

Port Townsend High School

Course Title: Geometry

Credit Awarded: **1.0 math credit (0.5 per semester)**

Instructor: Mrs. Cowling

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Teacher Webpage: https://highschool.ptschools.org/staff_directory/teacher_profiles_and_websites

Text: Geometry by Edward Burger, et. al, Holt McDougal © 2011

Course Description:

Geometry has a major emphasis on reasoning and proofs, triangle similarities, right triangle and trigonometry properties, circles, tangents, circumscribed and inscribed figures, surface area and volume of polygons. Completion of this course fulfills the second year university math admissions requirement. Common Core standards are part of this course preparing students for the Smarter Balanced Assessment.

Course Outline:

1. Foundations for Geometry: Undefined terms, points, lines & planes. Measurement and construction of segments and angles. Distance Formula and Pythagorean Theorem application.
2. Geometric Reasoning: Inductive and Deductive Reasoning as well as Algebraic and Geometric Proofs
3. Parallel and Perpendicular Lines: lines with transversals, Coordinate Geometry
4. Triangle Congruence: Classifying Triangles, Proving Triangle Congruence
5. Properties and Attributes of Triangles: Segments in Triangles, Relationships in Triangles
6. Polygons and Quadrilaterals: Properties and Attributes of Polygons, Especially Quadrilaterals.
7. Similarity: Ratio, Proportion, Triangle Similarity
8. Right triangles and Trigonometry: Similarity in Right Triangles, Trigonometric Ratios, Law of Sines and Cosines
9. Extending Perimeter, Circumference, and Area: Developing Geometric Formulas for use in the Coordinate Plane
10. Spatial Reasoning: Three-Dimensional Figures, Surface Area and Volume
11. Circles: Lines, Arcs, Angles and Segments in Circles
12. Extending Transformational Geometry: Congruence Transformations. Patterns

Place Based Project:

- Drawer Design
- Modify a drawer design to fit a specific kitchen implement
- Given a specific drawer dimensions, requirements for rolling pin, design a drawer partition to isolate the rolling pin from other tools.
- Community Partner: Wayne Shaffer
- Time Frame: one week

Classroom Expectations for Success:

1. **Be Prepared** – Bring Notebook of preference, pen/pencil, calculator and geometry tools to class EVERYDAY.
2. **Be Prompt** – You should be seated, quiet, and ready to work when class begins. The PTHS Tardy policy will be enforced.
3. **Be Polite** – Respect yourself and others through your words and actions.
4. **Be Positive** – Attitude is a little thing that makes a BIG difference. You can do it!
5. **Be Productive** – Work the entire class period and stay on-task without distracting others.

Grading:

Since the grade a student earns should represent their level of understanding, assignments focused on skill development (Notebook entries and formative assessments) will have a minimal impact on the student's grade. Assessments representing the student's individual level of understanding (i.e. tests) will have a greater impact. The total points accumulated in the following weighted categories will determine the student's overall grade:

- 10% Classroom participation and Individual Responsibility
- 15% Student Notebook (daily and independent work)
- 10% Quizzes and Formative Assessments
- 65% Unit tests and semester final

Class Materials:

1. **Dedicated Math Notebook, folder, or loose leaf notebook storage organizer,**
2. Pencil, pen, and colored pencils,
3. **Compass**, protractor, ruler with both metric and standard rulings,
4. Calculator capable of doing scientific notation and trigonometry functions,
Suggested: highlighters, post-it notes.

Work Completion/Work habits:

Students – The emphasis in this class, and in your grades, is *to improve upon where you started from and continually grow*. You are only limited by the effort you are willing to put forth to earn the grade you want. Success in Geometry is more than your mathematical knowledge. It's also about your ability to focus, persevere, ask for help when you need it, and develop the skills necessary to critically analyze spatial and logical problems. Please e-mail me if you are stuck on something while you are doing your independent work. I will either send you a message back, or address the question in class the next day (others will most likely have a question similar to yours).

Need face-to-face help? I'm here to help.

Before school 8:00am – 8:15am

During lunch time by appointment

After school until 4:30-ish if no faculty meeting is scheduled

Work missed due to illness or other reasons will need to be made up. Math concepts and skills are built upon prior knowledge and are sequenced similar to walking up a staircase. Students are responsible for making up the assignments and content from missed class periods. Some ideas for catching up include:

1. Look at another student's notes,
2. Pick up all papers and the agenda from missed days,
3. Complete assignments to the best of your ability,
4. Go on line to "go.hrw.com" and enter the chapter and section number after MG7 in the key word box in lower left section of the
5. Schedule a time with me to get assistance. Students should schedule time before or after school to make up a missed quiz or test due to an excused absence.

Parents – The best tool to stay informed is the Family Access/Skyward online program that can be accessed through the school's website, <http://www.ptschools.org>. Please contact the main office for correct login and password. Grades are updated on a regular basis. Also, please scan your student's notebook for completeness. Ask general questions about the material. Expertise in geometry is not necessary, but your interest in the subject will help. Ask them to "tell you" about the assignment or activity you see in their notebook. I am looking forward to a year of growth with your student.

Washington State Core Standards:

Congruence

Experiment with transformations in the plane
Understand congruence in terms of rigid motions
Prove geometric theorems
Make geometric constructions

Similarity, Right Triangles, and Trigonometry

Understand similarity in terms of similarity transformations
Prove theorems involving similarity
Define trigonometric ratios and solve problems involving right triangles
Apply trigonometry to general triangles

Circles

Understand and apply theorems about circles
Find arc lengths and areas of sectors of circles

Expressing Geometric Properties with Equations

Translate between the geometric description and the equation for a conic section
Use coordinates to prove simple geometric theorems algebraically

Geometric Measurement and Dimension

Explain volume formulas and use them to solve problems
Visualize relationships between two-dimensional and three-dimensional objects

Modeling with Geometry

Apply geometric concepts in modeling situations

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Cell Phone Policy:

This class adheres to the PTHS Cell Phone/Personal Communication Device Rules. A cell phone holding device will be available in my classroom. Upon entering my classroom, students are required to silence their ringers and place their phones in the holding device, or secure them in their backpacks, daily. Students who are caught with their cell phones on their person (i.e. in a pocket) or using them during class time (including in the hallway or other spaces) will have them removed per the school's cell phone policy. They will be turned in to the office, and appropriate consequences will be applied.

Academic Integrity:

You are expected to do your own work at all times. Each of you understands the difference between working on homework in a group, and cheating by copying. Similarly, you are expected to show what you know and can do on all tests. Anyone caught cheating will receive a zero for that assignment or test and will be reported to administration and your parent or guardian will be contacted.

Late/Missing/Improving Assessments

It is essential for success in Geometry that students develop good study habits by completing quality work consistently. Prior to each unit, an organization chart will be prepared, and passed out. If dates of prior arranged absences are known, make arrangements to do work early and get questions resolved as soon as possible. In the event that your test score is not your best work, test items can be corrected in order for students to demonstrate a better understanding of the material. Students must identify the errors and complete the problems correctly.

Please sign and return this section of the Geometry syllabus. This is your student's first assignment contributing to personal responsibility grade category.

My signature below indicates my awareness of the policies and guidelines within this document. Please sign and include your e-mail address. E-mail is my preferred way to stay in touch with you!

Parent Signature

Parent E-mail or Phone number

Student Name (print)

Student E-mail Address

Other comments, questions, things you think I should know: