Geometry Syllabus Part A Mr. Bailey

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Course Description:	Title: Geometry Prerequisite: Pass Algebra 1			
	It is designed for students to learn Geometry more effectively, based on their			
	maturity and mathematical backgrounds.	Upon successful completion of this		
Matorials	course, the student will receive geometry of the students will need to keep a three-sul	credit. Neat notebook Students will be		
materials.	expected to have pencils for work.	Jeet notebook. Students win be		
	Material Needed:	Optional Useful Materials:		
	• Three-subject notebook	Color Pencils		
	(because standard paper can fit	• Tape		
	in the notebook with ease)	• Markers		
		• Glue/Glue sticks		
	• Pencils	Scissors		
		• Crayons		
Textbook:	Geometry Textbook			
SOLs:	Please see the attached for the SOL descri	ptions.		
Pacing Guide:	Please see attachment for the description.			
Course Outline:	Please see attachment for the description.			
Absences Policy:	Any student who misses one unit block receive no credit for that class. Three unexcused absence will not allow the stud missed on the day of absence and a grade	c class nine or more times will tardies equal to one day absent. An lent the right to make up the work of zero will be assigned for the		
	missed work for that day. Please note that	t the student must be present for		

Make-up Work:Students are responsible for doing make-up work. All make-up work
must be completed within the amount of the excused absence timeframe. See
teacher if more time is needed. If no make up work is returned then it will
result in a zero for the assignment(s).

Homework: Students are expected to complete all the homework assignments.

Classroom 1. Be Respectful!

Expectations:

2. Be on time and in your seat when the tardy bell rings.

one hour of the class period for it not to be considered an absence.

- 3. Be prepared for the day with notebook, sharpen pencil, and any homework.
- 4. No chewing gum, combing hair, or eating in the classroom.

5. Please adhere to all of the policies and procedures of Southampton County High School

After SchoolTutorialsMath Tutorials will take place on Mondays, 3:30PM - 4:15PM. Students that have
rides, will be permitted to leave. However, students that have to ride the Activity Bus will
continue working.

Grading Weights:	Tests Quizzes	30% 20%	
	Classwork		
	Cortez		
	IXL Homowork	15% E9/	
	Homework	3%	
Benchmarks	Students will be taking a bench benchmarks will occur on we benchmarks will be an assess point.	thmark every 4 $\frac{1}{2}$ weeks. So the students ek 4 $\frac{1}{2}$, 9, 13 $\frac{1}{2}$, and 18 weeks. These nent of the student's knowledge up to tha	۱ t
Grading Policy:	A 100-93		
	B 92-85		
	C 84-77		
	D 76-70		
	F 69 and below		
Classroom	Exams, Test, Quizzes, Homey	ork Group work individual work and pro	viects
Evaluations	will all be apart of the evaluat	ion process	jeets
Class Fees:	Students are expected to pay calculator.	one dollar for the use of the graphing	
Parent/Guardian	The quickest way for me to re	spond to you and any question is through	email.
To Teacher	My email is		
Communication	sbailey	<u>@southampton.k12.va.us</u>	
	Once you go to my page throu Website you may click on my page. I will update my pages and much more information o	gh the Southampton County High School RSS feed to get up dates whenever I updat putting classroom assignment, weekly age n my website.	e my ndas,
	I will be available to talk to yo phone number is (757) 653-2 time as well. I may also be av sure that we set up a date in	u on the phone before and after school. M 751. I will be available to talk during my ailable for a face-to-face meeting. Please 1 advance.	ly prep nake
Note to Parents:	There are many parts in teach by all parties involved. It tak with the success of a child <u>.</u> ever have any question, comm me. Let us have a very succe	ing your child. I truly feel that it is a team es the students, teachers, and parents to h <u>am here for the success of your child.</u> ents, and concerns, please feel free to con ssful school year!!!	ı effort Ielp If you tact

GEOMETRY Part A	1 ST QUARTER	2 ND QUARTER	
WEEK 1	Pre-Assessment	Classify Triangles	
	Introduction of	Equilateral and Isosceles	
	Geometry Terms	Sec.4.6	
	Distance Formula	SOL G.5	
	Sec. 1.1-1.3		
	SOL G. 3A		
WEEK 2	Slope Formula	Triangle Inequality	
	Slope of Parallel/Perpendicular	Sec. 5.3, 5.5-5.6	
	Lines	SOL G.5	
	Midpoint Formula		
	Sec 1.3, 3.3		
	SOL G.3A		
WEEK 3	Inductive/Deductive Reasoning	Prove Triangles Congruent	
	Venn Diagrams	Sec. 4.1-4.3	
	Sec. 2.1-2.4	SOL G.6	
	SOL G.1		
WEEK 4	Constructions	Prove Triangles Congruent	
	Sec. 1.2-1.5	Sec. 4.3-4.5	
	SOL G.4	SOL G.6	
	Benchmark 1	Benchmark 3	
WEEK 5	Constructions	Prove Triangles and Polygons	
	Transformations and Symmetry	Similar	
	Sec. 3.5, 9.1-9.4, 9.6	Sec. 7.1-7.4	
	SOL G.4, 3	SOL G.7	
WEEK 6	Angles/Angle Pairs	Pythagorean Theorem	
	Parallel Lines	And Converse	
	Sec. 3.1	Sec.8.2	
	SOL G.2	SOL G.8	
WEEK 7	Angles	Similar Right Triangles, Side-	
	Parallel Lines	Splitter, Triangle Angle Bisector	
	Sec. 3.2	Sec. 8.1,7.5	
	SOL G.2		
WEEK 8	Proving Lines Parallel	Special Right Triangles	
	Sec. 3.5	Sec. 8.3	
	SOL G.2	SOL G.8	
	Unit 3 Test		
WEEK 9	Benchmark 2	Unit 8 Test	
	REVIEW	REVIEW	
	MID-TERM EXAM	FINAL EXAM	

Revised 8/11

Geometry SOL's and Course Outline

TOPIC: REASONING, LINES, AND TRANSFORMATIONS

Geometry Standard G.1

The student will construct and judge the validity of a logical argument consisting of a set of premises and a conclusion. This will include

- a) identifying the converse, inverse, and contrapositive of a conditional statement;
- b) translating a short verbal argument into symbolic form;
- c) using Venn diagrams to represent set relationships; and
- d) using deductive reasoning.

Objectives:

The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

- Identify the converse, inverse, and contrapositive of a conditional statement.
- Translate verbal arguments into symbolic form
- Determine the validity of a logical argument.
- Use valid forms of deductive reasoning, including the law of syllogism, the law of the contrapositive, the law of detachment, and counterexamples.
- Select and use various types of reasoning and methods of proof, as appropriate.
- Use Venn diagrams to represent set relationships, such as intersection and union.
- Interpret Venn diagrams.

• Recognize and use the symbols of formal logic, which include \rightarrow , \leftrightarrow , \sim , $\dot{}$, \uparrow , and \lor .

TOPIC: REASONING, LINES, AND TRANSFORMATIONS

Geometry

Standard G.2

The student will use the relationships between angles formed by two lines cut by a transversal to

a) determine whether two lines are parallel;

b) verify the parallelism, using algebraic and coordinate methods as well as deductive proofs; and

c) solve real-world problems involving angles formed when parallel lines are cut by a transversal.

Objectives:

The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

• Use algebraic and coordinate methods as well as deductive proofs to verify whether two lines are parallel.

- Solve problems by using the relationships between pairs of angles formed by the intersection of two parallel lines and a transversal including corresponding angles, alternate interior angles, alternate exterior angles, and same-side (consecutive) interior angles.
- Solve real-world problems involving intersecting and parallel lines in a plane.

TOPIC: REASONING, LINES, AND TRANSFORMATIONS

GEOMETRY STANDARD G.3

The student will use pictorial representations, including computer software, constructions, and coordinate methods, to solve problems involving symmetry and transformation. This will include

- a) investigating and using formulas for finding distance, midpoint, and slope;
- b) applying slope to verify and determine whether lines are parallel or perpendicular;
- c) investigating symmetry and determining whether a figure is symmetric with respect to a line or a point; and
- d) determining whether a figure has been translated, reflected, rotated, or dilated, using coordinate methods.

Objectives:

The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

- Find the coordinates of the midpoint of a segment, using the midpoint formula.
- Use a formula to find the slope of a line.
- Compare the slopes to determine whether two lines are parallel, perpendicular, or neither.
- Determine whether a figure has point symmetry, line symmetry, both, or neither.
- Given an image and preimage, identify the transformation that has taken place as a reflection, rotation, dilation, or translation.
- Apply the distance formula to find the length of a line segment when given the coordinates of the endpoints.

TOPIC: REASONING, LINES, AND TRANSFORMATIONS

GEOMETRY STANDARD G.4

The student will construct and justify the constructions of

- a) a line segment congruent to a given line segment;
- b) the perpendicular bisector of a line segment;
- c) a perpendicular to a given line from a point not on the line;
- d) a perpendicular to a given line at a given point on the line;
- e) the bisector of a given angle;
- f) an angle congruent to a given angle; and
- g) a line parallel to a given line through a point not on the given line.

Objectives:

- Construct and justify the constructions of
- a line segment congruent to a given line segment;

- the perpendicular bisector of a line segment;
- a perpendicular to a given line from a point not on the line;
- a perpendicular to a given line at a point on the line;
- the bisector of a given angle;
- an angle congruent to a given angle; and
- a line parallel to a given line through a point not on the given line.

TOPIC: TRIANGLES

GEOMETRY

STANDARD G.5

The student, given information concerning the lengths of sides and/or measures of angles in triangles, will

- a) order the sides by length, given the angle measures;
- b) order the angles by degree measure, given the side lengths;
- c) determine whether a triangle exists; and
- d) determine the range in which the length of the third side must lie.

These concepts will be considered in the context of real-world situations.

Objectives:

The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

- Order the sides of a triangle by their lengths when given the measures of the angles.
- Order the angles of a triangle by their measures when given the lengths of the sides.
- Given the lengths of three segments, determine whether a triangle could be formed.
- Given the lengths of two sides of a triangle, determine the range in which the length of the third side must lie.
- Solve real-world problems given information about the lengths of sides and/or measures of angles in triangles.

TOPIC: TRIANGLES

GEOMETRY STANDARD G.6

The student, given information in the form of a figure or statement, will prove two triangles are congruent, using algebraic and coordinate methods as well as deductive

triangles are congruent, using algebraic and coordinate methods as well as deductive proofs.

Objectives:

- Use definitions, postulates, and theorems to prove triangles congruent.
- Use coordinate methods, such as the distance formula and the slope formula, to prove two triangles are congruent.
- Use algebraic methods to prove two triangles are congruent.

TOPIC: TRIANGLES

GEOMETRY STANDARD G.7

The student, given information in the form of a figure or statement, will prove two triangles are similar, using algebraic and coordinate methods as well as deductive proofs.

Objectives:

The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

- Use definitions, postulates, and theorems to prove triangles similar.
- Use algebraic methods to prove that triangles are similar.

• Use coordinate methods, such as the distance formula, to prove two triangles are similar.

TOPIC: TRIANGLES

GEOMETRY STANDARD G.8

The student will solve real-world problems involving right triangles by using the Pythagorean Theorem and its converse, properties of special right triangles, and right triangle trigonometry.

Objectives:

The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

- Determine whether a triangle formed with three given lengths is a right triangle.
- Solve for missing lengths in geometric figures, using properties of 45-45-90 triangles.
- Solve for missing lengths in geometric figures, using properties of 30-60-90 triangles.
- Solve problems involving right triangles, using sine, cosine, and tangent ratios.
- Solve real-world problems, using right triangle trigonometry and properties of right triangles.
- Explain and use the relationship between the sine and cosine of complementary angles.[†]

TOPIC: POLYGONS AND CIRCLES GEOMETRY STANDARD G.9

The student will verify characteristics of quadrilaterals and use properties of quadrilaterals to solve real-world problems.

Objectives:

- Solve problems, including real-world problems, using the properties specific to parallelograms, rectangles, rhombi, squares, isosceles trapezoids, and trapezoids.
- Prove that quadrilaterals have specific properties, using coordinate and algebraic methods, such as the distance formula, slope, and midpoint formula.
- Prove the characteristics of quadrilaterals, using deductive reasoning, algebraic, and coordinate methods.
- Prove properties of angles for a quadrilateral inscribed in a circle.[†]

TOPIC: POLYGONS AND CIRCLES GEOMETRY STANDARD G.10

The student will solve real-world problems involving angles of polygons.

Objective:

The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

- Solve real-world problems involving the measures of interior and exterior angles of polygons.
- Identify tessellations in art, construction, and nature.
- Find the sum of the measures of the interior and exterior angles of a convex polygon.
- Find the measure of each interior and exterior angle of a regular polygon.
- Find the number of sides of a regular polygon, given the measures of interior or exterior angles of the polygon.

GEOMETRY STANDARD G.11

The student will use angles, arcs, chords, tangents, and secants to

- a) investigate, verify, and apply properties of circles;
- b) solve real-world problems involving properties of circles; and
- c) find arc lengths and areas of sectors in circles.

Objective:

- Find lengths, angle measures, and arc measures associated with
 - two intersecting chords;
 - two intersecting secants;
 - an intersecting secant and tangent;
 - two intersecting tangents; and
 - central and inscribed angles.
- Calculate the area of a sector and the length of an arc of a circle, using proportions.

- Solve real-world problems associated with circles, using properties of angles, lines, and arcs.
- Verify properties of circles, using deductive reasoning, algebraic, and coordinate methods.

GEOMETRY STANDARD G.12

The student, given the coordinates of the center of a circle and a point on the circle, will write the equation of the circle.

Objective:

The student will use problem solving, mathematical communication, mathematical reasoning, connections, and representations to

- Identify the center, radius, and diameter of a circle from a given standard equation.
- Use the distance formula to find the radius of a circle.
- Given the coordinates of the center and radius of the circle, identify a point on the circle.
- Given the equation of a circle in standard form, identify the coordinates of the center and find the radius of the circle.
- Given the coordinates of the endpoints of a diameter, find the equation of the circle.
- Given the coordinates of the center and a point on the circle, find the equation of the circle.
- Recognize that the equation of a circle of given center and radius is derived using the Pythagorean Theorem.[†]

TOPIC: THREE-DIMENSIONAL FIGURES GEOMETRY STANDARD G.13

The student will use formulas for surface area and volume of three-dimensional objects to solve real-world problems.

Objective:

- Find the total surface area of cylinders, prisms, pyramids, cones, and spheres, using the appropriate formulas.
- Calculate the volume of cylinders, prisms, pyramids, cones, and spheres, using the appropriate formulas.
- Solve problems, including real-world problems, involving total surface area and volume of cylinders, prisms, pyramids, cones, and spheres as well as combinations of three-dimensional figures.

• Calculators may be used to find decimal approximations for results.

GEOMETRY STANDARD G.14

The student will use similar geometric objects in two- or three-dimensions to

- a) compare ratios between side lengths, perimeters, areas, and volumes;
- b) determine how changes in one or more dimensions of an object affect area and/or volume of the object;
- c) determine how changes in area and/or volume of an object affect one or more dimensions of the object; and
- d) solve real-world problems about similar geometric objects.

Objective:

- Compare ratios between side lengths, perimeters, areas, and volumes, given two similar figures.
- Describe how changes in one or more dimensions affect other derived measures (perimeter, area, total surface area, and volume) of an object.
- Describe how changes in one or more measures (perimeter, area, total surface area, and volume) affect other measures of an object.
- Solve real-world problems involving measured attributes of similar objects.

PLEASE TURN THIS PAGE INTO MR. BAILEY

Please read the syllabus, pacing guide, and course outline. By signing this page you are saying that the parents and your child have read this document.

Parent's Signature	date
Parent's Printed Name	
Student's Signature	date
Student's Printed Name	
Parent's home phone number:	
Parent's Cell phone number:	
Parent's email address:	
Student's email address:	
This is anything that you would like fo	or me to know in regards to your child: