Pine Hill Public Schools									
Content A									
Course Title/ Grade Level: Geometry CP /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	ınd	Duration	4 weeks					
Unit 9:	Circles		Duration	4 weeks					
Unit 10:	***Extending Pe Circumference, a	rimeter, and Area	Duration	2 weeks					
Unit 11:	***Spatial Reaso	oning	Duration	2 weeks					
BOE Appro	oved Revision:								
BOE Initial	BOE Initial Adoption Date: June 20, 2017								

\*\*\* if time allows

## Pine Hill Public Schools Mathematics Curriculum

Wiathematics Curriculum										
Unit Title: Foundations of Geometry       Unit #: 1										
Course or Grade Level: Geometry CP     Length of Time: 20 days										
Pacing	20 days, 2 day introduction to course, 2 days per section, covering all sections in chapter 1, 2 review day and 2 summative assessment days									
Essential Questions	<ul> <li>What are points, lines, segments, rays and planes?</li> <li>How do we measure line segments and angles?</li> <li>How do we apply formulas for finding perimeter, area and circumference?</li> <li>How do we apply and use the midpoint and distance formula?</li> <li>What are the transformations in the coordinate plane? (reflection, rotation and translation)</li> </ul>									
Content	<ul> <li>Points, lines, planes</li> <li>Angle measure</li> <li>Formulas, i.e. Perimeter, area and circumference</li> <li>Midpoint and distance formulas</li> <li>Transformations</li> </ul>									
Skills	<ul> <li>Identify points, lines and planes</li> <li>Identifying special pairs of angles</li> <li>Calculating segments lengths and angle measure involving algebraic expressions</li> <li>Using formulas to find perimeter, area and circumference</li> <li>Using ordered pairs to calculate midpoint and distance of segments in the coordinate plane</li> <li>Identify basis transformations in the coordinate plane</li> </ul>									
Assessments	<ul> <li>Formative:</li> <li>Teacher observation and questioning</li> <li>Seat and or group work</li> <li>Homework</li> <li>Student participation at board</li> </ul>		Summative: • Quizzes, tests and b	enchmark						
Interventions / differentiated instruction	<ul> <li>Students given handouts of power point not</li> <li>Students given access to online textbook</li> <li>Partner or group work</li> </ul>	es	I							
Inter-disciplin ary Connections	• Using algebra to solve problems involving	line segme	ents, angles, perimeter a	nd area						
Lesson resources / Activities	<ul> <li>Holt McDougal Geometry , copyright 2011</li> <li>Power point resources</li> <li>Textbook practice worksheet</li> <li>Scientific Calculator</li> <li>Online textbook (<u>www.hrw.com</u>)</li> <li>Construction and measuring of segments an New Jersev Student Learning Statement</li> </ul>	– Chapter d angles	r Mathematics							

Grae	Grade or Conceptual Category (HS only): Geometry									
Dom	ain (name and #): C	ongr	uence							
Clus tran	ter: Experiment wit sformations in the	h	¥. Standard:							
plan Und	e. erstand congruence i	in (	G-CO-1							
term	is of rigid motions.		G-CO-2							
		•	G-CO-3							
		(	G-CO-4							
		(	G-CO-5							
Math	Practices: 1. Make so 5. Use app 8. Look fo	ense o ropri	of problems and persevere in solving the tools strategically at express regularity in repeated rea	ng the	m					
			<u>21<sup>st</sup> Century Th</u>	emes						
Х	Global Awareness	Х	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy			
			<u>21<sup>st</sup> Century S</u>	<u>kills</u>						
	Creativity and Innovation	Х	Critical Thinking and Problem Solving	Х	Communication and Collaboration		Information Literacy			
	Media Literacy		ICT Literacy	Х	Life and Car	eer Sk	ills			
<u>8</u> S	<b>8.1 Educational Technology:</b> 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:		<b>Content Statement:</b> Students interact, collaborate wir peers using variety of media and formats.	th	Indicator: 8.1.12.C.1					

Pine Hill Public Schools										
	Mathematic	s Curriculum								
Unit Title:	Geometric Reasoning	Unit #: 2								
Course or Grade Level: Geometry CP     Length of Time: 13 days										
Pacing	Pacing13 days, 1.5-2 days per section, covering sections 2-1-2-6 skip 2-3, 2 review days and 2 summative assessment days									
Essential Questions	<ul> <li>How is inductive reasoning used to identify patterns and make conjectures?</li> <li>How do we analyze the truth value of conditional statements?</li> <li>How do we identify properties of equality and congruence?</li> <li>How do we use deductive reasoning in proving geometric theorems?</li> </ul>									
Content	<ul> <li>Inductive reasoning, conjecture and counterexample</li> <li>Conditional statement, hypothesis and conclusion (2.2 skip truth values, contrapositives, and inverse)</li> <li>Biconditional Statements and Definitions</li> <li>Properties of equality</li> <li>Algebraic equations</li> <li>Theorem and two column fill in the blank proofs only.</li> </ul>									
Skills	<ul> <li>Make a conjecture and find examples and counterexamples</li> <li>Identify parts of conditional statements (2.2 skip truth values, contrapositives, and inverse)</li> <li>Be able to write the converse of a conditional statement</li> <li>Write and analyze biconditional statements</li> <li>Identify properties of equality and congruence</li> </ul>									
Assessment s	<ul> <li>Formative:</li> <li>Teacher observation and questionin</li> <li>Seat and or group work</li> <li>Homework</li> <li>Student participation at board</li> </ul>	Summative: • Quizzes, tests and benchmark								
Interventio ns / differentiat ed instruction	<ul> <li>Students given handouts of power p</li> <li>Students given access to online tex</li> <li>Partner or group work</li> </ul>	point notes tbook								
Inter-discip linary Connection s	<ul> <li>Using algebra to solve problems in</li> <li>Using Biology to make conjectures</li> </ul>	volving properties of equality and counterexamples								
Lesson resources / Activities	<ul> <li>Holt McDougal Geometry , copyrig</li> <li>Power point resources</li> <li>Textbook practice worksheet</li> <li>Scientific Calculator</li> <li>Online textbook (<u>www.hrw.com</u>)</li> </ul>	ght 2011 – Chapter 2, sections 1,2,5,6								

Gra	Grade or Conceptual Category (HS only): Geometry								
Dor	Domain (name and #): Congruence								
Clu	ster: Experimer	nt	#. Standard:						
witl	h transformation	IS	G-CO-9						
in t	he plane.								
Unc	lerstand								
con of r	gruence in terms	5							
011	igiu motions.								
Mat	h Practices: 2. Re	eason	abstractly and quantitatively						
	3. M	odel	with mathematics						
	6. A	ttend	to precision						
	1	n	<u>21 – Century</u>	<u>/ Ine</u>	e <u>mes</u>		1		
Х	Global	Х	Financial, Economic,		Civic Literacy		Health Literacy		
	Awareness		Business, and Entrepreneurial Literacy						
			<u>21<sup>st</sup> Centur</u>	ry Sk	<u>ills</u>				
	Creativity and	Х	Critical Thinking and	x	Communication and		Information		
	Innovation		Problem Solving		Collaboration		Literacy		
	Media Literacy		ICT Literacy	Х	Life and Career Skills				
	8.1 Education	al T	echnology: All students	will	use digital tools to	acce	ess, manage,		
eva	luate, and synth	esiz	e information in order to	solv	ve problems individu	ually	y and collaborate		
			and to create and comm	nunio	cate knowledge.				
Stra	nd:		<b>Content Statement:</b>		Indicator:				
С			Students interact, collabora	ite	8.1.12.C.1				
			with peers using variety of media and formats						
			mouta and tormats.						

Pine Hill Public Schools										
Mathematics Curriculum										
Unit Title: Pa	rallel and Perpendicular Lines		Unit #: 3							
Course or Grade Level: Geometry CP     Length of Time: 16 days										
Pacing	16 days, 2 days per section, covering all secti	ons in chapter 3, 2 review days ar	nd 2 summative assessment days							
Essential Questions	<ul> <li>What are the differences between parallel, perpendicular and skew lines</li> <li>What ware the different angle pairs formed by two lines and a transversal</li> <li>What is the relationship of angles formed by two parallel lines and a transversal</li> <li>How are angles formed by a transversal used to prove that two lines are parallel</li> <li>What are the characteristics of perpendicular lines</li> <li>How are slopes used to determines whether a line is parallel or perpendicular</li> <li>How do you use the equation in point slope form to graph a line</li> <li>How do you use the equation in slope intercept form to graph a line</li> </ul>									
Content	<ul> <li>Parallel, perpendicular, skew lines and plar</li> <li>Transversal, corresponding angles, alternat</li> <li>Perpendicular lines</li> <li>Perpendicular bisector</li> <li>Slopes of lines</li> <li>Equations of lines in point slope and slope</li> </ul>	nes e interior and exterior angles, sam intercept form	e side interior angles							
Skills	<ul> <li>Identify parallel, perpendicular and skew li</li> <li>Be able to use the different pairs of angles</li> <li>Determine whether lines are parallel by the</li> <li>Understand all properties of perpendicular</li> <li>Determine the slope of a line</li> <li>Use the point slope and slope intercept equ</li> <li>To be able to graph equations of lines on a base of the slope of a line</li> </ul>	ines formed by two lines and a transve e angles formed with a transversal lines nations to compare lines coordinate graph	rsal							
Assessments Interventions /	<ul> <li>Formative:</li> <li>Teacher observation and questioning</li> <li>Seat and or group work</li> <li>Homework</li> <li>Student participation at board</li> <li>Students given handouts of power point not</li> </ul>	Summative: • Quizzes, tests and b	enchmark							
differentiated instruction	<ul> <li>Students given access to online textbook</li> <li>Partner or group work</li> </ul>									
Inter-disciplin ary Connections	<ul> <li>Using algebra to solve problems involving</li> <li>Using Music to show that instruments have</li> </ul>	equations of lines and slopes parallel strings								
Lesson resources / Activities	<ul> <li>Holt McDougal Geometry , copyright 2011</li> <li>Power point resources</li> <li>Textbook practice worksheet</li> <li>Student drawing of lines and tranversals</li> </ul>	- Chapter 3, all sections								

	<ul> <li>Scientific Calculator</li> <li>Online textbook (<u>www.hrw.com</u>)</li> </ul>								
	<u>.</u>			New Jersey Student Learning S	Standa	rds for Mathematics			
Gra	de or Concep	otual Cat	egoi	ry (HS only): Geometry					
Dom	Domain (name and #): Congruence								
Clus	ster: Experin	nent witl	1 #	#. Standard:					
tran	sformations	in the	(	G-CO-1					
plan Und	e. erstand cong	ruanca i		G-CO-9					
terms of rigid motions.			G-CO-12						
Dom	nain (name a	nd #) : E	xpre	essing Geometric Properties w	vith e	quations			
Cluster: Use coordinates to prove simple geometric theorems algebraically			s ( c	G-GPE-5					
Math	<b>h Practices:</b> 3 4. 7.	. Construc . Model w . Look and	et via tith n d ma	ble arguments and critique the rea nathematics ke use of structure	soning	g of others			
				<u>21<sup>st</sup> Century</u>	Ther	nes			
Х	Global Awa	reness 2	K	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy	
				<u>21<sup>st</sup> Centur</u>	y Ski	<u>lls</u>			
	Creativity Innovati	and on	Х	Critical Thinking and Problem Solving	Х	Communication and Collaboration		Information Literacy	
	Media Lite	eracy		ICT Literacy	Х	Life and	Caree	r Skills	
<u>8.1</u>	Education	al Techn	olog	gy: 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 knowledge.								
Strand:     Content       C     Students       peers us     formats			<b>Content Statement:</b> Students interact, collaborate wir peers using variety of media and formats.	th	Indicator: 8.1.12.C.1				

Pine Hill Public Schools										
Mathematics Curriculum										
Unit Title: T	riangle Congruence		Unit #: 4							
Course or Gra	Course or Grade Level: Geometry CP Length of Time: 20 days									
Pacing	20 days, 2 days per section, covering sections 4-1-4-8 skip 4-7, 2 review days and 2 summative assessment days									
Essential Questions	<ul> <li>How are triangles classified by their angle measures and side lengths</li> <li>What is the relationship between the interior and exterior angle of a triangle</li> <li>What makes triangles congruent</li> <li>What is side-side (SSS) congruence</li> <li>What is angle-side (SAS) congruence</li> <li>What is angle-side (ASA) congruence</li> <li>What is angle-angle-side (AAS) congruence</li> <li>What is hypotenuse-leg (HL) congruence</li> <li>What does CPCTC represent</li> </ul>									
Content	<ul> <li>What are the special relationships of an iso</li> <li>Acute, Right, Obtuse and equiangular Tria</li> <li>Isosceles. Equilateral and scalene triangles</li> <li>Triangle sum theorem</li> <li>Exterior angles and remote interior angles</li> <li>Corresponding angles and sides</li> <li>Included angles</li> <li>Included side</li> <li>Non included side</li> <li>Isosceles triangles, base angles legs vertered</li> </ul>	sceles triangle ingles								
Skills	<ul> <li>Isosceles triangles , base angles, legs, vertex angle and base</li> <li>Identify congruent angles and sides</li> <li>Classify triangles by angles and sides</li> <li>Calculate angle measures</li> <li>Identify congruent triangles</li> <li>Prove triangles are congruent by SSS, SAS, ASA, AAS and HL using fill in the blank two column proofs.</li> <li>Use corresponding parts of triangles to show congruence of triangles</li> <li>Identify which theorem to use when proving that triangles are congruent</li> <li>Identify corresponding parts of triangles</li> </ul>									
Assessments	Formative: • Teacher observation and questioning • Seat and or group work • Homework • Student participation at board	Summative: • Quizzes, tests and	benchmark							

Inter diffe	rventions / rentiated	<ul> <li>Students given handouts of power point notes</li> <li>Students given access to online textbook</li> <li>Bestver or group work</li> </ul>							
instr	ruction	• I al ti							
Inter	r-disciplin	• Usin	g algeł	bra to solve problems involving m	issing	angles or sides of triangles			
ary		• Usin	g Astro	onomy to find distance and angles	betwe	en planets			
Con	nections								
Less	on	• Holt	McDo	ugal Geometry, copyright 2011 –	Chapt	er 4, all sections except sec	tion 7		
resou	urces /	• Pow	er poin	t resources					
Activ	vities	• Text	book p	ractice worksheet					
		• Stud	ent dra	wing of triangles					
		<ul> <li>Science</li> <li>Online</li> </ul>	nunic C ne text	book (www.hrw.com)					
		• 0111	ne text	book ( <u>www.mw.com</u> )					
				New Jersey Student Learning	Standa	rds for Mathematics			
Grac	de or Conce	ptual C	atego	ry (HS only): Geometry					
Dom	ain (name a	und #): (	Congr	uence					
Clus	ter: Unders	stand	7	#. Standard:					
cong	ruence in te	erms of	(	G-CO-6					
rigid	motions.		•	G-CO-7					
Prov	e geometric	theore	ms	G-CO-8					
			•	G-CO-9					
			•	G-CO-10					
Dom	ain (name a	nd #) :	Ś	Similarity, right triangles and	l trigo	nometry			
Clus	ter: Prove t	heorem	s (	G-SRT-5					
invo	lving simila	rity							
Math	Practices:	1. Make	sense	of problems and persevere in solv	ing the	em			
	-	2. Reaso	on absti	ractly and quantitatively					
	-	5 Use a	npropr	iate tools strategically					
		8. Look	for and	d express regularity in repeated rea	asoing				
				<u>21<sup>st</sup> Century</u>	Then	nes			
X	Global Awa	areness	X	Financial, Economic,		Civic Literacy		Health Literacy	
				Business, and Entrepreneurial					
				Literacy					
				<u>21-Centur</u>	<u>y ski</u>	<u>IIS</u>	1		
	Creativity Innovat	and ion	X	Critical Thinking and Problem	X	Collaboration		Information Literacy	
	Media Lit	eracy		ICT Literacy	Х	Life and	Caree	r Skills	
8.1	Education	al Tech	nolo	<b>v:</b> All students will use digi	ital to	ols to access manage	evalu	ate and synthesize	
0.1	informatio	on in or	der to	solve problems individually	and a	collaborate and to creat	te and	l communicate	
	mormuno			knowle	dge.		o un		
Stran	d:			Content Statement:		Indicator:			
С				Students interact, collaborate wi	th	8.1.12.C.1			
				peers using variety of media and	1				
1				formats.					

## Pine Hill Public Schools Mathematics Curriculum

Unit Title: Pro	Title:Properties and Attributes of TrianglesUnit #: 5										
Course or Grade Level: Geometry CP     Length of Time: 15 days											
Pacing	15 days, 2 days per section, covering sections $5-1 - 5-8$ skip $5-2$ , $5-6$ , 2 review days and 2 summative assessment days										
Essential	• Given a problem how would you know wh	• Given a problem how would you know which theorem to use?									
Questions	• How are medians used to determine measure	res of a triangle?									
	• What is a midsegment of a triangle?										
	• How is the Pythagorean theorem used to fir	nd measurements of the sides of a	triangle?								
	• What are special right triangles?										
	• How do medians differ from altitudes?										
Content	<ul> <li>Perpendicular and angle bisectors</li> </ul>										
	<ul> <li>Medians and altitudes of triangles</li> </ul>										
	• The triangle midsegment theorem										
	• Inequalities in one triangle (skip indirect pr	roof)									
	• The Pythagorean Theorem										
	Applying special right triangles										
Skills	Identify perpendicular lines										
	• Identify medians of triangles										
	• Know the difference between the two spec	ial right triangles (30-60-90 ; 45-4	45-90)								
	• Know how to use the triangle inequality th	eorem									
	• Determine the lengths of the sides of a trian	ngle using the Pythagorean theore	em								
	• Be able to find the longest side of a triangle	e by using the Pythagorean inequa	ality theorem								
Assessments	Formative:	Summative:									
	• Teacher observation and questioning	• Quizzes, tests and t	benchmark								
	• Seat and or group work										
	• Homework										
<b>T</b> ( ) (	• Student participation at board										
Interventions /	• Students given handouts of power point not	les									
differentiated	<ul> <li>Students given access to online textbook</li> <li>Destroy on group succh</li> </ul>										
instruction	• Partner or group work										

Inter ary	-disciplin	• Use ti	ades a	and shops to show how the Pythag	orean	theorem			
Lesso resou Activ	on 1rces / vities	<ul> <li>Holt McDougal Geometry , copyright 2011 – Chapter 5, all sections except section 5 (indirect proof) &amp; section 6</li> <li>Power point resources</li> <li>Textbook practice worksheet</li> <li>Student drawing of triangles</li> <li>Scientific Calculator</li> <li>Online textbook (<u>www.hrw.com</u>)</li> </ul>							
				New Jersey Student Learning S	Standa	rds for Mathematics			
Grad	le or Conce	ptual Ca	itegoi	ry (HS only): Geometry					
Dom	ain (name a	and #): C	Congr	uence					
Clus	ter: Prove	geometri	ic ‡	#. Standard:					
theor	rems		(	G-CO-10					
			(	G-CO-13					
Math	Practices:	<ol> <li>Make</li> <li>Const</li> <li>Mode</li> <li>Use ap</li> </ol>	sense ruct vi l with opropi	of problems and persevere in solv iable arguments and critique the re- mathematics riate tools strategically	ing the asonir	em g of others			
				<u>21<sup>st</sup> Century</u>	Then	<u>nes</u>			
Х	Global Awa	areness	Х	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy	
				<u>21<sup>st</sup> Centur</u>	y Ski	ls			
	Creativity Innovat	y and ion	Х	Critical Thinking and Problem Solving	Х	Communication and Collaboration		Information Literacy	
	Media Lit	eracy		ICT Literacy	Х	Life and	Caree	r Skills	
<u>8.1</u>	<b><u>8.1 Educational Technology:</u></b> 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:			<b>Content Statement:</b> 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:Polygons and QuadrilateralsUnit #: 6											
Course or Grad	Course or Grade Level: Geometry CP     Length of Time: 16 days										
Pacing	16 days, 2 days per section, covering sections	in chapter 6, 2 review days and 2	2 summative assessment days								
Essential Questions	<ul> <li>What determines the polygon?</li> <li>What are the special names given to certain polygons?</li> <li>How can the angle sum of any triangle be determined?</li> <li>How are interior and exterior angles of a polygon related?</li> <li>What are the characteristics of a parallelogram?</li> <li>How do you determine that a quadrilateral is a parallelogram?</li> <li>How are the angles and diagonals used to determine whether a quadrilateral is a parallelogram?</li> <li>What are the similarities and differences between a parallelogram and a rhombus?</li> </ul>										
Content	<ul> <li>Properties and Attributes of polygons</li> <li>Properties of parallelograms</li> <li>Conditions for Parallelograms</li> <li>Properties of special parallelograms</li> <li>Conditions for special parallelograms</li> <li>Properties of kites and trapezoids</li> </ul>										
Skills	<ul> <li>Identify a polygon by number of sides</li> <li>Calculate the interior angles of a polygon</li> <li>Know the properties of parallelograms</li> <li>How to prove that a quadrilateral is a parall</li> <li>Know the properties and conditions of spec</li> </ul>	elogram ial parallelograms									

Asse	ssments	Formati • Teach • Seat • Hom • Stude	ive: her obs and or ework ent par	servation and questioning group work ticipation at board		Summative: • Quizzes, tests and ben	ichmai	'k		
Inter diffe instr	ventions / rentiated uction	<ul> <li>Students given handouts of power point notes</li> <li>Students given access to online textbook</li> <li>Partner or group work</li> </ul>								
Inter ary Coni	-disciplin nections	<ul><li>Use j</li><li>Cons</li></ul>	<ul> <li>Use photography and how it relates to quadrilateral shapes</li> <li>Construction and the different quadrilateral shapes</li> </ul>							
Less resou Activ	on 1rces / vities	<ul> <li>Holt McDougal Geometry , copyright 2011 – Chapter 6, all sections</li> <li>Power point resources</li> <li>Textbook practice worksheet</li> <li>Student drawing of polygons and quadrilaterals</li> <li>Scientific Calculator</li> <li>Online textbook (<u>www.hrw.com</u>)</li> </ul>								
				New Jersey Student Learning Student Lear	Standa	rds for Mathematics				
Grac	le or Conce	ptual C	atego	ry (HS only): Geometry						
Dom	ain (name a	and #): (	Congr	ruence						
Clus	ter: Prove	geometr	ic #	#. Standard:						
theor	rems		•	G-CO-11						
Math	Practices:	<ol> <li>4. Mode</li> <li>5. Use aj</li> <li>7. Look</li> </ol>	l with ppropr for and	mathematics iate tools strategically I make use of structure						
				<u>21<sup>st</sup> Century</u>	Ther	<u>nes</u>				
Х	Global Awa	areness	Х	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		
				21 <sup>st</sup> Centur	y Ski	lls				
	Creativity	y and	X	Critical Thinking and Problem	X	Communication and		Information Literacy		
	Innovation         Solving         Collaboration           Media Literacy         ICT Literacy         X         Life and Career Skills						Skills			
Q 1	Education	al Tech	nolo	All students will use disi	tal to	ols to access manage	avalu	ate and synthesize		
<u>0.1</u>	<b>8.1 Educational Technology:</b> 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:			<b>Content Statement:</b> 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:SimilarityUnit #: 7											
Course or Grad	e Level: Geometry CP	Length of Time: 12 days									
Pacing	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	<ul> <li>What is a ratio?</li> <li>What is a proportion?</li> <li>How many ways can a ratio be written?</li> <li>How do you use proportions to see whether</li> <li>What are the means and extremes and how</li> <li>How are sides and angles used to determine</li> <li>Explain how you would draw a picture to see</li> <li>How is an angle bisector used to find measu</li> <li>How do we use proportions in determining</li> <li>How are ratios used to determine the slope</li> </ul>	triangles are similar? are they used? triangle similarity? cale. urements of the sides of a triangle whether items are drawn to scale? of a line?	?								
Content	<ul> <li>Ratio and Proportion &amp; Ratios in similar po</li> <li>Triangle similarity : AA, SSS, SAS</li> <li>Applying properties of similar triangles</li> </ul>	blygons (combine 7.1 & 7.2)									

		Using proportional relationships									
Skill	<b>S</b>	Simplifying ratios     Solve properties									
		• Solve	<ul> <li>Solve proportions</li> <li>Write proportions representing similar figures</li> </ul>								
		• Write	Write proportions representing similar figures								
		Identifying similar figures									
		<ul> <li>Ident</li> </ul>	<ul> <li>Identifying similar triangles by using AA, SAS, SSS</li> </ul>								
		• Use t	the tria	ngular similarity theorem to deter	mine w	whether triangles are similar					
		• Use 1	ratios t	o determine the slope of a line							
		• Find	missin	ig measures using indirect measure	ement						
Asse	ssments	Formati	ive:			Summative:					
		• Teacl	her obs	servation and questioning		<ul> <li>Quizzes, tests and ben</li> </ul>	nchmark				
		• Seat	and or	group work							
		• Hom	ework								
<b>.</b>		• Stude	ent par	ticipation at board							
Inter	ventions /	• Stude	ents gr	ven handouts of power point notes							
diffe	rentiated	• Stude	ents gr	ven access to online textbook							
instr	uction	• Parti		group work							
Inter	-disciplin	• Geog	graphy	and the scales of maps							
arv	•	• Histo	ory and	l population – ratios and proportio	ns used	t					
Con	nections										
				1.0	<u> </u>	7 11					
Less	on ,	Holt     Douv	McDo	ugal Geometry, copyright 2011 –	Chapt	er /, all sections except /-6.					
resou	irces /	<ul> <li>Powe</li> <li>Toyth</li> </ul>	er poin	ractice worksheet							
Activ	vities	• Textu	ook p ant dra	ving of polygons and triangles							
		<ul> <li>Stude</li> <li>Scier</li> </ul>	tific (	Valculator							
			nine evt	book (www.brw.com)							
		• 01111	IC ICAL	Cook ( <u>www.mw.com</u> )							
				New Jersey Student Learning Student Learning	Standa	rds for Mathematics					
Grad	le or Conce	ptual C	ategoi	ry (HS only): Geometry							
		-									
Dom	ain (name a	and #): §	Simila	rity, right triangles and trigo	nomte	ery					
Clus	ter: Under	standing	<b>y</b> 4	#. Standard:							
simil	arity in teri	ms of		C SDT 2 3 4 5							
simil	arity transf	ormatio	ons 📙	<b>G-SKI-2</b> , <b>5</b> , <b>4</b> , 5							
Math	Practices:	Make	sense (	of problems and persevere in solvi	ng the	m					
	4	. Model	with r	nathematics							
	6. Attend to precision										
				<u>21<sup>st</sup> Century</u>	Then	nes					
X	Global Awa	areness	X	Financial, Economic.		Civic Literacy	Health Literacy				
Business and Entrepreneurial											
	Literacy										
				21 <sup>st</sup> Centur	y Ski	lls					
	Creativity	i and	X	Critical Thinking and Problem	v	Communication and	Information Literacy	,			
	Innovat	ion		Solving	Λ	Collaboration	information Eneracy				
	Media Lit	eracy		ICT Literaev	x	Life and	Career Skills				
1		crucy		ici Enerucy	~1		Curver Ditting				

<b><u>8.1 Educational Technology:</u></b> 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: Rig	Unit Title:Right Triangles and TrigonometryUnit #: 8										
Course or Grad	e Level: Geometry CP	Length of Time: 14 days									
Pacing	14 days, 2 days per section, covering sections assessment days	ions in chapter 8 except 8-6, 2 review days and 2 summative									
Essential Questions	<ul> <li>How is the determine geometric mean with given proportions?</li> <li>How are the trigonometric ratios similar and different?</li> <li>How are the trigonometric ratios used to determine sides and angles of a right triangle?</li> <li>How do you determine which trigonometric ratio to use in working with right triangles?</li> </ul>										

	• 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	• Similarit	y in Right Triangles							
	Trigonon	netric ratios							
	Solving 1	1ght triangles							
	<ul> <li>Angles o</li> </ul>	f elevations and depression							
	• Laws of	sines and cosines							
Skills	• Determin	e what right triangles are similar							
	Calculate	the geometric mean between two	given numbers.						
	• Use trigo	nometric ratios to solve problems							
	• Find miss	sing measures of right triangles using	ng trigonometric ratios						
	• Solve pro	blems using angle of elevation and	l angle of depression						
	Know ho	w to and when to use the inverse o	t sine, cosine and tangent						
	Know ho	w to find the trigonometric ratios u	sing a scientific calculator						
	• Use the la	aw of sines and cosines to solve pro	oblems						
Assessments	Formative:	1	Summative:						
	• Teacher o	bservation and questioning	• Quizzes, tests and benchmark						
	• Seat and	or group work							
	<ul> <li>Homewol</li> <li>Student n</li> </ul>	rk							
Interventions /	<ul> <li>Student p</li> <li>Students</li> </ul>	given handouts of nower point not	20						
interventions /	<ul> <li>Students</li> </ul>	given access to online textbook							
differentiated	Bartner or	r group work							
instruction		r group work							
Inter-disciplin	Survey and	nd construction – use the trigonom	etric functions to find angles and sides						
arv									
Connections									
т	- 11-14 M-T	2	Charter 9 - 11 and internet 9 (						
Lesson	Holt McL	Jougal Geometry , copyright 2011	- Chapter 8, all sections except 8-6.						
resources /	<ul> <li>Power po</li> <li>Taythaak</li> </ul>	nit resources							
Activities	<ul> <li>Student d</li> </ul>	rawing of right triangles							
	<ul> <li>Scientific</li> </ul>	Calculator							
	<ul> <li>Online te</li> </ul>	xtbook (www.hrw.com)							
		( <u></u> )							
		New Jersey Student Learning	Standards for Mathematics						
Grade or Conce	ptual Categ	ory (HS only): Geometry							
Domain (name a	and #): Simi	larity, right triangles and trig	onomtery						
Cluster: Define		#. Standard:							
trigonometric r	atios and	G-SRT-6, 7, 8							
solve problems	nvolving								
right triangles									
Cluston Apply		# Standard:							
trigonometry to	ganaral								
triangles	general	G-SRT-10, 11							

Math	Math Practices: 1. Make sense of problems and persevere in solving them 4. Model with mathematics								
	5. Attend	to pre	cision						
	7. Look f	or and	make use of structure						
			<u>21<sup>st</sup> Century</u>	Then	<u>nes</u>				
Х	Global Awareness	Х	Financial, Economic, Business, and Entrepreneurial		Civic Literacy		Health Literacy		
	<u>21<sup>st</sup> Century Skills</u>								
	Creativity and Innovation	Х	Critical Thinking and Problem Solving	Х	Communication and Collaboration		Information Literacy		
	Media Literacy		ICT Literacy	Х	Life and	Career	r Skills		
<u>8.1</u>	<b>Educational Tech</b>	nolog	y: All students will use digi	tal to	ols to access, manage,	evalu	ate, and synthesize		
	information in or	der to	solve problems individually	and o	collaborate and to creat	e and	communicate		
			knowled	dge.					
Stran	d:		<b>Content Statement:</b>		Indicator:				
C Students interact, collabor				th	8.1.12.C.1				
			peers using variety of media and formats.						

Pine Hill Public Schools									
	Mathematics	Curriculum							
Unit Title: Cir	Unit Title:CirclesUnit #: 9								
Course or Grad	e Level: Geometry CP	Length of Time: 18 days							
Pacing       18 days, 2 days per section, covering all sections in chapter 11, 2 review days and 2 summative assessment days									

Eccontial	• What is a	abord and where is it leasted on a sizele?							
Essential	• what is a	conord and where is it located on a circle?							
Questions	• What is a	secant and where is it located on a circle?							
	<ul> <li>What is a tangent and where is it located on a circle?</li> <li>What is the difference between a chard and diameter of a circle?</li> </ul>								
	• What is t	he difference between a chard and diameter of a circle?							
	<ul> <li>What are concentric circles and what do they have in common?</li> <li>What is the difference between a major and a minor arc?</li> </ul>								
	• What is the difference between a major and a minor arc?								
	• What is the sector of a circle?								
	• How do v	we identify inscribed angles of a circle?							
	• How do y	you find the area of a sector?							
	• How do y	we determine angles formed by chords and tangents?							
Content	<ul> <li>Lines the</li> </ul>	tintersect circles							
Content	<ul> <li>Arcs and</li> </ul>	chards							
	Sector and	tee and are length							
	<ul> <li>Sector at</li> <li>Insoribad</li> </ul>								
		lationshing in circles							
	Aligie le	rationships in circles							
	• Segment								
	Circles in	1 the coordinate plane							
Skills	• Identify I	ines and segments pertaining to circles							
	• Identify d	chords, secants and tangents							
	• Find the	major and minor arcs of circles							
	• Determin	le sector area and arc length							
	• Determin	e the measure of inscribed angles in circles							
	• Find angl	les measures using secants and tangents							
Assessments	Formative:	Summative:							
	• Teacher of	bservation and questioning • Quizzes, tests and benchmark							
	• Seat and	or group work							
	• Homewo	rk							
	• Student p	participation at board							
Interventions /	• Students	given handouts of power point notes							
differentiated	• Students	given access to online textbook							
instruction	• Partner o	r group work							
Instruction									
Inter-disciplin	• Business	and data using circle graphs							
arv									
Connections									
Connections									
Lesson	Holt McI	Dougal Geometry, copyright 2011 – Chapter 11, all sections							
resources /	• Power po	oint resources							
Activities	<ul> <li>Textbook</li> </ul>	practice worksheet							
11001 ( 1010)	• Student d	lrawing of circles and all of it components							
	• Scientific	: Calculator							
	• Online te	xtbook ( <u>www.hrw.com</u> )							
		New Jersey Student Learning Standards for Mathematics							
Grade or Conce	ptual Categ	ory (HS only): Geometry							
Domain (name a	and #): Con	gruence							
Clustor: Export	imont with	# Standard:							
Cluster: Experiment with									
nlane	s in the	G-CO - 1							
Piano									

Dom	ain (name and #): C	ircle	\$						
Cluster: Understanding		\$	#. Standard:						
and circl	apply theorems abou es	ut (	G-C – 1, 2, 3, 4						
Dom	ain (name and #): E	xpre	ssing Geometric Properties w	ith eq	luations				
Clus	ter: Translate	\$	#. Standard:						
betw	een the geometric	•	G-GPE – 1						
equa	tion for a conic								
secti	on								
		•	G-SRT-10, 11						
Math	Practices: 1. Make s 4. Model 5. use app	ense of with reprised	of problems and persevere in solvin nathematics ate tools strategically	ng the	m				
			<u>21<sup>st</sup> Century</u>	Ther	nes				
Х	Global Awareness	Х	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy		
			<u>21<sup>st</sup> Centur</u>	y Ski	lls				
	Creativity and Innovation	Х	Critical Thinking and Problem Solving	Х	Communication and Collaboration		Information Literacy		
	Media Literacy		ICT Literacy	Х	Life and	Caree	r Skills		
<u>8.1</u>	Educational Tech	nolog	gy: All students will use digi	tal to	ols to access, manage,	evalu	ate, and synthesize		
	information in ord	er to	solve problems individually knowled	and dge.	collaborate and to creat	e and	l communicate		
Strand: Content Statement: Indicato				Indicator:					
C			Students interact, collaborate with	th	8.1.12.C.1				
			formats.						

Pine Hill Public Schools										
	Mathematics Curriculum									
Unit Title: Ext	tending Peri	imeter, Circumference	e, and Area		Unit #: 10					
Course or Grad	e Level: Ge	ometry CP	If time allo	ws:	: 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 Questions Content	<ul> <li>How do you find the area of all geometric figures using the length of the base, height, or the diagonals?</li> <li>How can you find the area of a regular polygon?</li> <li>How can you find the perimeters and areas of similar figures?</li> <li>Developing Formulas for Triangles and Ouadrilaterals</li> </ul>									
	<ul> <li>Developi</li> <li>Composi</li> <li>Perimeter</li> </ul>	ing Formulas for Circles a te Figures r and Area in the Coordin	and Regular Polygons nate Plane	1.0						
Skills	<ul> <li>Apply th</li> <li>Apply th</li> <li>Use the</li> <li>Find the</li> </ul>	he formulas for the Areas he formulas for the Area a Area Addition Postulate to Perimeters and Areas of	of Triangles and Speci and Circumference of a to find the Areas of Co figures in Coordinate 1	al Q Cire npo lane	Quadrilaterals rcle osite Figures ne					
Assessments	Formative:       Summative:         • Teacher observation and questioning       • Quizzes, tests and benchmark         • Seat and or group work       • Homework         • Student participation at heard       • Student participation at heard									
Interventions / differentiated instruction	<ul><li>Students</li><li>Students</li><li>Partner or</li></ul>	given handouts of power given access to online tex r group work	point notes xtbook							
Inter-disciplin ary Connections	• History: (	Geography example 23, p	age 626.							
Lesson resources / Activities	<ul> <li>Holt McL</li> <li>Power po</li> <li>Textbook</li> <li>Student d</li> <li>Scientific</li> <li>Online text</li> </ul>	Dougal Geometry, copyri int resources practice worksheet trawing of circles and all of Calculator xtbook ( <u>www.hrw.com</u> )	ight 2011 – Chapter 11, of it components	all s	sections					
New Jersey Studen	nt Learning St	andards for Mathematics								
Domain (name a	and #): Geor	metry								
Cluster:	_	#. Standard:								
Apply geometric c	oncepts in	G-MG								
Give an informal a	rgument for	G-MD.A								
the formulas for th circumference of a area of geometric f	Give an informal argument for the formulas for the circumference of a circle and area of geometric figures.									
Math Practices:	<ol> <li>Make sense</li> <li>Model with</li> </ol>	e of problems and persevent mathematics	ere in solving them							
	5. use appropri	riate tools strategically								
21 <sup>st</sup> Century Themes										

Х	Global Awareness X		Financial, Economic,		Civic Literacy		Health Literacy		
			Business, and Entrepreneurial						
			Literacy						
	<u>21<sup>st</sup> Century Skills</u>								
	Creativity and	Х	Critical Thinking and Problem	Х	Communication and		Information Literacy		
	Innovation		Solving		Collaboration				
	Media Literacy		ICT Literacy	Х	Life and Career Skills				
<u>8.1</u>	<b>Educational Tech</b>	nolog	y: All students will use digi	tal to	ols to access, manage,	evalu	ate, and synthesize		
	information in or	ler to	solve problems individually	and o	collaborate and to creat	e and	l communicate		
			knowled	dge.					
Stran	d:		<b>Content Statement:</b>		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: Spa	atial Reason	ing		Unit #: 11							
Course or Grad	e Level: Ge	ometry CP	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	<ul> <li>What are the most effective tools to determine and calculate measurements?</li> <li>How can you investigate and analyze properties of two and three dimensional figures?</li> </ul>										
Content	<ul> <li>Solid Geometry</li> <li>Representations of Three-Dimensional Figures</li> <li>Formulas in Three Dimensions</li> <li>Surface Area of Prisms and Cylinders</li> <li>Surface Area of Pyramids and Cones</li> <li>Volume of Prisms and Cylinders</li> <li>Volume of Pyramids and Cones</li> <li>Subarras</li> </ul>										
Skills	<ul> <li>Classify Three-Dimensional figures according to their properties</li> <li>Draw representations of Three-Dimensional figures</li> <li>Apply Euler's formula to find the number of Vertices, Edges, and Faces of a Polyhedron</li> <li>Learn and apply the formula for the Surface Area of a Prism</li> <li>Learn and apply the formula for the Surface Area of a Pyramid and Cone</li> <li>Learn and apply the formula for the Volume of a Prism and Cylinder</li> <li>Learn and apply the formula for the Volume of a Pyramid and Cone</li> </ul>										
Assessments	Formative: • Teacher of • Seat and • • Homewor • Student p	bservation and questioning or group work k articipation at board	Summa • Quiz	ntive: zzes, tests and benchmark							
Interventions / differentiated instruction	<ul> <li>Students given handouts of power point notes</li> <li>Students given access to online textbook</li> <li>Partner or group work</li> </ul>										
Inter-disciplin ary Connections	Biology:	example 2, page 715.									
Lesson resources / Activities	<ul> <li>Holt McDougal Geometry , copyright 2011 – Chapter 11, all sections</li> <li>Power point resources</li> <li>Textbook practice worksheet</li> <li>Student drawing of circles and all of it components</li> <li>Scientific Calculator</li> <li>Online textbook (<u>www.hrw.com</u>)</li> </ul>										
New Jersey Student Learning Standards for Mathematics											
Domain (name and #): Geometry											
Cluster:		#. Standard:									

Explain volume formulas and		id (	G-MD.A								
use them to solve problems. Apply geometric concepts in		1	G-MG.A								
modeling situations											
Math Practices:       1. Make sense of problems and persevere in solving them         4. Model with mathematics       5. use appropriate tools strategically											
<u>21<sup>st</sup> Century Themes</u>											
Х	Global Awareness	Х	Financial, Economic, Business, and Entrepreneurial Literacy		Civic Literacy		Health Literacy				
<u>21<sup>st</sup> Century Skills</u>											
	Creativity and Innovation	Х	Critical Thinking and Problem Solving	Х	Communication and Collaboration		Information Literacy				
	Media Literacy		ICT Literacy	Х	Life and Career Skills						
<b><u>8.1 Educational Technology:</u></b> 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: C			Content Statement: Students interact, collaborate with peers using variety of media and formats.		Indicator: 8.1.12.C.1						