conjectures and co 						
Lesson resources / Activities	 Holt McDougal Geometry , copyright 201 Power point resources Textbook practice worksheet Scientific Calculator Online textbook (www.hrw.com) 	1 – Chapter 2, sections 1,2,5,6					
	New Jersey Student Learnin	ng Standards for Mathematics					
Grade or Conce	eptual Category (HS only): Geometry						
Domain (name a	and #): Congruence						

l .	ter: Experiment with	#	#. Standard:					
transformations in the plane.		(G-CO-9					
-	e. erstand congruence ir	,						
l l	is of rigid motions.	_						
Math	Practices: 2. Reason al							
	3. Model w							
	6. Attend to	pre		T1				
			21st Century	<u>I nen</u>	<u>nes</u>			
X	Global Awareness	C	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy	
			21st Centur	y Skil	<u>lls</u>			
	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy	
	Media Literacy		ICT Literacy	X	Life and	Caree	r Skills	
8.1	8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize							
	Educational Techn	<u> </u>	<u>y:</u> Ali students will use digi	tal to	ols to access, manage,	evalu	ate, and synthesize	
		•	solve problems individually		, , , , , , , , , , , , , , , , , , ,		•	
		•	5.	and c	, , , , , , , , , , , , , , , , , , ,		· •	
Stran	information in orde	•	solve problems individually	and c	collaborate and to creat Indicator:		· •	
Stran C	information in orde	•	solve problems individually knowled	and odge.	collaborate and to creat		· •	

Pine Hill Public Schools						
	Mathematics	Curriculum				
Unit Title: Par	rallel and Perpendicular Lines	Unit #: 3				
Course or Grad	e Level: Advanced Geometry	Length of Time: 16 days				
Pacing	16 days, 2 days per section, covering all secti	ons in chapter 3, 2 review days and 2 summative assessment days				
Essential Questions	 What are the differences between parallel, What ware the different angle pairs formed What is the relationship of angles formed be How are angles formed by a transversal us What are the characteristics of perpendicula How are slopes used to determines whether How do you use the equation in point slope How do you use the equation in slope interest 	by two lines and a transversal by two parallel lines and a transversal ed to prove that two lines are parallel ar lines a line is parallel or perpendicular form to graph a line				
Content	 Parallel, perpendicular, skew lines and planes Transversal, corresponding angles, alternate interior and exterior angles, same side interior angles Perpendicular lines Perpendicular bisector Slopes of lines Equations of lines in point slope and slope intercept form 					
Skills	 Identify parallel, perpendicular and skew I Be able to use the different pairs of angles Determine whether lines are parallel by the Understand all properties of perpendicular Determine the slope of a line Use the point slope and slope intercept equ To be able to graph equations of lines on a 	formed by two lines and a transversal angles formed with a transversal lines ations to compare lines				
Assessments	Formative: • Teacher observation and questioning • Seat and or group work • Homework • Student participation at board	Summative: • Quizzes, tests and benchmark				
Interventions / differentiated instruction	 Students given handouts of power point not Students given access to online textbook Partner or group work 	es				
Inter-disciplin ary Connections	 Using algebra to solve problems involving Using Music to show that instruments have 					

Lesso		Holt McDougal Geometry, copyright 2011 – Chapter 3, all sections Dougan point recourses.						
resou Activ	11 005 /	 Power point resources Textbook practice worksheet 						
Acuv	THE	• Student drawing of lines and tranversals						
			Calculator					
	•	Online te	xtbook (<u>www.hrw.com</u>)					
			Navy Iorgan Student I coming	Standa	rds for Mothematics			
C	l	-1 C-4	New Jersey Student Learning S	Standa	rds for Mathematics			
			ory (HS only): Geometry					
	ain (name and							
	ter: Experime		#. Standard:					
plane	sformations in	tne	G-CO-1					
_	erstand congru	ence in	G-CO-9					
term	s of rigid moti	ons.	G-CO-12					
Dom	ain (name and	#) : Exp	ressing Geometric Properties v	vith e	quations			
Clus	ter: Use coor	dinates	G-GPE-5					
_	ove simple ge							
theor	rems algebraic	ally						
3.5 (1	D 11 0 0	.			0. 4			
Math			viable arguments and critique the real mathematics	soning	g of others			
			nake use of structure					
			21st Century	Ther	<u>nes</u>			
X	Global Awaren	iess X	Financial, Economic,		Civic Literacy		Health Literacy	
			Business, and Entrepreneurial					
			Literacy 21 st Centur	v Clri	lla			
	G .: ::	1 7		*				
	Creativity an Innovation		Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy	
	Media Litera		ICT Literacy	X	Life and	Caree	r Skills	
8.1	Educational	Technol	ogy: All students will use digi	tal to	ols to access, manage.	evalu	ate, and synthesize	
			o solve problems individually		, ,		· •	
			knowle					
Stran	d:		Content Statement:		Indicator:			
C			Students interact, collaborate wi		8.1.12.C.1			
			peers using variety of media and					
			formats.					

	Pine Hill Public Schools								
	Mathematics Curriculum								
Unit Title:	Unit Title: Triangle Congruence Unit #: 4								
Course or C	Grade Level: Advanced Geometry	Length of Time: 20 days							
Pacing	20 days, 2 days per section, covering section days	4-1-4-8 skip 4-7, 2 review days and 2 summative assessment							
Essential Questions	 How are triangles classified by their angle What is the relationship between the interi What makes triangles congruent What is side-side-side (SSS) congruence What is side-angle-side (SAS) congruence What is angle-side-angle (ASA) congruence What is angle-angle-side (AAS) congruence What is hypotenuse-leg (HL) congruence What does CPCTC represent What are the special relationships of an iso 	or and exterior angle of a triangle e							
Content	 Acute, Right, Obtuse and equiangular Tria Isosceles. Equilateral and scalene triangles Triangle sum theorem Exterior angles and remote interior angles Corresponding angles and sides Included angles Included side Non included side Isosceles triangles, base angles, legs, verte 								
Skills	 Identify congruent angles and sides Classify triangles by angles and sides Calculate angle measures Identify congruent triangles Prove triangles are congruent by SSS, SAS Use corresponding parts of triangles to sho Identify which theorem to use when proving Identify corresponding parts of triangles Apply isosceles and equilateral triangle the 	, ASA, AAS and HL w congruence of triangles g that triangles are congruent							

_	4 E				Summative:			
Assessi							u].	
ı								
		 Seat and or group work Homework 						
		Student participation at board						
Interve			given handouts of power point notes					
differe			given access to online textbook					
instruc	etion	Partner or	r group work					
Inton d	lisciplin •	Heina ala	gebra to solve problems involving mi	iccina	angles or sides of triangles			
			tronomy to find distance and angles					
ary Conne		Comg 1 to	tronomy to mid distance and angres	50000	on planets			
Lesson			Dougal Geometry, copyright 2011 –	Chapt	er 4, all sections except sec	tion 7		
resour	ces ,		int resources practice worksheet					
Activit			rawing of triangles					
			Calculator					
	•	Online te	xtbook (<u>www.hrw.com</u>)					
			New Jersey Student Learning S	Standa	rds for Mathematics			
Grade	or Conceptu	ıal Categ	ory (HS only): Geometry					
Domai	n (name and	#): Con	gruence					
	r: Understar		#. Standard:					
_	ence in term	is of	G-CO-6					
rigia n	notions.		G-CO-7					
Prove :	geometric the	eorems	G-CO-8					
			G-CO-9					
			G-CO-10					
Domai	n (name and	#):	Similarity, right triangles and trigonometry					
Cluster	r: Prove theo	orems	G-SRT-5					
involvi	ng similarity	7						
Math P	ractices: 1. 1	Make sens	se of problems and persevere in solv	ing the	em			
			stractly and quantitatively					
			h mathematics					
			priate tools strategically	aanin	~			
	δ. 1	LOOK TOF a	and express regularity in repeated rea 21st Century					
v	C1 1 1 1	1 17		1 1101			TT 1:1 7 1:	
X	Global Awaren	iess X	Financial, Economic,		Civic Literacy		Health Literacy	
			Business, and Entrepreneurial Literacy					
			21st Centur	y Ski	lls			
	Creativity an	id X	Critical Thinking and Problem	X	Communication and		Information Literacy	
	Innovation		Solving		Collaboration			
	Media Literac	cy	ICT Literacy	X	Life and	Caree	r Skills	
81 F	ducational '	Technol	ogy: All students will use digi	tal to	ols to access manage	evalu	ate and synthesize	

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:	Content Statement:	Indicator:
C	Students interact, collaborate with	8.1.12.C.1
	peers using variety of media and	
	formats.	

	Pine Hill Public Schools								
	Mathematics Curriculum								
Unit Title: P	Unit Title: Properties and Attributes of Triangles Unit #: 5								
Course or Gra	Course or Grade Level: Advanced Geometry Length of Time: 15 days								
Pacing	15 days, 2 days per section, covering section assessment days	s 5-1 – 5-8 skip 5-2, 5-6, 2 review	days and 2 summative						
Essential Questions	 Given a problem how would you know wh How are medians used to determine measu What is a midsegment of a triangle? How is the Pythagorean theorem used to fi What are special right triangles? How do medians differ from altitudes? 	res of a triangle?	triangle?						
Content	 Perpendicular and angle bisectors Medians and altitudes of triangles The triangle midsegment theorem Inequalities in one triangle (skip indirect p Finding simplest radical form The Pythagorean Theorem Applying special right triangles 	roof)							
Skills	 Applying special right triangles Identify perpendicular lines Draw and identify medians of triangles Know how to simplify radicals Know the difference between the two special right triangles (30-60-90; 45-45-90) Know how to use the triangle inequality theorem Determine the lengths of the sides of a triangle using the Pythagorean theorem Be able to find the longest side of a triangle by using the Pythagorean inequality theorem 								
Assessments	Formative: • Teacher observation and questioning • Seat and or group work • Homework	Summative: • Quizzes, tests and b							

		• Stude	ent na	articipation at board					
Inte	rventions /	• •							
	rentiated	Students given access to online textbook							
	uction	Partner or group work							
Inte	r-disciplin	• Use t	rades	and shops to show how the Pythag	orean	theorem			
ary	discipini								
-	nections								
	on urces / vities	 Holt McDougal Geometry , copyright 2011 – Chapter 5, all sections except section 5 (indirect proof) & section 6 Power point resources Textbook practice worksheet Student drawing of triangles Scientific Calculator Online textbook (www.hrw.com) 							
				New Jersey Student Learning S	Standa	rds for Mathematics			
Grad	de or Conce _l	otual Ca	atego	ory (HS only): Geometry					
Dom	ain (name a	nd #): (Cong	ruence					
	ter: Prove g	geometr	ric	#. Standard:					
theo	rems			G-CO-10					
				G-CO-13					
Math		 Const Mode 	truct el wit	e of problems and persevere in solve viable arguments and critique the re h mathematics priate tools strategically	asonir	ng of others			
				21st Century	Then	<u>nes</u>			
X	Global Awa	reness	X	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy	
				21st Centur	<u>y Ski</u>	<u>lls</u>			
	Creativity Innovati		X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy	
	Media Lite	eracy		ICT Literacy	X	Life and (Caree	r Skills	
<u>8.1</u>				ogy: All students will use digits solve problems individually knowled	and o	_			
Stran C	d:			Content Statement: Students interact, collaborate wi peers using variety of media and formats.		Indicator: 8.1.12.C.1			

Pine Hill Public Schools Mathematics Curriculum								
Unit Title: Polygons and Quadrilaterals Unit #: 6								
Course or Grade Level: Advanced Geometry Length of Time: 16 days								
Pacing	Pacing 16 days, 2 days per section, covering sections in chapter 6, 2 review days and 2 summative assessment days							
Essential Questions	 What determines the polygon? What are the special names given to certain How can the angle sum of any triangle be d How are interior and exterior angles of a po What are the characteristics of a parallelogr How do you determine that a quadrilateral i How are the angles and diagonals used to d What are the similarities and differences be How do kites and trapezoids differ from par 	etermined? lygon related? am? s a parallelogram? etermine whether a quadrilateral is a parallelogram? ween a parallelogram and a rhombus?						
Content	 Properties and Attributes of polygons Properties of parallelograms Conditions for Parallelograms Properties of special parallelograms Conditions for special parallelograms Properties of kites and trapezoids 							
Skills	 Identify a polygon by number of sides Calculate the interior angles of a polygon Know the properties of parallelograms How to prove that a quadrilateral is a parall Know the properties and conditions of spec 							

	ssments	Format	ive:			Summative:	
11330	Silicits			servation and questioning		 Quizzes, tests and bench 	mark
• Seat and						Quilles, tools and conc.	
		• Hom					
		• Stud	ent par	rticipation at board			
Inte	rventions /	• Stud	ents gi	iven handouts of power point notes			
diffe	rentiated	Students given access to online textbook					
instr	uction	Partner or group work					
T4-	. dissimble	• Haa	nhataa	graphy and how it relates to quadril	atama1	ahana	
	r-disciplin			on and the different quadrilateral sh		snapes	
ary	4•	Cons	sirucii	on and the different quadrilateral si	iapes		
Con	nections						
Less	on	• Holt	McDo	ougal Geometry, copyright 2011 -	Chapt	er 6, all sections	
reso	urces /			nt resources			
Acti	vities			practice worksheet			
				awing of polygons and quadrilatera	ls		
				Calculator			
		• Onli	ne text	tbook (<u>www.hrw.com</u>)			
				New Jersey Student Learning S	Standa	rds for Mathematics	
Cro	da au Canaa	ntual C	ataga	•	Juna	ids for Mathematics	
Gra	ue or Conce	ptuai C	atego	ry (HS only): Geometry			
Don	nain (name a	and #): (Congi	ruence			
Don	(_				
Clus	ter: Prove	geometi	ric	#. Standard:			
Clus		geometi		#. Standard: G-CO-11			
Clus	ter: Prove	geometi					
Clus	ter: Prove	geometi					
Clus theo	ter: Prove			G-CO-11			
Clus theo	ter: Prove	4. Mode	el with	G-CO-11 mathematics			
Clus theo	ter: Prove	4. Mode 5. Use a	el with	mathematics riate tools strategically			
Clus theo	ter: Prove	4. Mode 5. Use a	el with	mathematics riate tools strategically d make use of structure			
Clus theo Matl	rems	4. Mode 5. Use a 7. Look	el with ppropi	mathematics riate tools strategically d make use of structure 21st Century	Then		
Clus theo	ter: Prove	4. Mode 5. Use a 7. Look	el with	mathematics riate tools strategically d make use of structure 21st Century Financial, Economic,	Then	nes Civic Literacy	Health Literacy
Clus theo Matl	rems	4. Mode 5. Use a 7. Look	el with ppropi	mathematics riate tools strategically d make use of structure 21st Century Financial, Economic, Business, and Entrepreneurial	Then		Health Literacy
Clus theo Matl	rems	4. Mode 5. Use a 7. Look	el with ppropi	mathematics riate tools strategically d make use of structure 21st Century Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy	Health Literacy
Clus theo Matl	rems	4. Mode 5. Use a 7. Look	el with ppropi	mathematics riate tools strategically d make use of structure 21st Century Financial, Economic, Business, and Entrepreneurial		Civic Literacy	Health Literacy
Clus theo Matl	rems	4. Mode 5. Use a 7. Look areness	el with ppropi	mathematics riate tools strategically d make use of structure 21st Century Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy	
Clus theo Matl	Global Awa	4. Mode 5. Use a 7. Look areness y and ion	el with ppropi for an	mathematics riate tools strategically d make use of structure 21st Century Financial, Economic, Business, and Entrepreneurial Literacy 21st Centur Critical Thinking and Problem Solving	y <mark>Skil</mark> X	Civic Literacy Lls Communication and Collaboration	Information Literacy
Clus theo Matl	rems Practices: Global Awa	4. Mode 5. Use a 7. Look areness y and ion	el with ppropi for an	mathematics riate tools strategically d make use of structure 21st Century Financial, Economic, Business, and Entrepreneurial Literacy 21st Centur Critical Thinking and Problem	y Ski	Civic Literacy Ils Communication and	Information Literacy
Clus theo Matl	Creativity Innovat Media Lit	4. Mode 5. Use a 7. Look areness y and ion eracy	el with ppropi for an	mathematics riate tools strategically d make use of structure 21st Century Financial, Economic, Business, and Entrepreneurial Literacy 21st Centur Critical Thinking and Problem Solving ICT Literacy	y Skil	Civic Literacy Ils Communication and Collaboration Life and Ca	Information Literacy
Clus theo Math	Creativity Innovat Media Lit	4. Mode 5. Use a 7. Look areness y and ion eracy	el with ppropi for an	mathematics riate tools strategically d make use of structure 21st Century Financial, Economic, Business, and Entrepreneurial Literacy 21st Centur Critical Thinking and Problem Solving ICT Literacy gy: All students will use digi	y Skil X X tal to	Civic Literacy Communication and Collaboration Life and Ca	Information Literacy areer Skills aluate, and synthesize
Clus theo Math	Creativity Innovat Media Lit	4. Mode 5. Use a 7. Look areness y and ion eracy	el with ppropi for an	mathematics riate tools strategically d make use of structure 21st Century Financial, Economic, Business, and Entrepreneurial Literacy 21st Centur Critical Thinking and Problem Solving ICT Literacy gy: All students will use digital solve problems individually	y Skil X X tal to and a	Civic Literacy Communication and Collaboration Life and Ca	Information Literacy areer Skills aluate, and synthesize
Clus theo Matl	Creativity Innovat Media Lit Education informatic	4. Mode 5. Use a 7. Look areness y and ion eracy	el with ppropi for an	mathematics riate tools strategically d make use of structure 21st Century Financial, Economic, Business, and Entrepreneurial Literacy 21st Centur Critical Thinking and Problem Solving ICT Literacy gy: All students will use digit solve problems individually knowled	y Skil X X tal to and a	Civic Literacy Communication and Collaboration Life and Ca colls to access, manage, every collaborate and to create and to cre	Information Literacy areer Skills aluate, and synthesize
Clus theo	Creativity Innovat Media Lit Education informatic	4. Mode 5. Use a 7. Look areness y and ion eracy	el with ppropi for an	mathematics riate tools strategically d make use of structure 21st Century Financial, Economic, Business, and Entrepreneurial Literacy 21st Centur Critical Thinking and Problem Solving ICT Literacy gy: All students will use digit solve problems individually knowled Content Statement:	x X tal to and odge.	Civic Literacy Communication and Collaboration Life and Callot to access, manage, every collaborate and to create a collaboration.	Information Literacy areer Skills aluate, and synthesize
Clus theo	Creativity Innovat Media Lit Education informatic	4. Mode 5. Use a 7. Look areness y and ion eracy	el with ppropi for an	mathematics riate tools strategically d make use of structure 21st Century Financial, Economic, Business, and Entrepreneurial Literacy 21st Centur Critical Thinking and Problem Solving ICT Literacy gy: All students will use digit solve problems individually knowled	X X tal to and odge.	Civic Literacy Communication and Collaboration Life and Ca colls to access, manage, every collaborate and to create and to cre	Information Literacy areer Skills aluate, and synthesize

	Pine Hill Public Schools							
Mathematics Curriculum								
Unit Title: Similarity Unit #: 7								
Course or Grade Level: Advanced Geometry Length of Time: 12 days								
Pacing 12 days, 2 days per section, covering sections in chapter 7 except 7-6, 2 review days and 2 summative assessment days								
Essential Questions	 What is a ratio? What is a proportion? How many ways can a ratio be written? How do you use proportions to see whether triangles are similar? What are the means and extremes and how are they used? How are sides and angles used to determine triangle similarity? Explain how you would draw a picture to scale. How is an angle bisector used to find measurements of the sides of a triangle? How do we use proportions in determining whether items are drawn to scale? How are ratios used to determine the slope of a line? 							
Content	 Ratio and Proportion & Ratios in similar po Triangle similarity: AA, SSS, SAS Applying properties of similar triangles Using proportional relationships 	olygons (combine 7.1 & 7.2)						
Skills	Simplifying ratios							

		• Solve						
				ortions representing similar figures	\$			
				similar figures				
			• Identifying similar triangles by using AA, SAS, SSS					
				ngular similarity theorem to determ	mine w	hether triangles are similar		
				o determine the slope of a line				
				g measures using indirect measure	ement			
Asses	ssments	Formativ				Summative:		
				servation and questioning		 Quizzes, tests and ben 	ichmai	rk
				group work				
		Home	work					
		Student participation at board						
Inter	ventions /							
diffe	rentiated	Studen	nts giv	ven access to online textbook				
	uction	Partner or group work						
Inter	-disciplin			and the scales of maps				
ary		 Histor 	y and	population – ratios and proportion	ns used	1		
Conr	nections							
Lesso	on	Holt N	ЛсDo	ugal Geometry . copyright 2011 –	Chapte	er 7. all sections except 7-6.		
	irces /	 Holt McDougal Geometry, copyright 2011 – Chapter 7, all sections except 7-6. Power point resources 						
Activ			1	ractice worksheet				
Acuv	vities			wing of polygons and triangles				
				alculator				
				book (<u>www.hrw.com</u>)				
			o tonte	(<u> </u>				
				New Jersey Student Learning S	Standar	rds for Mathematics		
Grad	le or Conce	ntual Ca	tegor	y (HS only): Geometry				
Gruc		pruur ou	eegor	y (118 omy). Geometry				
Dom	ain (name a	nd #): Si	imila	rity, right triangles and trigo	nomte	erv		
	ter: Unders	_	#	t. Standard:				
	arity in teri			G-SRT-2, 3, 4, 5				
simil	arity transf	ormatioi	ns —					
Math				of problems and persevere in solving	ng ther	n		
4. Model with mathematics								
	6. Attend to precision							
				21st Century	Then	<u>ies</u>		
X	Global Awa	areness	X	Financial, Economic,		Civic Literacy		Health Literacy
				Business, and Entrepreneurial		•		,
				Literacy				
				21st Centur	y Skil	<u>ls</u>		
	Creativity	z and	X	Critical Thinking and Problem	X	Communication and		Information Literacy
	Innovat			Solving	11	Collaboration		information Literacy
	Media Lit			ICT Literacy	X	Life and	Caree	r Skills
				•				
8.1			_	y: All students will use digi		, ,		•
	informatic	on in ord	er to	solve problems individually	and c	collaborate and to creat	e and	communicate
				knowled				

Strand:	Content Statement:	Indicator:
C	Students interact, collaborate with	8.1.12.C.1
	peers using variety of media and	
	formats.	

Pine Hill Public Schools							
Mathematics Curriculum							
Unit Title: Right Triangles and Trigonometry Unit #: 8							
Course or Grade Level: Advanced Geometry Length of Time: 14 days							
Pacing	14 days, 2 days per section, covering sections in chapter 8 except 8-6, 2 review days and 2 summative assessment days						
Essential Questions	 How is the geometric mean used to determine side lengths of a triangle? How are the trigonometric ratios similar and different? How are the trigonometric ratios used to determine sides and angles of a right triangle? How do you determine which trigonometric ratio to use in working with right triangles? How are the angle of elevation and angle of depression used to determine missing information on a problem? Are all trigonometric ratios greater than zero? 						
Content	 Similarity in Right Triangles Trigonometric ratios Solving right triangles Angles of elevations and depression 						

	• Love of	faines and againes				
CI 'II		f sines and cosines				
Skills		ne what right triangles are similar				
		te the geometric mean				
		onometric ratios to solve problems				
		ssing measures of right triangles using trigonometric ratios				
		roblems using angle of elevation and angle of depression				
		ow to and when to use the inverse of sine, cosine and tangent				
		ow to find the trigonometric ratios using a scientific calculator				
<u> </u>		law of sines and cosines to solve problems				
Assessments	Formative:					
		observation and questioning • Quizzes, tests and benchmark				
	Seat andHomewo	d or group work				
		participation at board				
Indonesandiona /		• •				
Interventions /		s given handouts of power point notes s given access to online textbook				
differentiated		or group work				
instruction	• Farmer o	51 group work				
Inter-disciplin	Survey as	and construction – use the trigonometric functions to find angles and sides				
ary						
Connections						
Lesson	▲ Holt MoI	Dougal Geometry, copyright 2011 – Chapter 8, all sections except 8-6.				
_						
resources /	Power point resources Touthook protion worksheet					
Activities	 Textbook practice worksheet Student drawing of right triangles Scientific Calculator 					
		extbook (www.hrw.com)				
	• Omme te	CALDOOK (<u>www.mw.com</u>)				
		New Jersey Student Learning Standards for Mathematics				
Grade or Conce	ptual Categ	gory (HS only): Geometry				
Domain (name a	and #): Simi	nilarity, right triangles and trigonomtery				
Cluster: Define	!	#. Standard:				
trigonometric ra	atios and	G-SRT-6, 7, 8				
solve problems		G-5K1-0, 7, 0				
right triangles	, 01, 111 g					
right triangles						
Classian Amelia		# Standard				
Cluster: Apply	•	#. Standard:				
trigonometry to	general	G-SRT-10, 11				
triangles						
		se of problems and persevere in solving them				
		th mathematics				
	5. Attend to p					
,	7. Look for a	and make use of structure				
		21st Century Themes				

X	Global Awareness	X	Financial, Economic,		Civic Literacy		Health Literacy
			Business, and Entrepreneurial				
			Literacy				
			21st Centur	y Ski	<u>lls</u>		
	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy	X	Life and	Caree	r Skills
<u>8.1</u>	Educational Tech	nolog	y: All students will use digi	tal to	ols to access, manage,	evalu	ate, and synthesize
information in order to solve problems individually and collaborate and to create and communicate				l communicate			
	knowledge.						
Stran	d:		Content Statement:		Indicator:		
C			Students interact, collaborate with	th	8.1.12.C.1		
			peers using variety of media and				
			formats.				

	Pine Hill Public Schools								
Mathematics Curriculum									
Unit Title: Cir	rcles		Unit #: 9						
Course or Grade									
Pacing	18 days, 2 days per section, covering all sections in chapter 11, 2 review days and 2 summative assessment days								
Essential Questions	 What is a chord and where is it located on a circle? What is a secant and where is it located on a circle? What is a tangent and where is it located on a circle? What is the difference between a chard and diameter of a circle? What are concentric circles and what do they have in common? What is the difference between a major and a minor arc? What is the sector of a circle? 								

How do we identify inscribed angles of a circle? How do you find the area of a sector? How do we determine angles formed by chords and tangents? Content Lines that intersect circles Ares and chords Sector area and arc length Inscribed angles Angle relationships in circles Segment relationships in circles Circles in the coordinate plane Skills Identify lines and segments pertaining to circles Daraw circles showing chords, secants and tangents Find the major and minor ares of circles Determine sector area and arc length Determine the measure of inscribed angles in circles Find angles measures using secants and tangents Find angles measures using secants and tangents Formative: Teacher observation and questioning Seat and or group work Homework Student participation at board Interventions / differentiated instruction Inter-disciplin ary Connections Lesson resources / Activities Holt McDougal Geometry, copyright 2011 – Chapter 11, all sections resources / Power point resources Textbook practice worksheet							
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resources / Activities • Power point resources • Textbook practice worksheet							
Activities • Textbook practice worksheet							
Activities • Textbook practice worksheet							
Student drawing of circles and all of it components							
Scientific Calculator							
• Online textbook (www.hrw.com)							
New Jersey Student Learning Standards for Mathematics							
Grade or Conceptual Category (HS only): Geometry							
Domain (name and #): Congruence							
Cluster: Experiment with #. Standard:							
transformations in the G-CO - 1							
plane							
Domain (name and #): Circles							
Cluster: Understanding #. Standard:							
and apply theorems about $G-C-1, 2, 3, 4$							
circles							

Dom	Domain (name and #): Expressing Geometric Properties with equations						
Clus	ter: Translate	7	#. Standard:				
	een the geometric	(G-GPE – 1				
description and the equation for a conic							
section							
	G-SRT-10, 11						
Math Practices: 1. Make sense of problems and persevere in solving them 4. Model with mathematics 5. use appropriate tools strategically							
21st Century Themes							
X	Global Awareness	X	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy
21st Century Skills							
	Creativity and Innovation	X	Critical Thinking and Problem Solving	X	Communication and Collaboration		Information Literacy
	Media Literacy		ICT Literacy	X	Life and	Caree	r 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.							
Stran C	d:		Content Statement: Students interact, collaborate wi peers using variety of media and formats.	th	Indicator: 8.1.12.C.1		

Pine Hill Public Schools							
Mathematics Curriculum							
Unit Title: Extending Perimeter, Circumference, and Area Unit #: 10							
Course or Grade Level: Advanced Geometry ***If time allows: Length of Time: 12 days							
Pacing	12 days, 2 days per section, covering sections 9-1 – 9-4, 2 review days and 2 summative assessment days						
Essential	How do you find the area of all geometric figures using the length of the base, height, or the diagonals?						
Questions	How can you find the area of a regular polyHow can you find the perimeters and areas						

Cont	Ontent Developing Formulas for Triangles and Quadrilaterals									
	Developing Formulas for Circles and Regular Polygons Composite Figures									
	 Composite Figures Perimeter and Area in the Coordinate Plane 									
Skills										
SKIIIS	S	Develop and apply the formulas for the Area of Triangles and Special Quadrilaterals Develop and apply the formulas for the Area and Circumference of a Circle.								
		 Develop and apply the formulas for the Area and Circumference of a Circle Use the Area Addition Postulate to find the Areas of Composite Figures 								
	 Use the Area Addition Postulate to find the Areas of Composite Figures Find the Perimeters and Areas of figures in Coordinate Plane 									
Asse	Assessments Formative: Summative:									
11330	Assessments Formative: Summative: ● Teacher observation and questioning ● Quizzes, tests and benchmark							rk		
	Seat and or group work									
	Homework									
	Student participation at board									
Inter	ventions /	• Studen	ts giv	ven handouts of power point notes						
diffe	rentiated		_	ven access to online textbook						
instr	• Partner or group work									
	-disciplin	• History	y: Ge	ography example 23, page 626.						
ary										
Conr	nections									
Lesso	on			ugal Geometry, copyright 2011 -	Chapt	er 11, all sections				
resou	irces /			resources						
Activ	vities	Textbook practice worksheet								
				wing of circles and all of it compo	nents					
	Scientific Calculator									
		• Online	textt	book (<u>www.hrw.com</u>)	Namala.	uda Can Mathamatica				
	• /	1.00		New Jersey Student Learning S	Standa	ius foi Mamemanes				
Dom	ain (name a	nd #): Go	eome	etry						
Clust			#	#. Standard:						
	y geometric co ling situations		(G-MG						
Give	an informal ar	gument fo	r	G-MD.A						
	rmulas for the									
	circumference of a circle and									
area o	of geometric fi	gures.								
Math				of problems and persevere in solving	ng thei	n				
	4. Model with mathematics									
	5. use appropriate tools strategically 21st Century Themes									
X	Global Awa	ranaga	X					Hoolth Litarray		
Λ	Giobai Awa	reness	/ \	Financial, Economic, Business, and Entrepreneurial		Civic Literacy		Health Literacy		
				Literacy						
	21st Century Skills									
	Creativity and			Critical Thinking and Problem	X	Communication and		Information Literacy		
Innovation			Solving		Collaboration					
l l				<i>U</i>						
	Media Lite	eracy		ICT Literacy	X	Life and	Caree	r Skills		

Е

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:	Content Statement:	Indicator:			
C	Students interact, collaborate with	8.1.12.C.1			
	peers using variety of media and				
	formats.				

	Pine Hill Public Schools						
Mathematics Curriculum							
Unit Title: Spatia	al Reasoning Unit #: 11						

Course or Grad	e Level: Adv	vanced Geometry	*** If time allows: Length of Time: 24 days			
Pacing	24 days, 2 days per section, covering all sections in chapter 10, 2 review days and 2 summative assessment days					
Essential Questions	 What are the most effective tools to determine and calculate measurements? How can you investigate and analyze properties of two and three dimensional figures? 					
Content	 Solid Geometry Representations of Three-Dimensional Figures Formulas in Three Dimensions Surface Area of Prisms and Cylinders Surface Area of Pyramids and Cones Volume of Prisms and Cylinders Volume of Pyramids and Cones Spheres 					
Skills	 Classify Three-Dimensional figures according to their properties Draw representations of Three-Dimensional figures Apply Euler's formula to find the number of Vertices, Edges, and Faces of a Polyhedron Learn and apply the formula for the Surface Area of a Prism Learn and apply the formula for the Surface Area of a Pyramid and Cone Learn and apply the formula for the Volume of a Prism and Cylinder Learn and apply the formula for the Volume of a Pyramid and Cone Learn and apply the formula for the Volume of a Sphere 					
Assessments	Seat and oHomeworStudent pa	articipation at board	Summative: • Quizzes, tests and benchmark			
Interventions / differentiated instruction	 Students given handouts of power point notes Students given access to online textbook Partner or group work 					
Inter-disciplin ary Connections	Biology: 6	example 2, page 715.				
Lesson resources / Activities	• Power point resources					
		· · · · · · · · · · · · · · · · · · ·	g Standards for Mathematics			
Domain (name a	and #): Geor	netry				
Cluster:		#. Standard:				
Explain volume formulas and use them to solve problems. Apply geometric concepts in modeling situations		G-MD.A G-MG.A				
2	4. Model with	e of problems and persevere in so mathematics riate tools strategically	lving them			

21st Century Themes							
X	Global Awareness	X	Financial, Economic,		Civic Literacy		Health Literacy
			Business, and Entrepreneurial				
			Literacy				
21st Century Skills							
	Creativity and	X	Critical Thinking and Problem	X	Communication and		Information Literacy
	Innovation		Solving		Collaboration		
	Media Literacy		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:			Content Statement:		Indicator:		
C			Students interact, collaborate with		8.1.12.C.1		
			peers using variety of media and				
			formats.				