Geometry AB

A-G Subject Area Fulfillment: Meets two semesters of the (C) Mathematics graduation requirement.

Course Overview:

Geometry I A/B is a highly concentrated and accelerated class and is not meant for students seeking either a preview or a review course in geometry. The course is normally taken during the entire second year in the basic sequence of college preparatory mathematics. Only the most capable mathematics students are advised to attempt this course in the five-week summer academic program. Geometry I A/B offers the study of geometry as a mathematical system that develops powers of spatial visualization, and stresses inductive and deductive reasoning as methods of problem solving.

Course Goals and Objectives

The course will cover five units
Unit 1: Proof, Parallel and Perpendicular Lines
Unit 2: Transformations, Triangles, and Quadrilaterals
Unit 3: Similarity and Trigonometry
Unit 4: Circles, Coordinates, and Constructions
Unit 5: Extending Two Dimensions to Three Dimensions

This summer course is meant to provide a low-pressure environment where individual attention by the teacher and personal reflection by the student is highly promoted. The volume of content to be learned will be intense and daunting (a full year’s topics in five weeks). It is therefore the student’s responsibility to ask “well thought-out” questions, complete assignments, and seek tutoring, if need be.

Attendance is mandatory for learning to take place. Please be in class, and don’t get behind. Please give yourself extra time to get here in the mornings; being tardy is a distraction to the class’s attention.

Common Core Standards Covered
Geometry Overview Detailed CCSS from www.cde.ca.gov
Week 1

Day 1 – Unit 1: Proof, Parallel and Perpendicular Lines
Salutations and first day chores
Diagnostic Test
Getting Ready – Review (page 2)
Basic Geometric Figures (Lesson 1 – 1)
More Geometric Figures (Lesson 1 – 2)

Day 2
Review Homework
Inductive Reasoning (Lesson 2 – 1)
Deductive Reasoning (Lesson 2 – 2)
Geometric Definitions and Two-Column Proofs (Lesson 3 - 1)
Conditional Statements (Lesson 3 - 2)
Converse, Inverse, and Contrapositive (Lesson 3 - 3)

Day 3
Review Homework
Embedded Assessment 1 – page 37
Segments and Midpoints (Lesson 4 – 1)
Angles and Angle Bisectors (Lesson 4 – 2)

Day 4
Review Homework
Distance on the Coordinate Plane (Lesson 5 – 1)
Midpoint on the Coordinate Plane (Lesson 5 – 2)
Justifying Statements (Lesson 6 – 1)
Two-Column Geometric Proofs (Lesson 6 – 2)

Day 5
Review Homework
Parallel Lines and Angle Relationships (Lesson 7 – 1)
Proving Lines are Parallel (Lesson 7 – 2)
Perpendicular Lines (Lesson 7 – 3)
Slopes of Parallel and Perpendicular Lines (Lesson 8 – 1)
Writing Equations (Lesson 8 – 2)
**Week 2**

**Day 6 - Unit 2: Transformations, Triangles, and Quadrilaterals**
Review Homework
Embedded Assessment page 99
Transformations (Lesson 9 – 1)
Translations (Lesson 9 – 2)
Reflections (Lesson 9 – 3)
Rotations (Lesson 9 – 4)

**Day 7**
Review Homework
Composition of Transformations (Lesson 10 – 1)
Congruence (Lesson 10 – 2)
Congruent Triangles (Lesson 11 – 1)
Congruence Criteria (Lesson 11 – 2)
Proving and Applying the Congruence Criteria (Lesson 11 – 3)
Extending the Congruence Criteria (Lesson 11 – 4)

**Day 8**
Review Homework
Flowchart Proofs (Lesson 12 – 1)
Three Types of Proofs (Lesson 12 – 2)
Angle Relationships in Triangles (Lesson 13 – 1)
Isosceles Triangles (Lesson 13 – 2)

**Day 9**
Review Homework
Embedded Assessment page 179
Altitudes of a Triangle (Lesson 14 – 1)
Medians of a Triangle (Lesson 14 – 2)
Perpendicular Bisectors and Angle Bisectors of a Triangle (Lesson 14 – 3)
Kites and Triangle Midsegments (Lesson 15 – 1)
Trapezoids (Lesson 15 – 2)

**Day 10**
Review Homework
Embedded Assessment page 203
Parallelograms (Lesson 15 – 3)
Rectangles, Rhombuses, and Squares (Lesson 15 – 4)
Proving a Quadrilateral is a Parallelogram (Lesson 16 – 1)
Proving a Quadrilateral is a Rectangle (Lesson 16 – 2)
Proving a Quadrilateral is a Rhombus (Lesson 16 – 3)
Proving a Quadrilateral is a Square (Lesson 16 – 4)
Week 3

Day 11 – Unit 3: Similarity and Trigonometry
Review Homework
Embedded Assessment page 237
Dilations (Lesson 17 – 1)
Similarity Transformations (Lesson 17 – 2)
Properties of Similar Figures (Lesson 17 – 3)
Similarity Criteria (Lesson 18 – 1)
Using Similarity Criteria (Lesson 18 – 2)
Triangle Proportionality Theorem (Lesson 18 – 3)

Day 12
Review Homework
Embedded Assessment page 273
Right Triangle Altitude Theorem (Lesson 19 – 1)
Geometric Mean (Lesson 19 – 2)
Pythagorean Theorem (Lesson 20 – 1)
Converse of Pythagorean Theorem (Lesson 20 – 2)

Day 13
Review Homework
45-45-90 Triangles (Lesson 21 – 1)
30-60-90 Triangles (Lesson 21 – 2)
Similar Right Triangles (Lesson 22 – 1)
Trigonometric Ratios (Lesson 22 – 2)
Using Trigonometric Ratios (Lesson 22 – 3)

Day 14
Review Homework
Embedded Assessment page 301
Solving Right Triangles (Lesson 22 – 4)
Law of Sines (Lesson 23 – 1)
The Ambiguous Case (Lesson 23 – 2)
Law of Cosines (Lesson 23 – 3)
Solving Triangles (Lesson 23 – 4)

Day 15 – Unit 4: Circles, Coordinates, and Constructions
Review Homework
Embedded Assessment  page 331
Circle Basics (Lesson 24 – 1)
Theorems About Chords (Lesson 24 – 2)
Tangent Segments (Lesson 24 – 3)
Arcs and Central Angles (Lesson 25 – 1)
Inscribed Angles (Lesson 25 – 2)
Week 4

Day 16
Review Homework
Angles Formed by Chords (Lesson 25 – 3)
Angles Formed by Tangents and Secants (Lesson 25 – 4)
Embedded Assessment page 371
Proving the Midpoint Formula (Lesson 26 – 1)
Proofs About Slope (Lesson 26 – 2)

Day 17
Review Homework
Proving Concurrency of Medians (Lesson 26 – 3)
Points Along a Line Segment (Lesson 26 – 4)
Circles on the Coordinate Plane (Lesson 27 – 1)
Completing the Square to Find Center and Radius of Circle (Lesson 27 – 2)
Parabolas on the Coordinate Plane (Lesson 28 – 1)

Day 18
Review Homework
Parabolas With Vertex (h, k) (Lesson 28 – 2)
Constructions With Segments and Angles (Lesson 29 – 1)
Constructions With Parallel and Perpendicular Lines (Lesson 29 – 2)
Constructions With Circles (Lesson 29 – 3)

Day 19 – Unit 5: Extending Two Dimensions to Three Dimensions
Review Homework
Embedded Assessment page 429
Areas of Rectangles and Parallelograms (Lesson 30 – 1)
Areas of Triangles (Lesson 30 – 2)
Areas of Rhombuses and Trapezoids (Lesson 30 – 3)

Day 20
Review Homework
Sum of the Measures of the Interior Angles of a Polygon (Lesson 31 – 1)
Regular Polygons and Exterior Angles (Lesson 31 – 2)
Area and Perimeter of Regular Polygons (Lesson 31 – 3)
Circumference and Area of a Circle (Lesson 32 – 1)
Sectors and Arcs (Lesson 32 – 2)
Circles and Similarity (Lesson 32 – 3)
**Week 5**

**Day 21**
Review Homework
Embedded Assessment page 477
Prisms and Pyramids (Lesson 33 – 1)
Cylinders and Cones (Lesson 33 – 2)
Spheres and Solids of Rotation (Lesson 33 – 3)
Surface Areas of Prisms and Cylinders (Lesson 34 – 1)
Volume of Prisms and Cylinders (Lesson 34 – 2)

**Day 22**
Review Homework
Surface Area of Pyramids and Cones (Lesson 35 – 1)
Volume of Pyramids and Cones (Lesson 35 – 2)
Density (Lesson 35 – 3)
Surface Area of Spheres (Lesson 36 – 1)
Volume of Spheres (Lesson 36 – 2)

**Day 23**
Review Homework
Cubes and Spheres (Lesson 37 – 1)
Pyramids and Cylinders (Lesson 37 – 2)
Review for Final

**Day 24**
Review Homework
Final Review Questions
Final Exam
Final Exam Questions
Diagnostic Test
Standards of Practice
MP1. Make sense of problems and persevere in solving them
MP2. Reason abstractly and quantitatively.
MP3. Construct viable arguments and critique the reasoning of others
MP5. Use appropriate tools strategically.
MP6. Attend to precision.
MP7. Look for and make use of structure.
MP8. Look for and express regularity in repeated reasoning.

Course Materials:
Textbook: Springboard Geometry

Textbook will be purchased first day of class. Students will keep textbook and will be able to write and take notes in it.

Each student is to have the following materials daily:

1. Three-ring binder with appropriate pages from text inserted.
2. 3-hole punched lined, college-rule paper.
3. Graph paper
4. Stationary, including pencils, erasers, highlighters, etc.
4. Multi-colored pens (we will use multiple colors to distinguish parts of figures, so at least 4 different color pens are preferred)
5. Graphing calculator (Preferably the TI-84. No CAS-enabled calculators [TI-89, TI-Nspire])
6. Compass and Protractor

Course Grading

Homework, Embedded Assessments and Tests

- **Homework** is assigned daily and is due the following school day. Each assignment is worth 10 points.
- **Embedded Assessments** – After each section (as outlined in schedule) an Embedded Assessment will be given. Each assessment will be worth 25 points.
- A **Final** will be given after each 2 ½ week session. It will only cover the topics in that session and will be worth 100 points each.

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<tr>
<td>Homework</td>
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<td>Embedded Assessments</td>
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Academic Integrity

**Plagiarism:**

Plagiarism: “1. the unauthorized use or close imitation of the language and thoughts of another author and the representation of them as one's own original work.”


Access to technology makes it easier to copy the work of others. Students will learn what constitutes plagiarism and how to steer clear of it. **As a rule, if there are three words in a row that someone else can claim, cite it.** Plagiarism is stealing and cheating and will not be tolerated. Plagiarism is against the law.

The first time a student is caught plagiarizing, there will be a teacher/student conference, a phone call home, no credit given for the assignment, and notification given to the SAEP office.

Copying from a fellow classmate is also unacceptable on homework assignments and individual assessments. The consequences are the same as above.

**Teacherease.com:**

Parents and students can access grades and attendance through a web-based grade program at teacherease.com. By the end of the first week, parents will be e-mailed the password to access the program. If you do not receive your password via e-mail, please contact the office staff at saep@csun.edu and request the password to be re-sent. It is beneficial for you to refer often to the website to check your child's progress and attendance in class. If you have any questions, please feel free to e-mail me.

**Classroom Behavior:**

The student is expected to demonstrate mature, polite behavior and extend courtesy to everyone at all times:

1. Actively participate, and respectful verbal and nonverbal interaction with all opinions must be shown at all times.
2. Since differing views will be expressed, the teacher and the student(s) will mutually maintain a safe environment for courteous dialogue.
3. Respect is to be shown for all CSUN property.
4. No food or beverages will be permitted in the classroom. Snacks must be eaten outside between the designated breaks.
5. Warnings for behavior / discipline problems will be given once. Any further problems will result in a phone call to the parent(s) or guardian(s) and possible dismissal from the program.
SAEP Electronics Policy

**Cell phones, music players and headphones are not permitted to be used during class hours.**

- Please put your cell phone on silent (NOT vibrate).
- No texting is allowed during class.

You will be given one verbal warning if the above is not followed. Should a second warning be necessary, your cell phone, music player and/or headphones will be confiscated and held by the teacher until after class. If a third time occurs, your cell phone, music player and/or headphones will be confiscated and held in the SAEP office and MUST BE PICKED UP BY A PARENT.
Geometry AB

After reading through the syllabus, please sign and date and have your student return it to class. The signature constitutes your commitment to the class as we partner to make the next five weeks a life-long educational experience for your student.

**Student/Parent Agreement:**
Please bring this signed and dated *Geometry AB* syllabus agreement to class tomorrow.

If you do not understand any portion of this syllabus, or if you have any questions regarding this class, please do not hesitate to email the teacher.

We have read and understand the contents of this syllabus.

Student name ______________________________________________________

Student signature __________________________________________________

Date __________________

Parent/Guardian name ______________________________________________

Parent/Guardian signature ____________________________________________

Date ________________

Phone __________________________

E-mail __________________________