

Course Outline Geometry Tom Light

Room I-2

I. General Information

a. Geometry

b. Prerequisites: Successful completion of Algebra 1 with a grade of "C" or better. Students will be allowed to use a scientific calculator.

c. Grade Level: 8-12

d. Length 1 year

e. Credit: 5 credits per semester

f. Course Summary: This is the traditional high school geometry course based on Euclidean geometry. The principal objective of the course is to introduce the student to elementary logic and mathematical proof using traditional geometry concepts. The course is rapidly paced and the student should expect about 90 minutes of homework after each class session.

II. Course Content

Geometry: The geometry skills and concepts developed in this discipline are useful to all students. Aside from learning these skills and concepts, students will develop their ability to construct formal, logical arguments and proofs in geometric settings and problems.

Content Standard		Quarter 1	Quarter 2	Quarter 3	Quarter 4
		Sections	Sections	Sections	Sections
1.0	Students demonstrate understanding by identifying and giving examples of undefined terms, axioms, theorems, and inductive and deductive reasoning.	1.1, 1.2, 1.3			

		2.1, 2.2, 2.3			
2.0	Students write geometric proofs, including proofs by contradiction.	2.5, 2.6 3.2	4.3, 4.4, 4.5, 4.7 5.6		
3.0	Students construct and judge the validity of a logical argument and give counter examples to disprove a statement.	1.1 2.1, 2.2, 2.3 3.1			
4.0	Students prove basic theorems involving congruence and similarity.	1.4 2.4, 2.5, 2.6 3.2, 3.3, 3.4	6.2, 6.3, 6.4, 6.5		10.2, 10.3, 10.5 11.3

Content Standard		Quarter 1	Quarter 2	Quarter 3	Quarter 4
5.0	Students prove that triangles are congruent or similar, and they are able to use the concept of corresponding parts of congruent triangles.		4.2, 4.3, 4.4, 4.5, 4.6, 4.7	8.1, 8.2, 8.4, 8.5 9.1	
6.0	Students know and are able to use the triangle inequality theorem.		5.5, 5.6		
7.0	Students probe and use theorems involving the properties of parallel lines cut by a transversal, the properties of quadrilaterals, and the properties of circles.	3.3, 3.4, 3.5	6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7	8.6	10.1, 10.2, 10.3, 10.4, 10.5, 10.7

8.0	Students know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.	1.7	6.7	9.2	11.2, 11.3, 11.4, 11.5, 11.6 12.1, 12.2, 12.3, 12.4, 12.5, 12.6, 12.7
9.0	Students compute the volumes and surface areas of prisms, pyramids, cylinders, cones and spheres; and students commit to memory the formulas for prisms, pyramids, and cylinders.				12.1, 12.2, 12.3, 12.4, 12.5, 12.6, 12.7
10.0	Students compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.	1.7	6.7	9.2	11.2, 11.6
11.0	Students determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.			8.3, 8.7	11.3 12.7
12.0	Students find and use measures of sides and of interior and exterior angles of triangles and polygons to classify figures and solve problems.	1.4	4.1, 4.6 6.1, 6.2, 6.3, 6.4, 6.5, 6.6		11.1

Content Standard		Quarter 1	Quarter 2	Quarter 3	Quarter 4
13.0	Students probe relationships between angles in polygons by using properties of complementary, supplementary, vertical, and exterior angles.	1.6 2.6	4.1, 4.6 5.5, 5.6 6.1, 6.2		11.1
14.0	Students probe the Pythagorean theorem			9.2, 9.4	
15.0	Students use the Pythagorean theorem to determine distance and find missing lengths	1.3	5.1, 5.2	9.2, 9.3	

	of sides of right triangles.				
16.0	Students perform basic constructions with a straightedge and compass, such as angle bisectors, perpendicular bisectors, and the line parallel to a given line through a point off the line.	1.5 2.5 3.1, 3.5	4.3 5.3 6.2	7.3 8.5, 8.6, 8.7	10.2, 10.3 11.2
17.0	Students prove theorems by using coordinate geometry, including the midpoint of a line segment, the distance formula, and various forms of equations of lines and circles.	1.3, 1.5 3.6, 3.7	4.7 5.4 6.2, 6.3, 6.4	7.1, 7.2, 7.3, 7.4, 7.5, 7.6 8.4 9.7	10.6
18.0	Students know the definitions of the basic trigonometric functions defined by the angles of a right triangle. They also know and are able to use elementary relationships between them. For example, $\tan(x) = \sin(x)/\cos(x)$, $(\sin(x))^2 + (\cos(x))^2 = 1$			9.5	
19.0	Students use trigonometric functions to solve for an unknown length of a side of a right triangle, given an angle and a length of a side.			9.5, 9.6	11.2, 11.4, 11.5
20.0	Students know and are able to use angle and side relationships in problems with special right triangles, such as 30-60-90 triangle, and 45-45-90 triangles.			9.4	

Content Standard	Quarter 1	Quarter 2	Quarter 3	Quarter 4
21.0				10.1, 10.2, 10.3, 10.4,

	Students prove and solve problems regarding relationships among chords, secants, tangents, inscribed angles, and inscribed and circumscribed polygons of circles.		5.2		10.5 11.3, 11.4, 11.5
22.0	Students know the effect of rigid motions on figures in the coordinate plane and space, including rotations, translations, and reflections.			7.1, 7.2, 7.3, 7.4, 7.5, 7.6	

III. INSTRUCTIONAL PLAN.

Semester 1

Chapter 1: Basics of Geometry

Chapter 2: Reasoning and Proof

Chapter 3: Perpendicular and Parallel Lines

Chapter 4: Congruent Triangles

Chapter 5: Properties of Triangles

Chapter 6: Quadrilaterals

Semester 2

Chapter 7: Transformations

Chapter 8: Similarity

Chapter 9: Right Triangles and Trigonometry

Chapter 10: Circles

Chapter 11: Area of Polygons and Circles

Chapter 12: Surface Area and Volume

Students will be presented the material in each chapter in a variety of ways, this provides the student with multiple opportunities for understanding. If the students don't understand a concept one way, they can be retaught using a different approach.

The chapter material will be broken down into several sections. These sections will become the focus of the daily objective. Over the semester, daily objectives are often revisited as they relate to a new topic.

The teacher will introduce daily objectives first. During the presentation students are encouraged to take class notes. Next, students will be given an opportunity to practice the daily objective in class (Guided Practice) either at their desk, on the chalkboard, or in small groups. Once students have practiced the objectives and individual questions have been answered, homework will be assigned. Homework should be started the day it is assigned to reinforce what has occurred in the class discussion and guided practice of the daily lesson.

IV. Assessment:

Students will earn a letter grade (A+ through F) based on their achievement in the course. Each graded assignment, test, quiz, etc., is important. Progress reports will be given occasionally to help monitor student progress. Grades are entered into my grading program as a letter grade and assigned a computer code value as follows. A+ 100, A 95, A- 90, B+ 85, ... D 50, D- 45, F + 40, F 1, absent 0. The program will then calculate a course grade using the weighted percentages for each category listed below and print the letter grade earned for that student.

The student's final grade is broken down in the following way: FINAL: 25%
(Department Requirement)

CHAP and MID TERM EXAMS 45% (Count 70% until Final).

HOMEWORK: 15%

HANDOUT/CLASSWORK: 10%

OTHER: 5%

[I reserve the right to change these percentages if more is accomplished than expected in any one area.] Missed Exams: Students will take the missed exam the day they return or the exam will be replaced with the student's midterm (during Q1, Q3) or semester final (during Q2, Q4). Exams are not returned to students to keep. Missed quizzes or other class activities will be replaced with the current chapter exam.

V. Text

McDougal Littell Geometry: Reasoning, Applying, Measuring by Larson, Boswell, Stiff

VI. Please Follow These Basic Rules Daily. These basic rules are in addition to the rules presented in the (PGHS) student handbook.

1. **Be prompted, on time.** Be inside and in your seat when the tardy bell rings.

A. **Bring paper, writing instrument, book, and required homework or other work.**

- Students are required to keep a well-organized notebook containing separate sections for daily notes, homework, handouts, and other class assignments.
- Bring supplies daily: pen/pencil, paper, notebook, text or other items required by teacher.
- No completing other class/school homework while in class. Such work will be confiscated.

A. **Come to class with an attitude that you will work.**

- In class focus, concentrate, and be on task. Give yourself every opportunity to do well.
- It is important to have a quiet atmosphere. No talking without acknowledgment from the teacher.
- No passing of notes or attending to personal correspondences while in class. This includes the use of a cell phone.

A. **Respect yourself and others.** Substitutes must be respected as adults and as the teacher for that day. Any negative report by the substitute on a specific student will result in a referral, one detention and being placed on a behavior contract.

- Respect your classmates. Help your classmates improve.

A. **Profanity of any kind is not permitted.**

B. **Electronic Devices.**

- Electronic devices are *not allowed to be on or visible* in class. They must remain out of site and in the off mode. Any Electronic Device, which is on, out, or goes off in class will be confiscated and turned into the office, and the student will be placed on a Disruptive Behavior Contract. Electronic Devices include, but not limited to, Cell Phones, Walkmans, Gameboys, etc.

- ATTENDANCE IS IMPORTANT. Continued absences impact both class performance and grade. Be sure to send in homework requests when absent. Upon returning check assignment clipboard.
- Make-up work is accepted for a legally excused absence from the office. The student is responsible for requesting make-up work the day they return, and due no later than the next class session. No work will be accepted several class sessions after the student has returned unless prior arrangements have been made.
- If you are absent, call a friend to get the homework. Do not wait until the next class session to get your homework.

1. Consequences

- A. Late students will be marked tardy and placed on the school tardy contract. A phone call home is required on the third step of five steps (fifth step student is dropped.)
- B. Consistently unprepared students will be on the school academic contract. Phone call on the second step, parent conference on third, student dropped on fourth step.
- C. Inappropriate behavior from individual students who interfere with the learning and teaching process will be place on a school behavior contract. Phone call on the second step, parent conference on third, student dropped on fourth step.

1. Extra Help is Available

A. Before or after school.

B. Lunch by appointment.

4. I'm looking forward to having your son/daughter in class. If you have any questions please give me a call at 646-6590 ext. 236.

File the policy statement in your binder. Please remove this last sheet and return it with your signature. Your signature below indicates that you have read the class policy for Geometry

Mr. Light

Geometry

Student Name (Print) _____

Student Signature _____

Parent Name (Print) _____

Parent Signature _____