

Geometry

Syllabus: 2009-2010

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Text: *Geometry*, Larson, Boswell, Stiff; McDougal Littell, 2007

Online help: [.classzone.com](http://classzone.com)

Geometry Purpose and Objectives

In *Geometry*, you will develop reasoning and problem solving skills as you study topics such as congruence and similarity, and apply properties of lines, triangles, quadrilaterals, and circles. You will also develop problem solving skills by using length, perimeter, area, circumference, surface area, and volume to solve real-world problems.

-from *Geometry*, Larson, Boswell, Stiff; McDougal Littell, 2007

In addition to applying geometric principals (theorems, postulates, and corollaries), there will also be many instances where students will solve problems using algebra, data analysis, and probability.

Course Content:

1st Semester

Ch 1: Basics of Geometry

Identifying points, lines, planes; segments and congruence; midpoint and distance formulas; measure and classify angles; angle pair relationships, classify polygons; find perimeter, circumference, and area

Ch 2: Reasoning and Proof

Inductive reasoning; analyze conditional statements, apply deductive reasoning; use postulates and diagrams; reason using algebraic properties; prove statements about segments and angles; prove angle pair relationships

Ch 3: Perpendicular and Parallel Lines

Identify pairs of lines and angles; parallel lines and transversals; prove lines are parallel; find/use slope; write/graph equations of lines; prove theorems about perpendicular lines

Ch 4: Congruent Triangles

Triangle sum properties; congruence and triangles; prove triangles congruent using SSS, SAS, HL, ASA, AAS; isosceles and equilateral triangles

2nd Semester

Ch 5: Properties of Triangles

Midsegment theorem and coordinate proof; perpendicular bisectors, angle bisectors of triangles; medians and altitudes, inequalities in a triangle; inequalities in two triangles and indirect proof

Ch 6 Similarity

Ratios, proportions, geometric mean; use proportions to solve geometry problems; similar polygons

Ch 8: Quadrilaterals

Find angle measures in polygons; properties of parallelograms, rhombuses, rectangles, squares, trapezoids, and kites; special quadrilaterals

Ch 10: Properties of Circles

Properties of tangents; find arc measures, properties of chords; inscribed angles and polygons; write/graph equations of circles

Ch 11: Measuring Length and Area

Areas of triangles, parallelograms, trapezoids, rhombuses, kites; perimeter and area of similar figures; circumference and arc length; areas of circles and sectors; areas of regular polygons; geometric probability

Ch 12: Surface Area and Volume of Solids

Surface area of prisms, cylinders, pyramids, cones; volume of prisms, cylinders, pyramids, and cones; surface area and volume of spheres

Ch 9: Right Triangles and Trigonometry (time permitting)

Instructional Activities: Instructional activities will include lecture, note-taking, class discussions, sample problems (student- and teacher-led), small group work, homework checks, projects, quizzes, chapter tests, final exams. In addition to the textbook and handouts, students will use Internet materials for additional practice and assignment/test schedule. Assessments generally occur mid-chapter and end-of-chapter and are designed to evaluate the student's ability to apply the material covered up that point.

Classroom Expectations:

Students should come to class on-time and prepared: students should bring their textbook, Geometry binder, and pencil bag/box to class every day (see **Supplies List** below).

All work is to be done **in pencil on loose leaf paper**. Homework (HW) is assigned and checked daily. Students should use a red pen when checking their HW. If a HW assignment is not immediately collected, it is expected that any incorrect HW problems be corrected and then that assignment placed in the HW section of the binder – it may or may not be collected at a later time. HW is collected randomly without prior notice and due when called for. A completed, corrected HW assignment is worth a maximum of 5 points; late assignments and work ripped from a spiral notebook receive no credit. To receive full credit, **all work must be shown**. Lists of answers are not permitted.

When a student has been absent, school guidelines regarding make-up work will be followed (see Student Handbook). Note, **if a student is out the day before a previously announced test, the student is expected to take the test with the class when she returns on test day.** If a student is in school the day work is due or the day of a test, even if she checked in late or left early, she is still responsible for the work/test (unless leaving due to illness).

If a student is to miss class due to a school activity, it is expected that the student hand in the assignment due that day, get that day's assignment, and come to class the next day prepared. If a test is scheduled on the day of the activity, the student must take the test prior to leaving for the school activity either before school or during study hall. It is the student's responsibility to pre-arrange the time of the make-up test.

All school rules will be followed (see Student Handbook). Pink slips will be given for lack of compliance. Cheating on a test or copying another student's homework will result in a grade of zero for that test or assignment and the incident will be reported to the Academic Dean and the Dean of Students with no opportunity to make up that test or assignment. Talking or creating any distraction while an assessment is being administered will result in a 20% deduction in the student's score on that assessment.

Cell phones and other electronic devices are not to be seen nor heard during the school day or they will be confiscated on site, per school policy, and a pink slip issued. Students should have only their Geometry materials on their desk during class. **Any non-Geometry materials brought to class must be stored under the student's desk so that the aisles remain clear.**

Restroom trips need to be made during passing time; therefore, passes to the restroom will be issued on an emergency basis only.

After-school math help is available Monday, Tuesday, and Wednesday from 3:00-3:30 in Room 208. National Honor Society peer tutoring is also available by signing up on the NHS bulletin board. I may have some availability for help before school by appointment. Students are encouraged to get help before the situation gets out-of-hand. Because math builds on itself, **getting help immediately when a problem arises is far more beneficial** than waiting until the night before the test to seek help.

Supplies List:

- textbook
- 3-ring binder (with sections for notes, homework, returned tests, paper)
- loose leaf paper, graph paper
- composition book or spiral notebook (for maintaining a record of theorems, postulates, and corollaries only!)
- pencil bag/box containing the following:
 - pencil (preferably mechanical)

- eraser
- red checking pen
- 6 inch ruler
- small protractor (approximately 3.5 inches wide)
- compass (may want to buy two so you can keep one at home)
- small pair of scissors
- package of colored pencils
- scientific calculator with *sin*, *cos*, and *tan* buttons
- a compact stapler is useful but optional

Participation

Participation in Geometry class involves more than responding when called upon. It also involves being prepared with completed homework assignments on a daily basis.

Sometimes a student has discovered an alternate method for deriving a solution and this allows her the opportunity to share this thought process with the class.

Recommended Study Habits and Tips

I have found that the students who do well in my class are those who take concise notes during class, work extra problems and take self-quizzes from the online textbook resource, and study for assessments by re-reading their notes and the text and then working a variety of problems. There is often a 10-15 minute period after new material has been presented for the students to begin work on the new assignment. I encourage students to use this time to begin their Geometry homework so that, if questions arise, they can get help immediately.

Assessment Breakdown

The math department utilizes a weighted grading scale: tests and quizzes are worth 75% of the grade; homework (including class work, notes, and projects) is worth 25%.

Grading Procedure

Grading will be based on the following scale:

	A	95-100	A-	93-94	
B+	91-92	B	87-90	B-	85-86
C+	83-84	C	76-82	C-	74-75
D+	72-73	D	67-71	D-	65-66
F	below 65				

The two quarter grades will be averaged together and will represent 80% of the semester grade. The semester final will count as 20% of the semester grade.

