

PRE AP GEOMETRY A SYLLABUS, Fall Semester 2007

Pre AP Geometry Instructional Team: Conference Period 4r; School Phone: 713-688-1361
R. Thornburg RTHORNBUR@houstonisd.org
M. Shirey mshirey@houstonisd.org

Pre-requisite: Credit in Algebra 1b or PreAP Algebra 1b or Pre IB Algebra 1b

Resources: Many items are utilized in this course:

- Textbook: *Geometry*, McDougal Littell (2007)
- Textbook (class): *Discovering Geometry*, Key Curriculum Press (2004)
- *Laying the Foundation: Connecting Geometry to Advanced Placement® Mathematics*, Advanced Placement Strategies, Inc. (2003)
- *Study Guide for Mathematics Grade 10*, Texas Education Agency (2003)

Course Description: This course is designed to comply with the Texas Essential Knowledge and Skills (TEKS) and the Houston ISD CLEAR Curriculum, Geometry update 2007-08. The course builds on work from the middle school, formalizing concepts within a broader context. Geometry connects to algebra throughout the course and connects to the world outside of school through a variety of applications and settings.

Geometry has played a vital role in mathematics for centuries. It formed the basis for much of the study of mathematics in the past and continues to allow students to exploit topics that extend to other branches of mathematics and other disciplines. Geometry offers powerful tools for representing and solving a variety of problems. Students can use the visual appeal of geometry to explore and consider the usefulness of this subject to engineers, scientists, artists, and others.

The list of topics covered in a Pre-AP mathematics program looks much like the topics that are covered in a “normal” mathematics sequence. What differs is the sophistication of the response we ask of students, the rigor of the work we require, and the global connections that reach far beyond the boundaries of what is done in our textbooks. The greatest difference is the strong expectation that all of the students in a Pre-AP program are preparing for Advanced Placement classes in calculus and/or statistics. The current thought for the geometry course is to provide more opportunities for students to apply what they are learning in situations similar to what they will see in the future. Rather than wasting time by reteaching basic geometry that had been previously covered in middle school, the Pre AP Geometry curriculum focus is for students to apply major concepts in new and unusual ways—to vertically build upon the concepts that will be needed for further courses. The students have opportunities to glimpse the exciting future that lies ahead of them WHEN they take AP Calculus and AP Statistics.

Geometry is now a state required mathematics course for graduation. Geometry comprises about 35% of the questions on the Texas Mathematics Exit Level Exam (Grade 11). Many problems on the PSAT, SAT, and ACT are solved by applying concepts and strategies from Geometry.

The following topics will be explored through a guided discovery approach using varied instructional strategies:

- Essentials of Geometry
- Reasoning and Proof
- Parallel and Perpendicular Lines
- Transformations
- Congruent Triangles
- Relationships within Triangles
- Similarity

The study of Geometry and today’s students: Geometry is an extremely verbal form of mathematics. It is usually the first course in which a student must think abstractly. The student must analyze a problem, determine the problem type, identify and use a strategy, derive a solution, and check that solution for

appropriateness and reasonableness. Things are no longer cut and dry. All of this analyzing takes time and patience, which the average high school student is not always willing or capable of giving. For the first time, the student must actually think through a problem instead of merely reacting to the mechanics of the problem. A variety of techniques are employed:

- ✓ *Cooperative groups*—students work in teams to perform investigations, examine data, justify conclusions, share and discuss ideas
- ✓ *Manipulatives*—concrete experiences to develop abstract concepts
- ✓ *Discussion and writing*—record observations and thoughts in journal and problem-solving activities
- ✓ *Develop number sense skills and practice mathematics* as a component of daily life.
- ✓ *Integrate technology*—use of graphing calculators as a problem solving tool as well as geometry software and web resources to test conjectures and research concepts.
- ✓ *Literacy*—mathematics has a unique language. Students need to be proficient in order to communicate with one another and perform needed computations.

***Students must realize that mathematics is not a spectator sport;
proper study involves time and patience and practice!***

Student Expectations:

- For the past several years, business and industry have requested schools to assist students in working together through a team approach. Employers are looking for workers who are able to conduct themselves in an appropriate manner, be attentive, meet deadlines, and participate and work together with appropriate problem solving strategies.
- Texas state law includes a provision that students must attend class at least 90% of the time to receive course credit towards diploma. Please follow the attendance procedures for absences. More than two unexcused absences will result in loss of course credit.
- Houston ISD, through its high school reform initiative, has placed additional emphasis on literacy and its many forms. Today's students must have skills to read, write, speak, listen, and communicate effectively.
- For the safety of all students, Houston ISD and Waltrip expect that students will read and comply with the guidelines for dress code, cell phone use, and medical information.
- Library resources are available to Waltrip students from 7:30 AM to 5:30 PM daily. Students have access to on-line information data bases from home computers.
- Students and their parents should begin to consider post secondary plans for further education. Planning now will help in assuring that the necessary courses and procedures are in place.

Standardized Assessment: The Geometry instructional team will work with problem-solving and test-taking strategies to assist students in their preparation for various testing programs.

- PSAT will be administrated at Waltrip in mid October. The College Board has developed unique materials for students and their parents to explain test results and profiles. Information will be provided from the Guidance Department.
- The state testing program, TAKS, will be administered mid April. In order to receive a high school diploma in Texas, students in Grade 11 must pass the Exit Level tests in English/Language Arts, Mathematics, Social Studies, and Science. Grade 10 testing is extremely important in preparing for these exit level exams.
- For future planning, the SAT should be scheduled and taken in the spring semester of the student's junior year.

Conduct: Courtesy and respect among students and teachers are expected. Behavioral problems take away from the learning process. Parents will be notified when the student does not comply with agreed upon class room norms.

Class rules: Norms (operation procedures) will be formulated in each class with these considerations: respecting the rights of others, being prepared for class, following oral and written directions, and having the proper tools and supplies as well as proper attitude.

Students will not consume food or liquids in the classroom at anytime.

Consider the following expectations:

1. Respect and encourage the right to teach & the right to learn at all times.
2. Be actively engaged in the learning—ask questions, collaborate, and seek solutions.
3. Be on time to fulfill your daily commitments.
4. Be appropriate; demonstrate behavior that is a consideration of the community--Waltrip and you.
5. Be truthful; communicate honesty.
6. Be responsible and accountable for your choices.

Supplies:

- Please refer to the list provided to students.
- Students are expected to bring daily to class: notebook, blue pen and pencil, and a *positive* attitude to do the best he/she can do.
- Proper use of class supplies will be discussed in class.
- It is highly recommended that every student purchase a TI 83+ or TI 84+ graphing calculator for use in math and science classes. Calculators will be available for in-class use to all students.
- Bring a planner book to record due dates and plan study time.

Class environment: Many activities are used in class to engage the students and to meet the objectives for the unit and for each day. Students are expected to work together to achieve their objectives.

When students work in cooperative teams, *each member is expected to take an active part, fulfilling his/her role.*

All questions are opportunities for learning. Every effort is made to cover course material carefully in class. Due dates for all activities are clearly posted.

The student notebook will play an important role in keeping course work together. Papers are placed in appropriate sections. Restudy of vocabulary and corrected papers will help keep students focused on the big picture of each unit and how those units make relevant connections.

All students are encouraged to keep up with their work on a daily basis and obtain help when they experience difficulties. Every effort is made for discussion in class; students should be attentive and participate in class discussion and work with their team partners. Tutorial information will be posted in each classroom.

Absences: Attendance is important and directly related to the success of the student. Houston ISD policies as well as Waltrip policies will be followed. The student has five days upon return to class to make-up work due to excused absences; unexcused absences will receive grades of “zero.”

- Students should have a phone number or email address of a class member to notify in case of an absence to see what activities/assignments did occur.
- Students and parents are welcome to email the teacher directly for any course information or clarification.
- If a student knows in advance that they will be out of class (example-- a field trip), he/she should notify the teacher and make arrangements as needed.

- Students with excessive absences due to illnesses may request assignments be sent to them through their academy counselor.
- Students with projects or extended time class assignments should take care of those activities in a timely manner to avoid conflicts with due dates in any classes.

Grades/Assessment: Students should maintain a record of their course goals and progress. Throughout the school year, schools will receive two types of reports every six week grading cycle: a progress report after completion of the 3rd week and a report card after completion of the 6th week.

Assessment takes on many forms. Overall, course grades are determined on a weighted scale:

<u>Major Grades</u> (Tests, Projects, Notebook Checks, etc.)	50%
<u>Class activities</u> (Assignments, group work, quizzes, etc.)	50%

Procedures for written work:

- 1) Upper left corner—student name and date. Once classes are settled, students will be assigned a class alpha number to also record.
- 2) Class papers will have titles. Textbook work should have page number and problem numbers also recorded.
- 3) Activities are written in pencil with corrections make in blue ink.
- 4) Designated activities, especially vocabulary work, are written in ink. Color pencils/markers may be used.
- 5) Work is recorded going DOWN the paper, not across. Double columns may be used. A line is skipped between sections of work, not necessarily each problem.
- 6) Frequently, answers to geometry exercises are short and quickly written. There are times when the student should be aware of the process involved to solve the problem—student work must be shown and the work must support the answer.
- 7) Further instructions regarding class work will be provided. Time will be available for questions related to the assignment or task.
- 8) Due dates for all work will be clearly announced and stated.

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The Pre AP Geometry team looks forward to a challenging year full of opportunities! We look forward to meeting parents at the Open House and look forward to your support for your child's success.

Students and parents—once you have read this document, please sign the acknowledgement form (next page). Students, please return this signed sheet to your teacher as soon as possible!

