



Geometry Syllabus
CHS Mathematics Department

Contact Information: Parents may contact me by phone, email, or visiting the school.

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- Google Classroom

CCSD Vision Statement: The Chillicothe City School District will provide tomorrow's leaders with a high quality education by developing high expectations and positive personal relationships among students, staff, and community members.

CCSD Mission Statement: The Chillicothe City School District empowers students to learn, to lead, and to serve.

Course Description and Prerequisite(s) from Course Handbook:

Geometry - 262

State Course #: 111200

Prerequisite: Algebra I

Required Option

Grade: 9-10

Graded Conventionally

Credit: 1

Course Description:

A study of two and three-dimensional geometry including representing problem situations using geometric models, deductive reasoning, and geometry from an algebraic perspective. The fundamental purpose of the course in Geometry is to formalize and extend students' geometric experiences from the middle grades. Students explore more complex geometric situations and deepen their explanations of geometric relationships, moving towards formal mathematical arguments. Close attention should be paid to the introductory content for the Geometry conceptual category found in the high school CCSS. The Mathematical

Practice Standards apply throughout each course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. Near the end of the course, students will take the Ohio State Test for Geometry.

Learning Targets: Defined below for clarity are the Unit Titles, Big Ideas of every Unit taught during this course, and the Essential Questions to be answered to better understand the Big Ideas. A student's ability to grasp and answer the Essential Questions will define whether or not he or she adequately learns and can apply the skills found in Big Ideas. This will ultimately define whether or not a student scores well on assessments administered for this course.

- **1st Quarter**
 - **Unit I Title: Probability and Measurement**
 - **Big Idea #1:** I can analyze and interpret data and use that information to evaluate the probability of an event.
 - *Essential Question #1: How do I find probabilities of independent and dependent events?*
 - *Essential Question #2: How do I find probabilities of events that are mutually exclusive, events that are not mutually exclusive, and the complement of an event?*
 - **Big Idea #2:** I can analyze and interpret data and use that information to evaluate the probability of an event.
 - *Essential Question #1: How do I find the probabilities of events given the occurrence of other events?*
 - *Essential Question #2: How do I construct and interpret two-way frequency tables?*
 - **Unit II Title: Tools for Geometry Part I (G.CO.1 and G.CO.9-10)**
 - **Big Idea #1:** I can define and reason about lines and their lengths.
 - *Essential Question #1: How do I identify and model the basic geometric structures (points, lines, planes, rays, opposite rays, and angles)?*
 - *Essential Question #2: How do I construct a copy of a segment and a segment bisector?*
 - *Essential Question #3: How do I accurately find and solve problems involving segment measures, midpoints and distance?*
 - **Big Idea #2:** I can define and reason about angles, lines, planes and angle measures.
 - *Essential Question #1: How do I construct a copy of an angle, an angle bisector, parallel lines, and perpendicular lines?*

- *Essential Question #2: How do I identify and use angle bisectors to solve problems?*
 - *Essential Question #3: How do I identify and use special angle pairs?*
 - **2nd Quarter**
 - **Unit III Title: Tools for Geometry Part II (G.CO.9)**
 - **Big Idea #1:** I can use the tools of Geometry to reason and do basic geometric proofs involving lines and angles.
 - *Essential Question #1: How do I solve problems and write proofs involving segment addition and congruence?*
 - *Essential Question #2: How do I solve problems and write proofs involving the angle addition postulate and other special angle pairs?*
 - *Essential Question #3: How do I write proofs involving parallel lines?*
 - **Big Idea #2:** I can calculate slope and use it to identify geometric relationships. (G. GPE.4-6)
 - *Essential Question #1: How do I calculate the slope of a line and determine whether two lines are parallel, perpendicular, or neither?*
 - *Essential Question #2: How do I write the equations of a parallel and perpendicular lines?*
 - **Unit IV Title: Transformations (G.CO. 2-G.CO.7 , G.SRT. 1- 2, G.GMD.5-6, and G.MG.1 and 3)**
 - **Big Idea #1:** I can use coordinates and algebra to show understanding of rigid motions.
 - *Essential Question #1: How do I identify, represent, and define the congruence transformations?*
 - *Essential Question #2: How do I identify, represent, and define similarity transformations?*
 - *Essential Question #3: How do I identify line and rotational symmetries in two-dimensional figures?*
 - **Big Idea #2:** I can use coordinates and algebra to show understanding of a composition of transformations.
 - *Essential Question #1: How do I identify, represent, and define a composition of transformations in a coordinate plane?*
 - **Unit V Title: Triangle Basics (G.CO. 8 and 10)**
 - **Big Idea #1:** I can understand and apply properties of triangles to determine congruence.
 - *Essential Question #1: How do I solve problems by applying the Triangle Angle-Sum Theorem and the Exterior Angle Theorem?*

- *Essential Question #2: How do I use the definition of congruence to write a congruence statement for polygons?*
- *Essential Question #3: How do I use the SSS, SAS, ASA, and AAS postulates to test for triangle congruence?*
- *Essential Question #4: How do I use CPCTC to show parts of a triangle are congruent?*
- *Essential Question #5: How do I solve problems and write proofs using the properties of isosceles and equilateral triangles?*
- **Big Idea #2:** I can identify and prove relationships in triangles.
 - *Essential Question #1: How do I identify and use perpendicular/angle bisectors in triangles?*
 - *Essential Question #2: How do I identify and use medians and altitudes in triangles?*
 - *Essential Question #3: How do I recognize and apply properties of inequalities to the relationships between angles and the sides of a triangle?*
 - *Essential Question #4: How do I use the Triangle Inequality Theorem to identify possible triangles and to prove triangle relationships?*
- **MID-TERM EXAM**
- **3rd Quarter**
 - **Unit VI Title: Similarity, Right Triangles, and Trigonometry (G.SRT .3-8 and G.GMD.5-6)**
 - **Big Idea #1:** I can use ratios to determine similarity and solve problems involving similar figures.
 - *Essential Question #1: How do I use proportions to identify similar polygons?*
 - *Essential Question #2: How do I use the AA, SSS, and SAS similarity theorems to prove two triangles are similar?*
 - *Essential Question #3: How do I use proportional parts within triangles and parallel lines to solve problems?*
 - *Essential Question #4: How do I use proportional relationships of corresponding segments of similar triangles and the Triangle Angle Bisector theorem to solve problems?*

- *Essential Question #5: How do I find the geometric mean between two numbers and use it to solve problems involving the pieces of a right triangle?*
 - **Big Idea #2: I can identify, write, and use the basic trigonometric ratios to solve right triangles.**
 - *Essential Question #1: How do I set up the 3 basic trigonometric ratios?*
 - *Essential Question #2: How do I identify cofunctions and their relationship to one another?*
 - *Essential Question #3: How do I convert angle measure between radians and degrees?*
 - *Essential Question #3: How do I solve triangles using trigonometric ratios?*
- **Unit VII Title: Circles**
 - **Big Idea #2: I can understand and apply theorems about circles. (G.C.1-5, GPE.1, and G.GMD.1)**
 - *Essential Question #1: How do I identify parts of a circle and find circumference and area to solve problems?*
 - *Essential Question #2: How do I identify and find the measures of central angles, major arcs, minor arcs, and semicircles?*
 - *Essential Question #3: How do I find arc length and area of a sector?*
 - *Essential Question #4: How do I use the relationships between arcs, chords and diameters to solve for parts of circles?*
 - *Essential Question #5: How do I find the measure of inscribed angles, and how is this used to find angles of inscribed polygons? (Prove and apply the property that opposite angles are supplementary for a quadrilateral inscribed in a circle. is a Plus Standard)*
 - *Essential Question #6: How do I use the properties of tangents and secants of a circle to solve problems?*
 - *Essential Question #8: How do I write the equation of a circle and graph the circle on a coordinate plane?*
- **4th Quarter**
 - **Unit VIII Title: Quadrilaterals**
 - **Big Idea #1: I can understand and apply properties of quadrilaterals.**
 - *Essential Question #1: How do I find and use the sum of measures of the interior and exterior angles of a polygon to solve problems?*

- *Essential Question #2: How do I solve problems and write proofs that apply the properties of the sides, angles, and diagonals of a parallelogram?*
- *Essential Question #3: How do I determine if a quadrilateral is a parallelogram?*
- *Essential Question #4: How do I determine if a quadrilateral is a rectangle, rhombus, square, trapezoid, or a kite and apply their properties to solve problems?*
- **Unit IX Title: Surface Area and Volume (G.GMD. 1, 3, and 4)**
 - **Big Idea #1:** I can show understanding of measurements in three dimensions and apply it to model and describe real world situations.
 - *Essential Question #1: How do I determine what three-dimensional objects are generated by rotations of two-dimensional objects?*
 - *Essential Question #2: How do I determine the shapes of two-dimensional cross-sections of three-dimensional objects?*
 - *Essential Question #3: How do I find lateral area and surface area of prisms, cylinders, pyramids, and cones?*
 - *Essential Question #4: How do I find volume of prisms, cylinders, pyramids, and cones?*
 - *Essential Question #5: How do I find the surface area and volume of spheres?*
- **END OF COURSE EXAM**

Course Materials:

Google Chromebook

1" 3-ring Binder

Loose leaf paper

Pencils

Highlighter or Colored Pencils

Recommended: Compass, Protractor, and Straightedge

- We have some that can be used in the classroom, but may not be checked out for homework. Students will need their own for homework, or they will have to schedule a time with the teacher to come in and finish the work.
- Students may be more comfortable and successful with their own, as they will know how they work and feel.

Recommended calculator: TI-84 Plus C silver edition

- This calculator can be kept at home for homework.
- We have classroom sets of these calculators so one is not necessary, but these classroom calculators cannot be taken out of the classroom.

Textbook: A copy may be checked out from teacher if desired, otherwise see below for the online textbook (McGraw Hill Geometry/ Connect Ed)

Electronic Resources:

- Google Classroom
- Google Sites
- Connect Ed <https://connected.mcgraw-hill.com/connected/login.do>
- GeoGebra <https://www.geogebra.org/>
- Edulastic <https://www.edulastic.com>

Course Expectations:

This course will require dedication. What you put into the class is exactly what you will get out of it. This Geometry course is a required class for graduation and is on your high school transcript, which means it will affect your high school GPA and ability to graduate. Grades are earned in this classroom and I am there to help you earn the best grade possible. This classroom is a partnership and will only work if we all work together. I am always available for extra help after school or through email. We will move at a quick pace through our syllabus so it is vital that you keep up with notes and assignments. I am looking forward to this school year and getting to know all of you!

Class Rules:

- 1.Be punctual.
- 2.Be prepared for class.
- 3.Be respectful towards teachers/staff, class members, school property, etc.
- 4.Be honest.
- 5.Be observant of all class, school, and district rules and policies.
- 6.Be positive.

Procedures:

- 1.Students will write and perform Bell ringer, write the essential question(s), and get materials ready the first 3 minutes of class.
- 2.Students will request permission from the teacher, get their agenda signed, and sign out on the back of the door to leave the classroom for any reason.
- 3.Students will turn in work at the appropriate time and place.
- 4.Students will clean up after themselves as well as their group members.
- 5.Students will remain seated in their assigned seat unless otherwise given permission.
- 6.Students are responsible for getting their make-up work after an absence.
- 7.Students are responsible for scheduling make-up tests and quizzes with the teacher.

Grading:

Unit Exams	50%
Assessments (Including: Quizzes, Essays, Labs, and Projects)	30%
Class work/Homework	20%

- Each nine week's grade comprises 20% of a student's final grade.
- The Mid-Term Exam and End of Course Exam each comprise 10% of a student's final grade.

Grading Scale:

The grading scale for Chillicothe High School can be found in the student handbook or online at

<http://www.chillicothe.k12.oh.us/1/Content2/studenthandbook>.

Late Work: Late work will be subject to the Board-adopted policy on assignments that are submitted late (to be reviewed in class).

- Regardless of the absence type (excused or unexcused), students will be expected to make up work and be held accountable for learning all material they missed.
- Any student who is absent from school (excused or unexcused) will have one (1) additional day for every day they missed, to make up his/her work for full credit (100%).
- Any student who exceeds the allotted time to turn in an assignment for full credit may still turn in late work for partial credit.
 - Any student who turns in work up to 1 week late must at least be given the opportunity to earn 75% on that assignment.
 - Any student who turns in work between 1 and 2 weeks late must at least be given the opportunity to earn 60% on that assignment.
- The end of the 9 weeks is the cut off point for teachers to accept late work from students for full or partial credit, unless the teacher decides to give the student an incomplete for the 9 weeks due to extenuating circumstances.

Performance Based Section: Writing**Assignments/Exams/Presentations/Technology**

One or more of the End of Unit Exams may be Performance Based. According to the Ohio Department of Education, "Performance Based Assessments (PBA) provides authentic ways for students to demonstrate and apply their understanding of the content and skills within the standards. The performance based assessments will provide formative and summative information to inform instructional decision-making and help students move forward on their trajectory of learning." Some examples of Performance Based Assessments include but are not limited to portfolios, experiments, group projects, demonstrations, essays, and presentations.

CHS Geometry Course Syllabus

After you have reviewed the preceding packet of information with your parent(s) or guardian(s), please sign this sheet and return it to me so that I can verify you understand what I expect out of each and every one of my students.

Student Name (please print):

Student Signature:

Parent/Guardian Name (please print):

Parent/Guardian Signature:

Date:
