Syllabus: Practices & Policies

2021-2022	Franklin High School

Section 1: Course Overview

Course Title	Geometry
Instructor Info	Name: Robert Haserot Contact Info: rhaserot1@pps.net
Grade Level(s)	
Room # for class	Room: Various
Credit	Type of credit: Math # of credits per semester: 0.5
Prerequisites (if applicable)	
General Course Description	In Geometry, students will explore geometric concepts in depth. This course is aligned to the Common Core State Standards for Geometry.

Section 2: Welcome Statement & Course Connections

Personal Welcome	Welcome to Geometry!
Course Highlights (topics, themes, areas of study)	In this course students will acquire tools to help them explore two-dimensional and three-dimensional space. These tools include rigid motion transformations, dilations and similarity, and coordinate geometry. Students will learn how to prove various geometric facts about triangles, quadrilaterals, and circles Finally, students will model real world objects using geometric formulas for perimeter, area, and volume. Three dimensional objects such as prisms, pyramids, cones, cylinders, and spheres will be used in a variety of models.

Course Connections to [PPS ReImagined Vision](#)	**Excellence** *I believe in rigor and high standards for all students and staff, and that achieving excellence and high performance is the result of the school system acting as a continuous learning organization.* **Respect** *I believe in respect for all. Every person brings value and deserves to be treated with care, courtesy, and compassion.* **Relationships** *I believe that relationships are vital to our success. Authentic human connection, established through kind, caring relationships, builds trust, fosters understanding, and strengthens our ability to work together toward shared aspirations.*

Section 3: Student Learning

Prioritized Standards	The following standards will be explored in the course: # G1 - Constructions **Priority Standards:** **HSG.CO.D.12** Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). *Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.* # G2 - Transformations **Priority Standards:** **HSG.CO.A.3** Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself. **HSG.CO.A.4** Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. **HSG.CO.B.6** Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.

HSG.SRT.A.1 Verify experimentally the properties of dilations given by a center and a scale factor.

HSG.SRT.A.1.A A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.

HSG.SRT.A.1.B The dilation of a line segment is longer or shorter in the ratio given by the scale factor.

G3 – Lines and Angles

Priority Standards:
HSG.CO.A.1 Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.

HSG.CO.C.9 Prove theorems about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.*

G4a – Similarity

Priority Standards:
HSG.SRT.A.2 Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.

HSG.SRT.A.3 Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.

HSG.SRT.B.4 Prove theorems about triangles. *Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.*

HSG.SRT.B.5 Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.

G4b – Congruence

Priority Standards:
HSG.SRT.B.5 Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.

HSG.CO.B.7 Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.

HSG.CO.B.8 Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.

G5 – Trigonometry

Priority Standards:

HSG.SRT.C.6 Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.

HSG.SRT.C.8 Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.*

G6 – Coordinate Geometry

Priority Standards:

HSG.GPE.B.4 Use coordinates to prove simple geometric theorems algebraically. *For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1, √3) lies on the circle centered at the origin and containing the point (0, 2).*

HSG.GPE.B.5 Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).

HSG.GPE.B.6 Find the point on a directed line segment between two given points that partitions the segment in a given ratio

HSG.GPE.B.7 Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.*

HSG.CO.C.11 Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.*

G7 – Circles

Priority Standards:

HSG.C.A.2 Identify and describe relationships among inscribed angles, radii, and chords. *Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.*

HSG.C.B.5 Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.

HSG.CO.A.1 Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.

G8 – Solids

Priority Standards:
<mark>**NOTE: The following two <u>existing priority standards</u> are mapped to priority standards in 8th Grade Unit 5: Data Modeling that students may have missed and may need further support with:**</mark>

- **HSG.GMD.A.1** Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. *Use dissection arguments, Cavalieri's principle, and informal limit arguments.*

- **HSG.GMD.A.3** Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.*

HSG.GMD.B.4 Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.

HSG.MG.A.2 Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).*

G9 – Probability

Priority Standards:
HSS.CP.A.1 Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").

HSS.CP.A.2 Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.

HSS.CP.A.3 Understand the conditional probability of A given B as $P(A$ and $B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.

HSS.CP.A.4 Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. *For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.*

HSS.CP.A.5 Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. *For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.*

	HSS.CP.B.6 Find the conditional probability of *A* given *B* as the fraction of *B*'s outcomes that also belong to *A*, and interpret the answer in terms of the model. **HSS.CP.B.7** Apply the Addition Rule, P(A or B) = P(A) + P(B) - P(A and B), and interpret the answer in terms of the model. ==**NOTE: The following existing supporting standards are standards listed in the ODE Native American Lesson and need to be prioritized:**== ● **HSS.MD.B.5.B** Evaluate and compare strategies on the basis of expected values. *For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.* - *ODE Native American Standard/Lesson* **(+)HSS.MD.B.5** (+) Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. - *ODE Native American Standard/Lesson*
PPS Graduate Portrait Connections	I will help students grow their knowledge and skills in the following aspects of PPS's Graduate Portrait: ● Students will be inclusive and collaborative problem solvers through utilizing teamwork. ● Students will become resilient and adaptive lifelong learners. ● Students will be inquisitive critical thinkers with deep core knowledge by creating and examining mathematical arguments. ● Students will become powerful and effective communicators through explaining and sharing their work and thinking.

Differentiation/ accessibility strategies and supports:	I will provide the following supports specifically for students in the following programs:
	Special Education, 504 Plans, English Language Learners and Talented & Gifted:
	
	● Explicit instruction using guided notes and teacher-provided notes (available through canvas)
	● Leveled, standards-based assessments with clear benchmarks for C-, B- and A-level work.
	● Flexible timeline for demonstrating proficiency.
	● Multiple attempts to retake and/or revise assessments.
	● Honors credit available for interested students.
	● Clearly posted and chunked agenda, daily learning target(s).
	● Investigative, problem-based curricular model to attend to CCSS Mathematical Practices of
	    ○ 'making sense of problems and persevere in solving them';
	    ○ 'Reason abstractly'; and
	    ○ 'look for and make use of structure,' for example.

Personalized Learning Graduation Requirements (as applicable in this course):	☐ Career Related Learning Experience (CRLE) #1 ☐ Career Related Learning Experience (CRLE) #2 *-The experience(s) will be:* ☐ Complete a resume ☐ Complete the My Plan Essay

Section 4: Cultivating Culturally Sustaining Communities

Tier 1 SEL Strategies	
Shared Agreements	I will facilitate the creation of our Shared Agreements that respects and celebrates each student's race, ability, language, and gender in the following way(s): ● Students will create class norms during the first class of the year as a whole
	I will display our Agreements in the following locations: ● Class norms will be posted in our classroom
	My plan for ongoing feedback through year on their effectiveness is: ● Revisit the classroom norms throughout the year during daily instruction ● Students will get feedback on their formal classwork and receive informal feedback during class time
Student's Perspective & Needs	I will cultivate culturally sustaining relationships with students by: ● Communicating with students every single class period using their preferred name. I will provide time and space during class to share with classmates and myself about themselves. I will check in with students individually every class about classwork and their general well-being

	Families can communicate what they know of their student's needs with me in the following ways: ● Email is the best way to reach me: rhaserot1@pps.net
Empowering Students	I will celebrate student successes in the following ways: ● Provide positive reinforcement ● Provide positive feedback paired with constructive feedback to both students and parents

	I will solicit student feedback on my pedagogy, policies and practices by:
	
	● Regular survey questions are included in the exit ticket. These will cover:
	    ○ student understanding
	    ○ pace of class
	    ○ clarity of materials/activities
	    ○

	When class agreements aren't maintained (i.e. behavior) by a student I will approach it in the following ways: ● I will remind students about our class agreements and pursue a deeper understanding of a student's behavior/action with curiosity. Norms/Agreements are also enforced by the group, not necessarily the teacher. ● I will document the student behavior and contact home if behavior continues. I will reach out to school partners such as Step-Up, SUN, counselors, coaches, other teachers and support staff.
Showcasing Student Assets	I will provided opportunities for students to choose to share and showcase their work by: ● Small group share outs ● Opportunities for students to share out to the whole class

Section 5: Classroom Specific Procedures

Safety issues and requirements (if applicable):	- Masks will be required, covering noses & mouths, during the duration of the period - If students need to take a prolonged break without their mask on, they will have space to do so outside of the classroom - Following PPS guidelines students will be separated by 3' **to the extent possible.** **No Food** will be allowed to be consumed during the class period.
Coming & Going from class	Upon arrival please locate your name tent and be prepared to receive additional instructions. Prior to departure students are asked to remain at their seats until the bell rings.
Submitting Work	I will collect work from students in the following way: - Online through Canvas, Google Forms or Desmos. - Assessments may be handed in on paper or completed through an online platform. There are no due dates for assignments.
Returning Your Work	My plan to return student work is the following: - Exit tickets will immediately return correct answers and feedback to students. - Revision Opportunities: there will be revision opportunities on all assessments.
Formatting Work (if applicable)	Directions on how to format submitted work (ex. formal papers, lab reports, etc) can be found here: N/A
Attendance	If a student is absent, they can get caught up by reviewing the lesson in **Canvas**. The lesson will include: - A copy of blank notes - A copy of teacher notes - A copy of practice problems - An answer key to practice problems - A link to the activity (**if there is an activity on that day**) - A link to the Exit Ticket.

Section 6: Course Resources & Materials

Materials Provided	I will provided the following materials to students: • Paper • Tools (Rulers, Compass, Protractors, Calculators)
Materials Needed	Please have the following materials for this course: • Writing Utensil - Pencil • 3 Ring Notebook • PPS provided Chromebook or similar device. *Franklin can help with any materials you may need as well. Please reach out to me privately and I will help you get what you need.*
Course Resources	Links will be provided in **Canvas.** Linked resources will include: • Class notes and practice problem answer keys. • Desmos activities (an interactive online math platform for activities) • Khan Academy Videos
Empowering Families	The following are resources available for families to assist and support students through the course: • Class notes and practice problem answer keys. • Desmos activities (an interactive online math platform for activities) • Khan Academy Videos
Section 7: Assessment of Progress and Achievement	
Formative Assessments	As students move through the learning journey during specific units/topics, I will assess & communicate their *progress* in the following ways: • Regular feedback on formative and summative assessments

Summative Assessments	As we complete specific units/topics I will provide the following types of opportunities for students to provide evidence of their _learned_ abilities: ● Summative assessments ● Opportunities for alternative assessment method (oral, project-based)
Student Role in Assessment	Students and I will partner to determine how they can demonstrate their abilities in the following ways: ● Students will have an opportunity to show me what else they learned that I did NOT ask them about on an assessment.

Section 8: Grades
Progress Report Cards & Final Report Cards

Accessing Grades	Students & Families can go to the following location for <u>up-to-date</u> information about their grades throughout the semester: ● Student-Vue/Parent-Vue
	I will update student grades at the following frequency: ● After every assessment
Progress Reports	I will communicate the following marks on a progress report: ● Mark: **Pass** (the student is demonstrating proficiency) ● Mark: **No Pass** (the student has not _yet_ demonstrated proficiency)
Final Report Card Grades	The following system is used to determine a student's grade at the end of the semester: ● Each Unit will have an assessment. ● There will be a cumulative final exam. ● The assessments and exam will be equally weighted. ● The cumulative grade will be the average of all Unit assessments and the Semester final exam.

	• A letter grade of A through F will be assigned based on the average ○ **> 89 % = A, > 79 % = B, > 69 % = C, > 59 % =D, and , 59% = F**
	I use this system for the following reasons/each of these grade marks mean the following: • Overall grade should reflect individual student ability, which will primarily be assessed during summative assessments.
Other Needed info (if applicable)	