Pine Hill Public Schools			
Content Area:	**Mathematics**		
Course Title/ Grade Level:	**Honors Geometry /Grade 10**		
Unit 1:	**Foundations of Geometry**	Duration	**4 weeks**
Unit 2:	**Geometric Reasoning**	Duration	**4 weeks**
Unit 3:	**Parallel and Perpendicular Lines**	Duration	**4 weeks**
Unit 4:	**Triangle Congruence**	Duration	**4 weeks**
Unit 5:	**Properties and Attributes of Triangles**	Duration	**4 weeks**
Unit 6:	**Polygons and Quadrilaterals**	Duration	**4 weeks**
Unit 7:	**Similarity**	Duration	**4 weeks**
Unit 8:	**Right Triangles and Trigonometry**	Duration	**4 weeks**
Unit 9:	**Circles**	Duration	**4 weeks**
Unit 10:	***Extending Perimeter, Circumference, and Area**	Duration	**2 weeks**
Unit 11:	***Spatial Reasoning**	Duration	**2 weeks**
BOE Approved Revision:			
BOE Initial Adoption Date:	June 20, 2017		

***If time allows

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Foundations of Geometry		**Unit #: 1**
Course or Grade Level:Honors Geometry	**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	● What are points, lines, segments, rays and planes? ● How do we measure line segments and angles? ● How do we apply formulas for finding perimeter, area and circumference? ● How do we apply and use the midpoint and distance formula? ● What are the transformations in the coordinate plane? (reflection, rotation and translation) ● How to relate the beginnings of geometry using constructions	
Content	● Points, lines, planes ● Angle measure ● Formulas, i.e. Perimeter, area and circumference ● Midpoint and distance formulas ● Transformations	
Skills	● 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 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 notes ● Students given access to online textbook ● Partner or group work	
Inter-disciplinary Connections	● Using algebra to solve problems involving line segments, angles, perimeter and area ●	
Lesson resources / Activities	● Holt McDougal Geometry , copyright 2011 – Chapter 1 ● Power point resources ● Textbook practice worksheet ● Scientific Calculator ● Online textbook (www.hrw.com) ● Construction and measuring of segments and angles	
New Jersey Student Learning Standards for Mathematics		
Grade or Conceptual Category (HS only): Geometry		
Domain (name and #): Congruence		
Cluster: Experiment with transformations in the plane. Understand congruence in terms of rigid motions.	**#. Standard:**	
	G-CO-1	
	G-CO-2	
	G-CO-3	

	G-CO-4						
	G-CO-5						
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 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 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: **C**		**Content Statement:** Students interact, collaborate with peers using variety of media and formats.		**Indicator:** **8.1.12.C.1**			

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Geometric Reasoning		**Unit #: 2**
Course or Grade Level: Honors Geometry	**Length of Time: 13 days**	
Pacing	13 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	● How is inductive reasoning used to identify patterns and make conjectures? ● How do we analyze the truth value of conditional statements? ● How do we identify properties of equality and congruence? ● How do we use deductive reasoning in proving geometric theorems?	
Content	● Inductive reasoning, conjecture and counterexample ● Conditional statement, hypothesis and conclusion (2.2 skip truth values, contrapositives, and inverse) ● Biconditional Statements and Definitions ● Properties of equality ● Algebraic equations ● Theorem and two column proofs ● Paragraph Proof	
Skills	● Make a conjecture and find examples and counterexamples ● Identify parts of conditional statements (2.2 skip truth values, contrapositives, and inverse) ● Be able to write the converse of a conditional statement ● Write and analyze biconditional statements ● Identify properties of equality and congruence ● Understand the concept of a two column proof	
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 notes ● Students given access to online textbook ● Partner or group work	
Inter-disciplinary Connections	● Using algebra to solve problems involving properties of equality ● Using Biology to make conjectures and counterexamples	
Lesson resources / Activities	● Holt McDougal Geometry , copyright 2011 – Chapter 2, sections 1,2,5,6 ● Power point resources ● Textbook practice worksheet ● 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 transformations in the plane. Understand congruence in terms of rigid motions.	**#. Standard:** **G-CO-9**	

Math Practices: 2. Reason abstractly and quantitatively
3. Model with mathematics
6. Attend to precision

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 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 peers using variety of media and formats.	**8.1.12.C.1**

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Parallel and Perpendicular Lines		**Unit #: 3**
Course or Grade Level: Honors Geometry	**Length of Time: 16 days**	
Pacing	16 days, 2 days per section, covering all sections in chapter 3 , 2 review days and 2 summative assessment days	
Essential Questions	● What are the differences between parallel, perpendicular and skew lines ● What ware the different angle pairs formed by two lines and a transversal ● What is the relationship of angles formed by two parallel lines and a transversal ● How are angles formed by a transversal used to prove that two lines are parallel ● What are the characteristics of perpendicular lines ● How are slopes used to determines whether a line is parallel or perpendicular ● How do you use the equation in point slope form to graph a line ● How do you use the equation in slope intercept 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 lines ● Be able to use the different pairs of angles formed by two lines and a transversal ● Determine whether lines are parallel by the angles formed with a transversal ● Write proofs involving parallel lines ● Understand all properties of perpendicular lines ● Determine the slope of a line ● Use the point slope and slope intercept equations to compare lines ● To be able to graph equations of lines on a coordinate graph	
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 notes ● Students given access to online textbook ● Partner or group work	
Inter-disciplinary Connections	● Using algebra to solve problems involving equations of lines and slopes ● Using Music to show that instruments have parallel strings	
Lesson resources / Activities	● Holt McDougal Geometry , copyright 2011 – Chapter 3, all sections ● Power point resources ● Textbook practice worksheet ● Student drawing of lines and tranversals ● 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 transformations in the plane. **Understand congruence in terms of rigid motions.**	**#. Standard:** **G-CO-1** **G-CO-9** **G-CO-12**
Domain (name and #) : Expressing Geometric Properties with equations	
Cluster: Use coordinates to prove simple geometric theorems algebraically	**G-GPE-5**

Math Practices: 3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
7. Look and make use of structure

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

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Triangle Congruence		**Unit #: 4**
Course or Grade Level: Honors Geometry	**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	● How are triangles classified by their angle measures and side lengths ● What is the relationship between the interior and exterior angle of a triangle ● 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 isosceles triangle	
Content	● Acute , Right, Obtuse and equiangular Triangles ● 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, vertex angle and base	
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, ASA, AAS and HL and Isosceles Triangle Proof ● Use corresponding parts of triangles to show congruence of triangles ● Identify which theorem to use when proving that triangles are congruent ● Identify corresponding parts of triangles ● Apply isosceles and equilateral triangle theorems	
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 notes ● Students given access to online textbook ● Partner or group work	
Inter-disciplinary Connections	● Using algebra to solve problems involving missing angles or sides of triangles ● Using Astronomy to find distance and angles between planets	
Lesson resources / Activities	● Holt McDougal Geometry , copyright 2011 – Chapter 4, all sections except section 7 ● Power point resources ● Textbook practice worksheet ● Student drawing of triangles ● 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: Understand congruence in terms of rigid motions. **Prove geometric theorems**	**#. Standard:**
	G-CO-6
	G-CO-7
	G-CO-8
	G-CO-9
	G-CO-10
Domain (name and #) :	**Similarity, right triangles and trigonometry**
Cluster: Prove theorems involving similarity	**G-SRT-5**
Math Practices: 1. Make sense of problems and persevere in solving them 2. Reason abstractly and quantitatively 4. Model with mathematics 5. Use appropriate tools strategically 8. Look for and express regularity in repeated reasoing	

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

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Properties and Attributes of Triangles		**Unit #: 5**
Course or Grade Level: Honors Geometry	**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 Questions	● Given a problem how would you know which theorem to use? ● How are medians used to determine measures of a triangle? ● What is a midsegment of a triangle? ● How is the Pythagorean theorem used to find measurements of the sides of a triangle? ● What are special right triangles? ● How do medians differ from altitudes?	
Content	● Perpendicular and angle bisectors ● Medians and altitudes of triangles ● The triangle midsegment theorem ● Inequalities in one triangle (skip indirect proof) ● Finding simplest radical form ● The Pythagorean Theorem ● Applying special right triangles	
Skills	● 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 ● Student participation 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-disciplinary Connections	● Use trades and shops to show how the Pythagorean theorem	
Lesson resources / Activities	● 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 Standards for Mathematics		
Grade or Conceptual Category (HS only): Geometry		
Domain (name and #): Congruence		

Cluster: Prove geometric theorems	**#. Standard:**
	G-CO-10
	G-CO-13

Math Practices:
1. Make sense of problems and persevere in solving them
3. Construct viable arguments and critique the reasoning of others
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 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 peers using variety of media and formats.	**8.1.12.C.1**

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Polygons and Quadrilaterals		**Unit #: 6**
Course or Grade Level: Honors Geometry	**Length of Time: 16 days**	
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 polygons? ● How can the angle sum of any triangle be determined? ● How are interior and exterior angles of a polygon related? ● What are the characteristics of a parallelogram? ● How do you determine that a quadrilateral is a parallelogram? ● How are the angles and diagonals used to determine whether a quadrilateral is a parallelogram? ● What are the similarities and differences between a parallelogram and a rhombus? ● How do kites and trapezoids differ from parallelograms?	
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 parallelogram ● Know the properties and conditions of special parallelograms ● Be able to draw all quadrilaterals including parallelograms, rectangles, rhombuses, trapezoids and kites ● Write proofs involving parallelograms and quadrilaterals	
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 notes ● Students given access to online textbook ● Partner or group work	
Inter-disciplinary Connections	● Use photography and how it relates to quadrilateral shapes ● Construction and the different quadrilateral shapes	
Lesson resources / Activities	● Holt McDougal Geometry , copyright 2011 – Chapter 6, all sections ● Power point resources ● Textbook practice worksheet ● Student drawing of polygons and quadrilaterals ● 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: Prove geometric theorems	**#. Standard:**
	G-CO-11

Math Practices: 4. Model with mathematics
5. Use appropriate tools strategically
7. Look for and make use of structure

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 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 peers using variety of media and formats.	**8.1.12.C.1**

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Similarity		**Unit #: 7**
Course or Grade Level: Honors 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 polygons (combine 7.1 & 7.2) ● Triangle similarity : AA, SSS, SAS ● Applying properties of similar triangles ● Using proportional relationships	
Skills	● Simplifying ratios ● Solve proportions ● Write proportions representing similar figures ● Identifying similar figures ● Identifying similar triangles by using AA, SAS, SSS ● Use the triangular similarity theorem to determine whether triangles are similar ● Use ratios to determine the slope of a line ● Find missing measures using indirect measurement	
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 notes ● Students given access to online textbook ● Partner or group work	
Inter-disciplinary Connections	● Geography and the scales of maps ● History and population – ratios and proportions used	
Lesson resources / Activities	● Holt McDougal Geometry , copyright 2011 – Chapter 7, all sections except 7-6. ● Power point resources ● Textbook practice worksheet ● Student drawing of polygons and triangles ● Scientific Calculator ● Online textbook (www.hrw.com)	
New Jersey Student Learning Standards for Mathematics		
Grade or Conceptual Category (HS only): Geometry		
Domain (name and #): Similarity, right triangles and trigonomtery		

Cluster: Understanding similarity in terms of similarity transformations	**#. Standard:**
	G-SRT-2 , 3, 4, 5

Math Practices: 1. Make sense of problems and persevere in solving them
4. Model with mathematics
6. Attend to precision

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 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 peers using variety of media and formats.	**8.1.12.C.1**

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Right Triangles and Trigonometry		**Unit #: 8**
Course or Grade Level: Honors 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 ● Laws of sines and cosines	
Skills	● Determine what right triangles are similar ● Calculate the geometric mean ● Use trigonometric ratios to solve problems ● Find missing measures of right triangles using trigonometric ratios ● Solve problems using angle of elevation and angle of depression ● Know how to and when to use the inverse of sine, cosine and tangent ● Know how to find the trigonometric ratios using a scientific calculator ● Use the law of sines and cosines to solve problems ● Introduction to vector analysis	
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 notes ● Students given access to online textbook ● Partner or group work	
Inter-disciplinary Connections	● Survey and construction – use the trigonometric functions to find angles and sides	
Lesson resources / Activities	● Holt McDougal Geometry , copyright 2011 – Chapter 8, all sections except 8-6. ● Power point resources ● Textbook practice worksheet ● Student drawing of right triangles ● Scientific Calculator ● Online textbook (www.hrw.com)	
New Jersey Student Learning Standards for Mathematics		
Grade or Conceptual Category (HS only): Geometry		
Domain (name and #): Similarity, right triangles and trigonomtery		
Cluster: Define trigonometric ratios and	**#. Standard:** **G-SRT-6, 7, 8**	

solve problems involving right triangles	
Cluster: Apply trigonometry to general triangles	**#. Standard:** **G-SRT-10, 11**

Math Practices:
1. Make sense of problems and persevere in solving them
4. Model with mathematics
5. Attend to precision
7. Look for and make use of structure

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 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 peers using variety of media and formats.	**8.1.12.C.1**

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Circles		**Unit #: 9**
Course or Grade Level: Honors Geometry	**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	
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 ● Arcs 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 ● Draw circles showing chords, secants and tangents ● Find the major and minor arcs of circles ● Determine sector area and arc length ● Determine the measure of inscribed angles in circles ● Find angles measures using secants and tangents	
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 notes ● Students given access to online textbook ● Partner or group work	
Inter-disciplinary Connections	● Business and data using circle graphs	
Lesson resources / Activities	● Holt McDougal Geometry , copyright 2011 – Chapter 11, all sections ● Power point resources ● 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 transformations in the plane	**#. Standard:**
	G-CO - 1
Domain (name and #): Circles	
Cluster: Understanding and apply theorems about circles	**#. Standard:**
	G-C – 1, 2, 3, 4
Domain (name and #): Expressing Geometric Properties with equations	
Cluster: Translate between the geometric description and the equation for a conic section	**#. Standard:**
	G-GPE – 1
	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 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 peers using variety of media and formats.	**8.1.12.C.1**

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Extending Perimeter, Circumference, and Area		**Unit #: 10**
Course or Grade Level: Honors 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 Questions	● How do you find the area of all geometric figures using the length of the base, height, or the diagonals? ● How can you find the area of a regular polygon? ● How can you find the perimeters and areas of similar figures?	
Content	● Developing Formulas for Triangles and Quadrilaterals ● Developing Formulas for Circles and Regular Polygons ● Composite Figures ● Perimeter and Area in the Coordinate Plane	
Skills	● Develop and apply the formulas for the Areas of Triangles and Special Quadrilaterals ● 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 ● Find the Perimeters and Areas of figures in Coordinate Plane	
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 notes ● Students given access to online textbook ● Partner or group work	
Inter-disciplinary Connections	● History: Geography example 23, page 626.	
Lesson resources / Activities	● Holt McDougal Geometry , copyright 2011 – Chapter 11, all sections ● Power point resources ● 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		
Domain (name and #): Geometry		
Cluster: Apply geometric concepts in modeling situations. Give an informal argument for the formulas for the circumference of a circle and area of geometric figures.	**#. Standard:** **G-MG** **G-MD.A**	
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 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: **C**			**Content Statement:** Students interact, collaborate with peers using variety of media and formats.		**Indicator:** **8.1.12.C.1**		

Pine Hill Public Schools Mathematics Curriculum		
Unit Title: Spatial Reasoning		**Unit #: 11**
Course or Grade Level: Honors Geometry	**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	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 notes ● Students given access to online textbook ● Partner or group work	
Inter-disciplinary Connections	● Biology: example 2, page 715.	
Lesson resources / Activities	● Holt McDougal Geometry , copyright 2011 – Chapter 11, all sections ● Power point resources ● 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		
Domain (name and #): Geometry		
Cluster: Explain volume formulas and use them to solve problems. Apply geometric concepts in modeling situations	**#. Standard:**	
	G-MD.A	
	G-MG.A	

	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 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 peers using variety of media and formats.	**8.1.12.C.1**