

# Advanced Geometry Syllabus 2015 - 2016

Instructor: Mrs. Jen Nesler

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School Phone #: (540) 289 – 3100

**Textbook:** Glencoe Geometry (VA Edition)

**Course Description:** Geometry is an SOL class designed for students who have successfully completed Algebra I. This course emphasizes understanding the relationships among geometric figures and using those relationships along with your algebraic skill to solve problems. Topics covered in this course include properties of geometric figures, trigonometric relationships, reasoning to justify conclusions, and using models to solve problems. Technology will play a role in the understanding of this course.

## Course Topics and SOLs:

Chapter 1 – Points, Lines, Planes, and Angles (SOL G.2, SOL G.3, SOL G.4)

Chapter 2 – Reasoning and Proof (SOL G.1, SOL G.2, SOL G.4)

Chapter 3 – Parallel and Perpendicular Lines (SOL G.2, SOL G.4)

Chapter 4 – Congruent Triangles (SOL G.6)

Chapter 5 – Relationships in Triangles (SOL G.5)

Chapter 6 – Proportions and Similarity (SOL G.7, SOL G.14)

Chapter 7 – Right Triangles and Trigonometry (SOL G.8)

Chapter 8 – Quadrilaterals (SOL G.9, SOL G.10)

Chapter 9 – Transformations (SOL G.3, SOL G.10)

Chapter 10 – Circles (SOL G.11, SOL G.12)

Chapter 11 – Areas of Polygons and Circles (SOL G.8, SOL G.9, SOL G.10, SOL G.11)

Chapter 12 – Surface Area (SOL G.13, SOL G.14)

Chapter 13 – Volume (SOL G.13, SOL G.14)

## Materials:

- ✓ 3-Ring Binder & Loose Leaf Paper– Each student will be required to organize all material from class and finished homework in this binder. It would be helpful to have some graph paper as well.
- ✓ 4 Notebook Dividers – Each student will place 4 dividers in their binders labeled: **Warm Up, Class Notes, Homework, Tests/Quizzes**. The student is responsible for placing the correct material in the correct section. This is not required but highly suggested to help with organization.
- ✓ **Pencil ONLY!** – All work needs to be completed in pencil **only!** **I will not grade assignments completed in pen.** (This includes quizzes, tests, projects, and graded assignments)
- ✓ Calculator - We have a classroom set of Casio CFX-9850GC Plus graphing calculators to be used during class. It is suggested, **NOT required**, students buy their own calculator for work completed outside of class. However I do suggest students buy their own calculator to have for this class as well as future classes. Calculators may be checked out, but **MUST** be returned the next school day.
- ✓ Compass – A compass is a geometric tool used to help create constructions throughout the year. We have a classroom set of these but it never hurts to have one at home for extra practice! These can be purchased at Wal-Mart, Target, Staples and many other office supply stores
- ✓ Highlighter – May come in handy when taking notes!

## Class Rules and Expectations:

- ✓ Classroom Rules
  - ★ Stay On Task – Work on proper assignments.
  - ★ Be Respectful – Be quiet and pay attention so you and others can learn.
  - ★ Be Ready to Learn – Have all material and assignments ready.
  - ★ Electronics/Cell Phones Only Allowed With Given Permission

- ✓ Attendance: If a student is absent from class it is their responsibility to find out what they missed. **All assignments due the day the student is absent will be due the day they return to school.** If a student is absent on the day of a test/quiz, he or she may either take the test/quiz the day he or she returns or may schedule a time with me before or after school. The **assignment must be made up within 5 days of the absence** or points will be taken off for each day after.
- ✓ Late Work – For each class day the assignment is late (days this class meets), a letter grade will be taken off until the assignment is turned in. All students should complete **ALL** work on time.
- ✓ Tardy Policy: Follows the school wide policy. Students are to be in class when the bell rings.
- ✓ Bullying will **NOT** be tolerated in this classroom. See student handbook for consequences.

### Grading:

I grade on a point scale only. This means students will earn a certain amount of points for each assignment they complete. Students should keep all graded work for proof they completed the assignment. Students can determine their grade by adding up their total number of points and dividing by the total possible points. Extra credit will be given throughout the year.

Grading Scale:	A: 100% – 90	B: 89%– 80	C: 79% – 70
	D: 69% – 60	F: 59% and Below	

Homework Policy – Homework will be assigned daily. Students are responsible for completing all homework assignments. I will check each day for completeness only unless otherwise stated. To receive full credit on homework, **all problems must be attempted and work must be shown for each problem.**

**Homework assignments and upcoming Test/Quiz/Projects can be found at <http://jnesler.weebly.com>**

Tests/Quizzes/Projects – Expect a quiz each week on the material covered. A unit test will be given after completing each chapter in the textbook. Projects will be given throughout the year when appropriate.

Honor Code – Students are expected to abide by the school’s honor code. Failure to do so will result in disciplinary action.

**Homework Pass** – Each student will be given 1 ‘Free Homework’ passes each 9-weeks. This DOES NOT excuse you from doing the homework, it just prevents the student from losing credit on this assignment. The assignment **MUST** be turned in within 2 school days. After that, I will NOT accept the pass. Students are responsible for their OWN passes. I will not replace lost passes! Passes not used during the 9-weeks can be turned in for extra credit.

### Extra Help:

Please feel free to contact me at school at 289-3100 or email me at [jnesler@rockingham.k12.va.us](mailto:jnesler@rockingham.k12.va.us). If I am unavailable, I will return your call. Math Lab will be available every morning 7:45 – 8:05 and after school on Tuesday – Thursday 3:05 – 3:25 for help. I am also available before school and after school to provide addition help or for making up missed work. Please make prior arrangements with me to make sure I am available to meet with you. Please make sure your child takes advantage of this opportunity.

Daily assignments and all grades will be posted on PowerSchool. I will do my best to have PowerSchool updated by Fridays at 3pm.

## GEOMETRY SOL'S

- 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
- identifying the converse, inverse, and contrapositive of a conditional statement;
  - translating a short verbal argument into symbolic form;
  - using Venn diagrams to represent set relationships; and
  - using deductive reasoning.
- G.2 The student will use the relationships between angles formed by two lines cut by a transversal to
- determine whether two lines are parallel;
  - verify the parallelism, using algebraic and coordinate methods as well as deductive proofs; and
  - solve real-world problems involving angles formed when parallel lines are cut by a transversal.
- 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
- investigating and using formulas for finding distance, midpoint, and slope;
  - applying slope to verify and determine whether lines are parallel or perpendicular;
  - investigating symmetry and determining whether a figure is symmetric with respect to a line or a point; and
  - determining whether a figure has been translated, reflected, rotated, or dilated, using coordinate methods.
- G.4 The student will 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 given 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.
- G.5 The student, given information concerning the lengths of sides and/or measures of angles in triangles, will
- order the sides by length, given the angle measures;
  - order the angles by degree measure, given the side lengths;
  - determine whether a triangle exists; and
  - 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.
- 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 proofs.
- 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.
- 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.
- G.9 The student will verify characteristics of quadrilaterals and use properties of quadrilaterals to solve real-world problems.
- G.10 The student will solve real-world problems involving angles of polygons.
- G.11 The student will use angles, arcs, chords, tangents, and secants to
- investigate, verify, and apply properties of circles;
  - solve real-world problems involving properties of circles; and
  - find arc lengths and areas of sectors in circles.
- 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.
- G.13 The student will use formulas for surface area and volume of three-dimensional objects to solve real-world problems.
- G.14 The student will use similar geometric objects in two- or three-dimensions to
- compare ratios between side lengths, perimeters, areas, and volumes;
  - determine how changes in one or more dimensions of an object affect area and/or volume of the object;
  - determine how changes in area and/or volume of an object affect one or more dimensions of the object; and
  - solve real-world problems about similar geometric objects

To the Parent/Guardian:

Please read and discuss this material with your son/daughter. It is very important to me, as the instructor, that you and your child understand the expectations and requirements of this course. If you have any questions, concerns, or would like to set up a conference please feel free to contact me via email or call me at Spotswood. I appreciate your support and look forward to a very successful year!

Sincerely,  
Jen Nesler

**Students and Guardians, please sign to indicate that you have read the syllabus and understand the expectations and requirements for this class.**

Student's Name Printed \_\_\_\_\_

Student's Signature \_\_\_\_\_

Date \_\_\_\_\_

Guardian's Signature \_\_\_\_\_

Date \_\_\_\_\_

Guardians, when I do need to contact you, what would be the best way/time to contact you?

\_\_\_\_\_ Phone \_\_\_\_\_

\_\_\_\_\_ Email \_\_\_\_\_

**\*\*\*PLEASE SIGN AND RETURN THIS PAGE BY AUGUST 28, 2015\*\*\***