

Geometry: Concepts & Connections

School Year: 2025-2026

Course Description: In Geometry: Concepts & Connections, instructional time should regularly incorporate the 8 Mathematical Practices, the Framework for Statistical Reasoning, and the Mathematical Modeling Framework through four big ideas of content: (1) numerical reasoning, (2) functional & graphical reasoning, (3) patterning and algebraic reasoning, and (4) geometric and spatial reasoning. This course is designed as the second course in a three-course series. Students will apply their algebraic and geometric reasoning skills to make sense of problems involving geometry, trigonometry, algebra, probability, and statistics. This course enhances students' geometric, algebraic, graphical, and probabilistic reasoning skills. Students will apply their algebraic and geometric reasoning skills to make sense of problems involving geometry, trigonometry, algebra, probability, and statistics. Students will continue to enhance their analytical geometry and reasoning skills when analyzing and applying a deep understanding of polynomial expressions, proofs, constructions, rigid motions and transformations, similarity, congruence, circles, right triangle trigonometry, geometric measurement, and conditional probability.

Prerequisite: Algebra: Concepts & Connections.

Instructional Philosophy: The Geometry: Concepts & Connections curriculum is both extensive and comprehensive. Time is a crucial commodity and it must be spent judiciously. Students are expected to stay focused on learning the standards and achieving proficiency. "Way Back" quizzes will be assigned regularly throughout the year to help students with retention of the standards taught and achieving proficiency. Students will complete benchmark tests throughout the year. The data from these tests and others will allow me to differentiate for students. If needed, students will participate in remediation before school, after school, during ELT/PRIDE period, or during Saturday school. My expectation is that every student will show mathematical growth and gain crucial mathematical knowledge needed to be successful in high school and college or technical mathematics.

Course Goals:

Upon completion of the course, students will be able to:

- Perform operations with polynomials within a geometric framework.
- Define translations, rotations, and reflections and use these to describe symmetries and congruence.
- Prove theorems and solve geometric problems involving lines and angles .
- Describe dilations in terms of center and scale factor.
- Establish the criterion for triangles to be similar.
- Examine side ratios of similar triangles.
- Use trigonometric relationships to solve geometric problems.
- Explore the concept of a radian measure and special right triangles.
- Examine and apply theorems involving circles
- Solve realistic problems involving volume.
- Solve problems involving the probability of compound events to make informed decisions.
- Use a two-way frequency table to calculate probabilities, to model categorical data, and to explain real-life phenomena.

Grading Scale:

A: 90 & above: Outstanding quality of work, on time, almost all problems worked out correctly

B: 80-89: Above average quality, on time, some mistakes in worked problems

C: 70-79: Average quality, on time, frequent mistakes in worked problems but concepts generally understood

Course Assessment:

1st Semester Grade = Semester Average x 80% + Final Exam x 20%

2nd Semester Grade = Semester Average x 80% + Final Exam x 20%

Semester Average = (1st 9 weeks + 2nd 9 weeks)/2

1st 9 weeks and 2nd 9 weeks = Test x 50% + Daily x 50%

(The exam exemption policy found in the LCHS handbook will be utilized.)

Supplies:

- 2 inch, 3-ring binder - This binder should contain all materials at all times.
- Notebook paper and pencils
- Calculator - scientific calculator TI-36X Pro (recommended)

Homework: Homework may be assigned as necessary. Homework will include but not be limited to problems from the unit, viewing teacher assigned videos, and completing online assignments. Homework is assigned to give students adequate opportunity to practice the application of new skills, integrate new skills with previously learned skills, and prepare for a new topic. There will be frequent opportunities in class for students to get any questions regarding homework cleared up; this assumes students are keeping up with the homework. All work must be shown on assignments. Homework will be graded upon completion.

Make up, redo, extra credit, and extra help:

- The school's make up policy for absences (found in the student handbook) will be followed.
- Students needing extra help can talk with the teacher and help will be provided at an agreed upon time, usually just before, just after school, or during ELT/PRIDE period.
- **Students will not be allowed retake opportunities due to a lack of participation and/or inappropriate classroom behavior.**

Parent/Guardian and Teacher Communication:

- Any parent/guardian wishing to speak with the teacher may email or call the office at 22-903-2260.
- Parent Square: Parent Square is an application that will be used to send notifications of upcoming assignments and tests to parents. Invitations to join Parent Square have been sent to the guardian email in IC.

Recording Consent

Recording a meeting without the consent of all participants may be illegal and actionable. You should obtain consent to record a meeting from all participants, including external guests and guests who join late.