Syllabus: Practices & Policies

2021-2022	Franklin High School
	Section 1: Course Overview

Course Title	Geometry 1-2
Instructor Info	Name: Cohen Contact Info: dcohen@pps.net
Grade Level(s)	9-10
Room # for class	Room: S- 026 (period 2) S-245 (period 7)
Credit	Type of credit: Math # of credits per semester: 0.5
Prerequisites (if applicable)	N/A *Students need 3 math credits to graduate*
General Course Description	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!

Section 2: Welcome Statement & Course Connections

Personal Welcome	I just moved to Portland from NYC and this is my 3rd year of teaching. I'm very excited to have you in my class and I look forward to learning this year with you!
Course Highlights (topics, themes, areas of study)	**Unit 1)** Constructions **Unit 2)** Transformations **Unit 3)** Lines and Angles **Unit 4a)** Similarity **Unit 4b)** Congruence

	Unit 5) Trigonometry **Unit 6)** Coordinate Geometry **Unit 7)** Circles **Unit 8)** Solids **Unit 9)** Probability
Course Connections to PPS ReImagined Vision	● Partnerships & Collaboration ● Excellence ● Joyful Learning & Leadership ● Creativity & Innovation

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 <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:
- **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 <u>existing supporting standards</u> 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: ● Help them become inclusive and collaborative problem solvers by providing opportunities for teamwork. ● Help them become inquisitive critical thinkers with deep core knowledge by providing opportunities to develop compelling arguments based on facts and evidence. ● Help them become resilient and adaptable lifelong learners by supporting the creation of a growth mindset.

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. I will post notes we take in class onto Canvas in a shared folder. I will also be available on tutorial B days and before or after school. I will make all necessary accommodations and ask how else I can help. I will provide enrichment opportunities.
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
8/27 Work	**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 brainstorm their top 3 agreements in groups, and then we will share together as a class.

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	My plan for ongoing feedback through year on their effectiveness is: ● Conversations with students ● Communication through the Remind App as well as email and Canvas
Student's Perspective & Needs	I will cultivate culturally sustaining relationships with students by: ● Making connections through 1:1 interaction and supporting students in groups and the whole class. ● Trying to align the students interest outside of math to what we do inside of the classroom ● Making sure to include at least two real-world applications for each unit we are learning.
	Families can communicate what they know of their student's needs with me in the following ways: ● Email ● Remind App ● Google Voice
Empowering Students	I will celebrate student successes in the following ways: ● Provide positive reinforcement ● I will ask students how to best celebrate them. ● Display student work with their consent ● Provide positive feedback paired with constructive feedback
	I will solicit student feedback on my pedagogy, policies and practices by: ● Surveying students via google forms and using exit tickets. ● Having conversations with students ● Asking students for anonymous tips on what is working and what isn't

	When class agreements aren't maintained (i.e. behavior) by a student I will approach it in the following ways: ● With empathy and individually. ● 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: ● Presenting to the class or allowing me to share work anonymously to the class or another period ● Small group share outs
Section 5: Classroom Specific Procedures	
Safety issues and requirements (if applicable):	Students will be required to wear masks and social 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: ● Enter and exit quietly. ● Ask for permission before leaving so that I can keep track of where students are for safety and health concerns
Submitting Work	I will collect work from students in the following way: ● On paper or in Canvas as indicated. ● On Desmos
	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:

	• Create a plan with student to complete assignments & check in with student periodically • Late work will not count against a students grade.
Returning Your Work	My plan to return student work is the following: *Timeline:* Within 3 class periods *What to look for on your returned work:* Feedback *Revision Opportunities:* Revisions are allowed for all tests
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: • Students can email me. I will send them class materials and we will decide a time to meet to review class materials

Section 6: Course Resources & Materials

Materials Provided	I will provided the following materials to students: • Handouts
Materials Needed	Please have the following materials for this course: • Notebook or Binder • Writing utensil • Folder or place for paper • Laptop (Will be notified in advance if this will be necessary) *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: Khan Academy - Geometry
Empowering Families	The following are resources available for families to assist and support students through the course: Khan Academy - Geometry Canvas (I will post all notes)

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: ● 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: ● Proficiency-based 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 up-to-date information about their grades throughout the semester: StudentVUE or ParentVUE
	I will update student grades at the following frequency: At least biweekly.
Progress Reports	I will communicate the following marks on a progress report: *Mark: D/F-Level Meaning of the mark: Needs revision or recompletion* *Mark: C-Level Meaning of the mark: basic understanding* *Mark: B/A Meaning of the mark: Enhanced understanding*
Final Report Card Grades	The following system is used to determine a student's grade at the end of the semester: Total points for all summative assessments
	I use this system for the following reasons/each of these grade marks mean the following: I do not think formative assessment should be included in the final grade.

Other Needed info (if applicable)