Course Syllabus

Franklin High School	2020-2021

DIRECTIONS: For each course, complete the syllabus and share with your evaluating/supervising administrator **as a pdf** ("File-download-PDF document") by 9/28/20. Syllabi will be posted on the FHS website under your name for the public to view.

Course Overview

NOTE: For core classes, all elements of this section (except for name and contact information) are the same.

Course Title: Geometry 1/2

Instructor Name: Trotter	Contact Info: dtrotter@pps.net

Grade Level(s): 9,10,11,12

Credit Type: (i.e. "science", "elective") Math	# of credits per semester: 0.5

Prerequisites (if applicable): Algebra 1/2

General Course Description:
During this course, students will learn about the following topics:
1. Constructions
2. Transformations
3. Lines and angles
4. Congruence and similarity
5. Trigonometry
6. Coordinate geometry
7. Circles
8. Solids
Emphasis will be placed on specific topics as they are considered more essential for further studies in mathematics. Transformations, Lines and Angles, Trigonometry, Coordinate Geometry, Circles, are all topics that will have stronger emphasis during this class.

Prioritized National/State Standards:

Geometry Essential Standards 2020-2021

Unit 2- Transformations

Priority

   CCSS: Mathematics

    CCSS: HS: Geometry

     HSG-CO.A. Experiment with transformations in the plane

Unit 3- Lines and Angles
Priority

CCSS: Mathematics

CCSS: HS: Geometry

Congruence

HSG-CO.A. Experiment with transformations in the plane

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.

Unit 4- Congruence and Similarity

Priority

CCSS: Mathematics

CCSS: HS: Geometry

Congruence

HSG-CO.B. Understand congruence in terms of rigid motions

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.

Similarity, Right Triangles, & Trigonometry

HSG-SRT.A. Understand similarity in terms of similarity transformations

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 pairs of angles and the proportionality of all pairs of sides.

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

Unit 5- Trig

CCSS: Mathematics

CCSS: HS: Geometry

Similarity, Right Triangles, & Trigonometry

HSG-SRT.C. Define trigonometric ratios and solve problems involving right triangles

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.

Unit 6- Coordinate Geometry

CCSS: Mathematics

CCSS: HS: Geometry

Congruence

Expressing Geometric Properties with Equations

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

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

Unit 7- Circles

CCSS: Mathematics

CCSS: HS: Geometry

Congruence

HSG-CO.A. Experiment with transformations in the plane

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.

Circles

HSG-C.A. Understand and apply theorems about circles

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. Find arc lengths and areas of sectors of circles

Unit 8- Solids

CCSS: Mathematics

CCSS: HS: Geometry

Geometric Measurement & Dimension

HSG-GMD.A. Explain volume formulas and use them to solve problems

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

Modeling with Geometry

HSG-MG.A. Apply geometric concepts in modeling situations

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).

Course Details
Learning Expectations

Materials/Texts
No textbook for this course. All material will be accessible through Canvas.

Course Content and Schedule:

Unit 0 Math Mindset 1 week
Unit 1 Constructions 1.5 weeks
Unit 2 Transformations 1.5 weeks
Unit 3 Lines & Angles 2 weeks
Unit 4 Triangle Similarity 2 weeks
Unit 5 Triangle Congruence 2 weeks
Unit 6 Trigonometry 3 weeks
Unit 7 Coordinate Geometry 2 weeks
Unit 8 Circles 2 weeks
Unit 9 Solids 1 week

Differentiation/accessibility strategies and supports (TAG, ELL, SpEd, other):
Leveled, standards-based assessments with clear benchmarks for C-, B- and A-level work. Students will have practice problems that are leveled as well and provide opportunities for extensions in each learning target area. Class time is time for feedback, group work, investigations, and demonstrating understanding. During this time the habits of interaction that will be encouraged and modeled include: -Time to think independently before working collaboratively -Time to explain your reasoning -Demonstrating how to listen to understand in groups -Exploring multiple pathways to solve problems -Time to explore and compare logic in our ideas and thinking -Time to critique and debate mathematically

Safety issues and requirements (if applicable):
Students and teachers will refer to the Franklin High School Student Climate Guide when dealing with safety issues.

Classroom norms and expectations:
Students will follow the norms as outlined in class. These include phones are off and away if not being used to access coursework, students respect each other and the classroom, and that they are attentive to their work and learning. Each day will provide time to get feedback, discuss new concepts, and practice what has been learned. Students are expected to be in class on time and participate in all activities. In general, a student who follows the Franklin STRONG acronym will be demonstrating great behavior. Students and teachers will refer to the Franklin High School Student Climate Guide when addressing issues that arise.

Evidence of Course Completion

Assessment of Progress and Achievement:
Completion of assignments, projects, quizzes/tests.

Progress Reports/Report Cards (what a grade means):
Grades will be based on the student's demonstration of understanding of the standards.
Standard Grading Scale:
90-100% - A
80-89% - B
70-79% - C
60-69% - D
59- below - F
Grades are based on total points based on demonstrated understanding of the material on assignments, quizzes, projects and tests.

Career Related Learning Experience (CRLEs) and Essential Skills:
Integrated into curriculum as feasible.

Communication with Parent/Guardian
What methods are used to communicate curriculum, successes, concerns, etc.?
Email

Personal Statement and other needed info
Everyone in the "classroom" will be treated with respect at all times.