Geometry Syllabus 2019-2020

Teacher: J. Salas
Phone: (956) 271-1600

Course Description:
Topics covered include the language of geometry (points, lines, planes and angles), reasoning and proofs (paragraph, two column, flow, indirect, and coordinate), parallel and perpendicular lines, congruent triangles, applications of congruent triangles, quadrilaterals, similarity, right triangles and trigonometry, circles, polygons and area, surface area and volume, coordinate geometry, and transformations.

Course Objective:
Students will acquire and demonstrate knowledge of concepts, definitions, properties, and applications of the topics listed above as well as develop the computational skills and strategies needed to solve problems. Students will develop critical thinking and decision making skills by connecting concepts to practical applications.

Grading:

60% Major Assignments: Tests, Reports, Projects
40% Minor Assignments: Classwork, Homework, Quizzes, Composition book

Required Materials:

- 1 composition book
- Pocket folder
- protractor
- pencils
- ruler
- 6 glue sticks
- 1 boxes of Markers/pack of highlighters
- 1package of notebook paper wide ruled 100 count

Expectations:

*Be on time and prepared
*Be respectful
*Bring supplies
*Follow School Rules
*Turn in your phone and pick up your assigned calculator

Tutoring: TBA

Conference: 2nd block

Course Schedule: *This is tentative and subject to change.*

Unit 1: Logical Argument and Constructions; Proofs and Congruence

Topic 1: Tools of Geometry
- 1-1: Points, Lines, and Planes
- 1-2: Measuring Segments
- 1-3: Measuring Angles
- 1-4: Exploring Angle Pairs
- 1-5: Basic Constructions

Topic 2: Reasoning and Proof

- 2-1: Patterns and Conjectures
- 2-2: Conditional Statements
- 2-3: Biconditional and Definitions
- 2-4: Deductive Reasoning
- 2-5: Reasoning in Algebra and Geometry
- 2-6: Proving Angles Congruent

Topic 3: Parallel and Perpendicular Lines

- 3-1: Lines and Angles
- 3-2: Properties of Parallel Lines
- 3-3: Proving Lines Parallel
- 3-4: Parallel and Perpendicular Lines
- 3-5: Parallel Lines and Triangles
- 3-6: Constructing Parallel and Perpendicular Lines
- 3-7: Equations of Lines in the Coordinate Plane
- 3-8: Slopes of Parallel and Perpendicular Lines
- 3-9: Comparing Spherical and Euclidean Geometry

Topic 4: Congruent Triangles

- 4-1: Congruent Figures
- 4-2: Triangle Congruence by SSS and SAS
- 4-3: Triangle Congruence by ASA and AAS
- 4-4: Using Corresponding Parts of Congruent Triangles
- 4-5: Isosceles and Equilateral Triangles
- 4-6: Congruence in Right Triangles
- 4-7: Congruence in Overlapping Triangles

Topic 5: Relationships within Triangles

- 5-1: Midpoint and Distance in the Coordinate Plane
- 5-2: Midsegments of Triangles
- 5-3: Perpendicular and Angle Bisector
- 5-4: Bisectors in Triangles
- 5-5: Medians and Altitudes
- 5-6: Indirect Proof
- 5-7: Inequalities in One Triangle
- 5-8: Inequalities in Two Triangles

Topic 6: Polygons and Quadrilaterals

- 6-1: The Polygon Angle-Sum Theorems
- 6-2: Properties of Parallelograms
- 6-3: Proving That a Quadrilateral Is a Parallelogram
- 6-4: Properties of Rhombuses, Rectangles, and Squares
- 6-5: Conditions for Rhombuses, Rectangles, and Squares
- 6-6: Trapezoids and Kites

Unit 2: Coordinate and Transformational Geometry

Topic 7: Coordinate Geometry

- 7-1: Polygons in the Coordinate Plane
- 7-2: Applying Coordinate Geometry
- 7-3: Proofs Using Coordinate Geometry

Topic 8: Transformational Geometry

- 8-1: Translations
- 8-2: Reflections
- 8-3: Rotations
- 8-4: Symmetry
- 8-5: Compositions of Rigid Transformations

8-6: Congruence Transformations
8-7: Dilations
8-8: Other Non-Rigid Transformations

Unit 3: Similarity, Proof, and Trigonometry

Topic 9: Similarity

9-1: Similar Polygons
9-2: Similarity Transformations
9-3: Proving Triangles Similar
9-4: Similarity in Right Triangles
9-5: Proportions in Triangles

Topic 10: Right Triangles and Trigonometry

10-1: The Pythagorean Theorem and Its Converse
10-2: Special Right Triangles
10-3: Trigonometry
10-4: Angles of Elevation and Depression

Unit 4: Circles

Topic 11: Circle Measurement

11-1: Circles and Arcs
11-2: Radian Measure
11-3: Areas of Circles and Sectors
11-4: Circles in the Coordinate Plane

Topic 12: Theorems about Circles

12-1: Tangent Lines
12-2: Chords and Arcs
12-3: Inscribed Angles
12-4: Angle Measures and Segment Lengths

Unit 5: Two-Dimensional and Three-Dimensional Figures

Topic 13: Area

13-1: Areas of Parallelograms and Triangles
13-2: Areas of Trapezoids, Rhombuses, and Kites
13-3: Areas of Regular Polygons
13-4: Perimeters and Areas of Similar Figures
13-5: Trigonometry and Area

Topic 14: Surface Area and Volume

14-1: Three-Dimensional Figure and Cross Sections
14-2: Surface Areas of Prisms and Cylinders
14-3: Surface Areas of Pyramid and Cones
14-4: Volumes Prisms and Cylinders
14-5: Volumes of Pyramids and Cones
14-6: Surface Areas and Volumes of Spheres
14-7: Surface Areas and Volumes of Related Solids