Geometry

Teacher: Mr. Robert Jerome **Extra help: by appointment**
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Course Description:

This Geometry course is designed to explore the principles of geometry through hands-on investigations, problem-solving, and collaborative learning. This course emphasizes the development of critical thinking skills, spatial reasoning, and logical deduction. Students will engage in activities that promote deep understanding of geometric concepts, properties, and proofs, while fostering a classroom environment that encourages active participation and mathematical discourse.

Course Objectives:

- To develop a solid understanding of fundamental geometric concepts, including points, lines, angles, and shapes.
- To apply deductive reasoning and logical thinking to solve geometric problems and proofs.
- To develop spatial visualization skills and an appreciation for the practical applications of geometry.
- To foster collaborative learning and effective communication through mathematical discourse.
- To cultivate a growth mindset and build confidence in problem-solving.

Expectations

- **Active Participation:** Students are expected to actively engage in classroom discussions, group activities, and problem-solving tasks. They should contribute their ideas, ask questions, and share their thought process with their peers.
- **Collaborative Learning:** Students are expected to collaborate with their classmates, work in teams, and support each other's learning. They should actively listen to their peers, provide constructive feedback, and participate in group projects or presentations.
- **Critical Thinking:** Students are expected to develop and apply critical thinking skills. They should analyze problems from multiple perspectives, evaluate different strategies, and justify their solutions with logical reasoning.
- **Problem-Solving Skills:** Students are expected to develop effective problem-solving strategies. They should approach complex problems systematically, break them down into manageable steps, and apply appropriate mathematical techniques and concepts.
- **Communication Skills:** Students are expected to communicate their mathematical ideas clearly and effectively. Students must articulate their thoughts, explain their reasoning, and present their solutions in a coherent manner, both orally and in writing using appropriate mathematics-based vocabulary.
- **Growth Mindset:** Students are encouraged to develop a growth mindset and embrace challenges. They should view mistakes as opportunities for learning, persevere in solving difficult problems, and believe in their ability to improve their mathematical skills.
- **Respectful Classroom Environment:** Students are expected to create and maintain a respectful and inclusive classroom environment. They should listen to others without interruption, value diverse perspectives, and treat their classmates and teacher with respect and kindness.

Required Materials

- Binder or notebook and folder for GEOMETRY ONLY. A binder is suggested so handouts can be inserted and kept organized.
- Pencils. Mistakes happen and should be anticipated.
- Chromebook (FULLY CHARGED). It is the student's responsibility to be prepared. I do not have extra chargers. Chromebooks will be used regularly to disseminate and collect student work.
- A scientific or graphing calculator for use at home. Calculators are available for use in class.
- A small pack of colored pencils for use at home. Color coding or highlighting parts of the picture make it much easier to visualize during the learning process. Colored pencils are available for use in class.

Note: Classroom supplies are provided for convenience. Students who do not respect school or personal property, not using supplies appropriately, and/or not cleaning up after themselves, will not have access to classroom supplies moving forward.

Grading Policy

Semester grades will be calculated by the following weighted categories.

Homework: 5%

Quarterly Exam: 15%

Assessments (Do Nows, Classwork, Test/Quiz, Project): 80%

- Point Values will vary based on type and breadth of the assignment. For example: Do Now - 5 pts, classwork - 10 pts, mini quiz - 25 points, quiz/test - 50 - 100 points

It is imperative that students seek support as soon as they feel that they are struggling. I encourage students to utilize my website (mrjgeometry.com) and seek quality in-person and/or online instructional support resources without hesitation.

There will not be any Extra Credit assignments. Students will have the opportunity to re-take one in-class assessment from the marking period, during the last week of the quarter. Mini-quizzes, take-home assessments, group projects, etc. will not be eligible for a re-take. Only in-class quizzes or tests are eligible. Only 1 assessment may be re-taken during the last week of the marking period. A re-take is optional, and students will be given a choice of eligible assessments to select from.

**** Most assessments will be given in OnCourse Classroom. Students will be given an assessment notebook to keep in class to show all work for all assessments. It is the student's responsibility to review all returned work and schedule time with the teacher to address any questions or concerns about their grades. ****

Any incident regarding academic dishonesty will be addressed immediately. Any student found to be cheating will receive a zero, and that assessment will not be eligible for re-take. Additionally, contact at home will be initiated and an academic referral will be submitted. Any repeat incident may result in the student receiving a failing grade for the course, according to school policy. Students are expected to put forth genuine effort. The use of any unauthorized support during an assessment will be considered cheating.

Attendance

Being **present** holds significant importance as it enables students to fully engage in collaborative learning experiences and critical thinking processes. It allows students to actively contribute, learn from their peers, and develop a deeper understanding of geometric concepts in a supportive and engaging classroom environment.

Being **absent** means missing out on valuable classroom discussions, group activities, and inquiry-based learning experiences that are designed to promote mathematical reasoning and engagement. Being absent can cause a delay in a student's progress and make it challenging for them to stay on track with the rest of the class.

The student is responsible for taking proactive measures, such as: **Obtaining Missed Materials, Seeking Clarification, Making Up Missed Collaborative Activities, Reviewing and Studying Independently**

To this end, my website contains: class notes, lesson videos, extra practice problems with solutions.

Any missing work will receive a *ZERO* in the gradebook, until made-up. Tests and Quizzes will be made up the DAY YOU RETURN TO CLASS. Exceptions will be made at teacher's discretion and in accordance with school policy.

Discipline

Certain behaviors will not be accepted as they can hinder the collaborative and inclusive learning environment. Some examples include Disruptive Behavior, Disrespectful Communication, Lack of Participation, Negative Attitude or Put-Downs, Failure to follow school and/or classroom policies and procedures.

All school rules will be upheld. This includes tardiness, the wearing of IDs, dress code, academic dishonesty, the use of electronics such as phones, headphones/earbuds, and smartwatches. Administrative referrals will be written for such infractions.

I encourage students/parents to contact me with any questions or concerns. The best way to reach me is via email. Please feel free to schedule time to speak with me privately as needed.

COURSE INFORMATION GUIDE DISCLAIMER: All of the above content of this document is subject to change at any time during the semester by the classroom teacher, as deemed necessary based on instructional, classroom, and management needs.

Summary of Topics

Foundations of Geometry
Points, Lines, Planes
Segment and Angle Relationships
Midpoints and Bisectors

Reasoning and Proof
Inductive and Deductive Reasoning
Conditional Statements
Segment and Angle Proofs
Congruence and Similarity Proofs

Perpendicular and Parallel Lines
Properties and Application
Slope and Distance
Resulting Angle Relationships

Congruent Triangles
Properties and Classifications of Triangles
Special Segments
Right Triangles
Inequality relationships within Triangles
The Triangle Inequality

Quadrilaterals
Parallelogram
Rectangle
Rhombus
Square
Trapezoid

Proportions and Similarity
Ratios, proportions, scale factor
Defining and identifying Similar Triangles
Proportionality within triangles
Parts of similar triangles

Right Triangles
Pythagorean Theorem
Special Right Triangles
Trigonometry

Circles
Properties of circles
Angle and Arc relationships
Arc and Chord relationships
Tangents and Secants

Area and Perimeter of Plane Figures
Polygons
Circles
Compound/Complex figures
Geometric probability

3-dimentional Figures
Volume
Surface Area

Transformations
Translation
Rotation
Reflection
Dilation