Syllabus: Practices & Policies

2021-2022	Franklin High School

Section 1: Course Overview

Course Title	Geometry 1-2
Instructor Info	Name: Rob Jamieson Contact Info: rjamieson@pps.net Remind Messenger - join code: @ccefa8
Grade Level(s)	10-12
Room # for class	Room: S- 245 (periods 3,5,6) S-243 (period 8)
Credit	Type of credit: Math # of credits per semester: 0.5
Prerequisites (if applicable)	Algebra 1/2 *Students need 3 math credits to graduate*
General Course Description	In this course, students will explore geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. Areas of focus will be transformations, congruence, similarity, right triangles, trigonometry, and circles.

Section 2: Welcome Statement & Course Connections

Personal Welcome	**Hello and welcome to Geometry! I'm very excited to explore the many connections we make in this class. It will be one of my goals to make this time as exciting and interesting as possible. I like teaching geometry because it often feels like solving a puzzle. I hope you enjoy this class too!**

Course Highlights (topics, themes, areas of study)	**Making connections through looking for patterns. In geometry we study the way in which various shapes behave. Concepts will build upon one another as we progress through the year. You should learn a lot by the end of the year!**
Course Connections to PPS ReImagined Vision	• **Reflective and Empathetic Learners** • **Powerful and Effective Communicators** • **Inquisitive Critical Thinkers with Deep Core Knowledge**

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:

NOTE: The following two existing priority standards are mapped to priority standards in 8th Grade Unit 5: Data Modeling that students may have missed and may need further support with:

- **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, Talented & Gifted:* 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) and content vocabulary. 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. Explicit instruction using guided notes and teacher-provided notes.
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): Offer students time to reflect on how groups can effectively interact with each other. Offer time to share experiences and preferences in order to develop a shared set of agreements for working in groups. Offer suggestions for norms and practices that could aid in helping students interact and engage in ways that increase their sense of belonging within the classroom community.

	Remind and revisit classroom norms, especially in times of transition and following breaks from school (fall/winter/spring breaks). Formalize a list of shared classroom norms that students agree to collectively, which get posted in the classroom.
	I will display our Agreements in the following locations: Our shared norms/agreements will be displayed in the classroom as a poster for each class period of Geometry. It will also be posted as a "norms page" on our canvas course page.
	My plan for ongoing feedback through year on their effectiveness is: Revisit the classroom norms through providing feedback on an anonymous form. This will be given at the end of quarter 1, quarter 2, and quarter 3. Students will get feedback on their daily quizzes through the form of a numerical score and written feedback. Students will get informal feedback on warm-ups and the practice problems they complete in class.
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. Student families will be contacted by me throughout the school year via email/text/phone.

	Families can communicate what they know of their student's needs with me in the following ways: Via email/text/phone. I offer in-person meetings outside of the conferences if needed.
Empowering Students	I will celebrate student successes in the following ways: I make a point to celebrate when students take risks in trying to solve problems. Students will generate work that can be identified as successful for having made mathematical connections.
	I will solicit student feedback on my pedagogy, policies and practices by: Quarterly teacher feedback form (anonymous). This is reviewed with the class to see.
	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: Providing lessons that offer opportunities to publicly share their work (with or without their name attached to it). Group work galleries and revoicing of student work will be used. Displaying student thinking within investigations of new topics.

Section 5: Classroom Specific Procedures

Safety issues and requirements (if applicable):	Students will wear masks and socially distance 3 feet.
Coming & Going from class	I understand the importance of students taking care of their needs. Please use the following guidelines when coming and going from class: Say hello and goodbye! I'm glad you are here.
Submitting Work	I will collect work from students in the following way: Electronically by finishing a desmos activity (it automatically saves) In person by handing me a finished paper
	If a student misses a deadline, I will partner with the student in the following ways so they have the ability to demonstrate their abilities: Help develop a plan to learn material for that particular unit in order. Students will have an easier time by chunking the material and working on the lessons in order (G2-1 lesson, G2-2 lesson, etc.) No penalty for late work.
Returning Your Work	My plan to return student work is the following: *Timeline: Instant feedback with online platforms. Next class period feedback with tests* *What to look for on your returned work: Feedback on accuracy* *Revision Opportunities: Students may revise their test once. After that a retake is available.*
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, I can help them get caught up by: Making a manageable plan to re-engage in work without having too much too soon. Each situation is different based on ability and duration of absence.

Section 6: Course Resources & Materials

Materials Provided	I will provided the following materials to students: A notebook for geometry.
Materials Needed	Please have the following materials for this course: A growth mindset. *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	Here is a link to resources that are helpful to students during this course: Go to the Canvas site for Geometry. This has basic links but is not intended to be a summation of each day (unless we go online)
Empowering Families	The following are resources available for families to assist and support students through the course: Parent Vue to check grades/attendance. Parents/Guardians can "observe" what is posted in Canvas.

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: Instant feedback from the activities in Desmos. Daily quizzes which are returned the following class period.
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: A unit test. Students can revise the test and fix mistakes for 100% of the points during the class period following the test.

Student Role in Assessment	Students and I will partner to determine how they can demonstrate their abilities in the following ways: We aim for demonstrating understanding by providing evidence on a test. If other options are needed I can work with the student to find creative ways of demonstrating the intended learning targets.
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: Check grades in Student Vue or Parent Vue (Synergy).
	I will update student grades at the following frequency: Following each unit test. Most unit tests happen every 2-3 weeks.
Progress Reports	I will communicate the following marks on a progress report: *Mark(s): A - F* *Meaning of the mark:* *A: 100% - 90%* *B: 80% - 89.99%* *C: 70% - 79.99%* *D: 60% - 69.99%* *F: 0-59.99%* *Students should aim for getting a C or better on each unit test.*
Final Report Card Grades	The following system is used to determine a student's grade at the end of the semester: The total points from all the unit tests. The grade is 100% tests.
	I use this system for the following reasons/each of these grade marks mean the following:

	Students receive daily feedback on formative assessment and it doesn't affect their grade. The summative assessments are weighted at 100% and can be retaken and revised without penalty. Students do not get penalized for learning the material. Mistakes are allowed and fixable - we aim to improve and our grading system rewards that.
Other Needed info (if applicable)	