



**HIGH SCHOOL COURSE OUTLINE**

<b>Department</b>	Mathematics			<b>Course Title</b>	Geometry 1-2 SDAIE/PLS		
<b>Course Code</b>	3032	<b>Grade Level</b>	9-12	<b>Course Length</b>	2 semesters	<b>Credits/Semester</b>	5
<b>Required for Graduation</b>	No	<b>Meets H.S. Grad Requirement</b>			Yes	<b>Elective Credit</b>	
<b>Prerequisites</b>	A grade of "C" or better in Pre-Algebra, ELD English 0, 1 & 2						
<b>Articulated with LBCC</b>	No			<b>Articulated with CSULB</b>	No		
<b>Meets UC "a-g" Requirement</b>	No			<b>Meets NCAA Requirement</b>	No		
<b>Teacher Certification</b>	BCLAD, BCC or CLAD, LDS, SB 1969 or SB 395 and a Bilingual Aide						

**COURSE DESCRIPTION:**

Geometry SDAIE/PLS is designed for English Language Learners who are at the Beginning and Early Intermediate levels of oral, reading and writing in English. English Language Learners in this SDAIE course cover the same content and utilize the same basic textbook as their Fluent English Speaker counterparts. In addition, primary language materials will be provided, when available, to facilitate the preview and review of essential content. The course varies in the pacing, instructional methodology and supplemental materials used which are designed to provide depth vs. breadth of the content standards, more comprehensible input, primary language support, and literacy development through the content area.

The course consists of a study of lines, planes, space, angles, curves, figures, and transformations. Basic ideas are introduced through concepts of sets of points with extensions into three dimensions. Coordinate geometry is formalized.

**GOALS:** (Student needs the course is intended to meet)

Students recognize and apply the basic terms and formulas of geometry as well as develop both formal and informal proofs.

**PERFORMANCE OBJECTIVES:**

Students will:

- Develop ability to reason, both inductively and deductively.
- Develop ability to solve problems.
- Develop an understanding of plane and spatial relationships.
- Gain skill in arithmetic and algebra with facts concerning geometric figures.
- Develop an understanding of the relationship between algebra and geometry.

## Academic Literacy in SDAIE Content-Area Classes for ELLs at Levels 0, 1 & 2

The ELD Standards of reading, writing, listening and speaking describe the linguistic pathway that ELLs take to achieve academic literacy in English. SDAIE content area classes play an important role in developing and strengthening students' progress towards this goal. Students should be encouraged to expand their English skills, even though grammatical and vocabulary approximations will occur during this process.

When content-area information and materials have been made comprehensible through instruction in the SDAIE class, ELLs at each level will progress through the following phases of developing academic literacy in English. The students' degrees of literacy in their primary language will significantly affect the pace that students move through these levels.

### ELD Level 0

Upon entering ELD Level 0, students have little or no academic English proficiency and have **little or no literacy skills in their first language**. ELLs progressing through this level will:

- Participate in modified group/class projects, discussions and oral presentations with non-verbal responses (e.g., gestures, drawings, graphic organizers) and/or single words or phrases with assistance (e.g., word walls, language structure walls)
- Begin to participate orally in some content area reading strategies (especially pre-reading, KWL, and anticipation guides presented orally), with single words or phrases to analyze concepts from explicitly taught texts and other course reading materials
- Respond to Curriculum Embedded Assessment prompts (read to them and clarified for them) non-verbally (e.g., graphic organizers with drawings) and/or orally with single words or phrases
- Begin to use the English alphabet to write in teacher-guided learning logs, selected homework and interactive notebooks, and to organize and record expository information on pictures, lists, charts and tables using single words or phrases
- Understand the need for using modified test-taking strategies (using taught vocabulary) on the required district/state assessments, such as, End of Course Exams (with alternate presentation and response), and STAR.

### ELD Level 1

Upon entering ELD Level 1, students have little or no academic English proficiency and varying levels of academic literacy skills and concepts in their first language. ELLs progressing through this level will:

- Participate in group/class projects, discussions and presentations with non-verbal responses (e.g., gestures, drawings, graphic organizers, role-playing) and/or single words, phrases and simple sentences with assistance (e.g., using the academic participation cards).
- Participate orally in some content area reading strategies (especially pre-reading, KWL, academic participation cards, anticipation guides) with single words, phrases and/or simple sentences to analyze concepts from taught texts and other course reading materials.
- Respond to Curriculum Embedded Assessment prompts (read to them and clarified for them) nonverbally (e.g., graphic organizers with drawings) and/or orally with single words, phrases and simple sentences in an outline format.
- Use writing in a variety of ways such as, but not limited to, guided class note-taking, learning logs, interactive notebooks, representing information on pictures, lists, charts and tables using single words, phrases or simple sentences, and completing student handouts, selected homework, and modified class projects.

- Understand the need for using test-taking strategies (using taught vocabulary) on the required district/state assessments, such as, End of Course Exams (with alternate presentation and response), and STAR.

## ELD Level 2

Upon entering ELD Level 2, students have some academic English proficiency about topics that have been explicitly taught to them. ELLs progressing through this level will:

- Participate in group/class projects, discussions and presentations with simple sentences and many attempts at more complex sentences.
- Use content area reading strategies (especially pre-reading, KWL, academic participation cards, anticipation guides, Reciprocal Teaching and Question/Answer Relationships) to analyze concepts from taught texts and other course reading materials.
- Respond to Curriculum Embedded Assessment prompts (read to them and clarified for them) orally and with simple and some complex sentence structures in at least three paragraphs.
- Use writing in a variety of ways such as, but not limited to, class note-taking, learning logs, interactive notebooks, response logs, and completing student handouts, homework, and class projects.
- Understand the need for using test-taking strategies (using taught vocabulary) on the required district/state assessments, such as, End of Course Exams (with alternate presentation and response), and STAR.

## OUTLINE OF CONTENT AND RECOMMENDED TIME ALLOTMENT:

Content sequencing and time allocations are only suggestions and may be adjusted to suit school site curriculum plans and student needs.

Symbols used in this document:

- H** – Heath, Geometry textbook
- S** – Serra, Discovering Geometry textbook
- C** – Chicago, Geometry textbook
- ( )** - Indicates California State Framework Reference

## Fundamental Terms and Angles

Topics	Curriculum Objectives California State Standards	Adopted Textbook Correlation	Assessments <u>Geometry</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary	Time
Recognize and use the fundamental terms of geometry	Recognize the need for undefined terms such as “point, line, and plane” (1.0)	H 2.1, 2.4 S 2.1 C 1.1, 1.2, 1.6	pgs. 43, 45, 51	Axiom Point Line Plane Postulate Theorem Line segment Ray Collinear Midpoint	2 weeks
	Use definitions, postulates, and theorems (3.0)	H 2.2 S 2.3 C 1.7, 2.1, 2.4			

Topics	Curriculum Objectives California State Standards	Adopted Textbook Correlation	Assessments <u>Geometry</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary	Time
Apply properties of coplanar lines to geometric situations	Identify angle relationships involving the properties of parallel lines cut by a transversal (7.0)	H 3.5, 3.6 S 4.2, 12.7 C 3.6	pgs. 46 and 47	Transversal Parallel Intersecting Oblique Perpendicular Complement Supplement Angles: Corresponding Alt. Interior Alt. Exterior Consecutive	2 weeks
	Prove theorems and solve problems related to parallel lines	H 3 S 4 C 7.7			
Visualize, sketch, and construct plane and solid geometric figures	Identify figures in a plane and in space	H 2 S 2.8, 11.1 C 2.6	p. 61	Bisector Angle bisector Perpendic. Bis. Segment Bis.	2 weeks
	Use geometric figures to communicate ideas and develop proofs (2.0)	H 2.6 S 2.9 C 3.5, 5.6			
	Perform basic constructions with straightedge and compass (such as angle bisectors, perpendicular bisectors, and a line parallel to a given line) (16.0)	H 1.7, 4.7 S 3.1 – 3.4 C 3.8, 7.1			
Apply angle and side relationships in geometric figures	Compute the measure of an angle or sum of the angles of polygons (interior and exterior) (12.0)	H 6.2 S 6.1 C 3.1, 3.3, 5.7, 6.8, 7.9	p. 22	Polygon Regular Triangle Quadrilateral Pentagon Hexagon Heptagon Octagon Decagon Dodecagon	1 week

## Properties of Real Numbers

Topics	Curriculum Objectives California State Standards	Adopted Textbook Correlation	Assessments <u>Geometry</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary	Time
Apply properties of real numbers to geometry	Apply the equality and order properties of the real number system	H 2 S 15.1 C 3.4, 5.4	pgs. 23, 46, 52	Real number Integer Reflexive Transitive Symmetric	2 weeks
	Use the properties in calculations based on the measures of segments, angles, and ratios (13.0)	H 2.2 S 2.2, 4.1 C 10.4			

Topics	Curriculum Objectives California State Standards	Adopted Textbook Correlation	Assessments <u>Geometry</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary	Time
	Apply algebra skills to geometric problems	H throughout S 4.3, 10.3 C 3.3			

### Triangles, Congruence, and Similarity

Topics	Curriculum Objectives California State Standards	Adopted Textbook Correlation	Assessments <u>Geometry</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary	Time
Demonstrate knowledge and use of similar and congruent geometric figures	Prove theorems using congruency and similar theorems <b>(4.0)</b>	H 4 S 5, 12, 15 C 5.3, 7.2 – 7.5, 13.1, 13.2	pgs. 54, 55, 57, 58, 64, 65, 66, 67	Congruent Similar Proportion Corresp. Pts.  Equilateral Isosceles Scalene Acute Obtuse Right Equiangular	3.5 weeks
	Use congruent and similar figures to solve application problems <b>(5.0)</b>	H 4 S 5, 12, 15 C 4.8, 5.2, 12.5, 12.6, 13.2			
	Apply proportions in solutions of problems involving corresponding parts	H 4 S 5, 12, 15 C 12.4, 12.7, 13.3			
	Apply the concept of corresponding parts of triangles	H 4 S 5, 12, 15 C 5.1			
	Apply the triangle Inequality Theorem <b>(6.0)</b>	H 5.4 S 5.3 C 2.7			
Apply angle and side relationships in geometric figures	Recognize and use the side-angle inequality relationships in triangles	H 5.4 S 5.3 C 7.9	pgs. 21, 52	Inequality Converse Opposite Adjacent	1.5 weeks

### Coordinate Geometry, Logic, and Transformations

Topics	Curriculum Objectives California State Standards	Adopted Textbook Correlation	Assessments <u>Geometry</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary	Time
Demonstrate knowledge of various types of reasoning	Compare and apply inductive reasoning <b>(1.0)</b>	H 2.6 S 1 C 11.1, 11.2	pgs. 64, 67	Inductive Deductive Indirect Conclusion	2 weeks
	Use deductive reasoning to arrive at a conclusion <b>(2.0)</b>	H 2.6 S 14 C 2.2			
	Recognize and apply indirect reasoning	H 5.5 S 14.9 C 11.3			

Topics	Curriculum Objectives California State Standards	Adopted Textbook Correlation	Assessments <u>Geometry</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary	Time
	Develop direct and indirect proofs	H 5.5 S 14 C 5, 11.4			
Apply geometric concepts to coordinate geometry (in two or three dimensions)	Write the equation of a line, determine the slope of a line and the length of a line segment <b>(17.0)</b>	H 1.5, 2.3 S 4.3, 10.7 C 1.3, 11.6	pgs. 38, 46, 47, 61, 62	Coordinates Slope Std. Equation Spheres Hypothesis Conclusion Converse	3 weeks
	Determine the coordinates of the midpoint of a segment	H 1.4 S 4.3 C 11.8			
	Apply properties of parallel and perpendicular lines	H 3.2 S 4.4, 12.7 C 3.7			
	Recognize, graph, and write equations of circles and spheres	H 10.7 S 10.7 C 11.7			
	Incorporate coordinate information in proofs	H 5.3 S 16.6 C 11.5			
Demonstrate knowledge of transformational geometry including translations, reflections, rotations, and dilations		H 7 S 8 C 4.1 – 4.7, 12.1 – 12.3	pgs. 68, 69	Translation Transformations Reflection Rotation Dilation Isometric Scale factor Symmetry	1 weeks

## Geometric Figures

Topics	Curriculum Objectives California State Standards	Adopted Textbook Correlation	Assessments <u>Geometry</u> <u>Assessment</u> <u>Portfolio</u> <u>Workbook</u>	Key Vocabulary	Time
Classify geometric figures by their characteristics	Triangles (12.0)	H 4.1, 4.2 S 5.1 C 6.2	pgs. 23, 51	Equilateral Isosceles Scalene Acute Right Obtuse Equiangular Ext. angle Adjacent angle Diagonal Rhombus Kite Trapezoid Parallelogram Apothem Concave Convex	3 weeks
	Quadrilaterals	H 6.4 – 6.7 S 6 C 6.3			
	Other polygons	H 6.1, 6.2 S 2.5 C 6.7			

## Circles and Right Triangle Trigonometry

Topics	Curriculum Objectives California State Standards	Adopted Textbook Correlation	Assessments Geometry Assessment Portfolio Workbook	Key Vocabulary	Time
Apply the properties of circles and spheres in the solutions of problems	Relationships of chords, secants, tangents, and circle-related angles (21.0)	H 10 S 7 C 14.1, 14.4 – 14.7	pgs. 32 – 37, 73 – 76	Diameter Radius Chord Secant  Tangent Inscribed Circumscribed Circumference Central angle Inscribed Angle	3 weeks
	Inscribes and circumscribes polygons	H 10 S 7 C 14.2			
	Geometric constructions ( 16.0)	H 10 S 7 C 14.3			
Apply trigonometric concepts	Use the Pythagorean Theorem (14.0, 15.0)	H 9.2 S 10.2 C 8.6	pgs. 24 –31, 77 –79	Tangent Pythagorean Thm	3 weeks
	Apply theorems relating to properties based on similar triangles, including those formed in right triangles	H 8 S 12.3 C 14.1 – 14.7			
	Recognize and use angle and side relationships of equilateral triangles, isosceles right triangles and 30°-60°-90° right triangles	H 4.1, 9.4 S 10.4 C 13.5			
	Identify and use trigonometric ratios (sine, cosine, and tangent) (18.0, 19.0)	H 9 S 13 C 13.7			
	Solving problems using right triangle trig functions	H 9 S 13 C 13.7			

## Area, Perimeter, and Solids

Topics	Curriculum Objectives California State Standards	Adopted Textbook Correlation	Assessments Geometry Assessment Portfolio Workbook	Key Vocabulary	Time
Use formulas to solve geometric problems	Use perimeter and area formulas relating to triangles, quadrilaterals, circles, and other polygons (8.0, 9.0, 11.0)	H 11 S 9 C 8.2 – 8.8, 10.4, 10.6	pgs. 39, 83 – 88	Surface area Perimeter Prism Cone Cylinder Pyramid Sphere Volume Right prism Oblique prism	3 weeks
	Use surface area and volume formulas for cubes, prisms, cylinders, cones, pyramids, and spheres (10.0)	H 12 S 11 C 9.3, 10.3 – 10.8			

**METHODS:** A variety of instructional strategies will be utilized to accommodate all learning styles and to reinforce reading, writing, and mathematical skills while learning Geometry content. Methods of instruction include but are not limited to lectures, discussions, demonstrations, student presentations, computer programs, group and individual work, videos, manipulatives, projects, and explorations.

**Reading Strategies in Mathematics**

- Learning Logs
- Pre-teaching
- Vocabulary
- Pre-reading
- Text Structures
- Trail Markers
- Reciprocal Teaching
- Functional Text
- Anticipation Guide

**SDAIE Strategies for English Learners**

- Tapping/Building Prior Knowledge (Graphic Organizers, Schema)
- Grouping Strategies
- Multiple Intelligences
- Adapt the Text
- Interactive Learning (Manipulatives, Visuals)
- Acquisition Levels
- Language Sensitivity
- Lower the Affective Filter (including Processing Time)
- Home/School Connection (including Cultural Aspects)

**Differentiation for Advanced Learners**

- Curriculum Compacting
- Tiered Assignments
- Flexible Grouping
- Acceleration
- Depth and Complexity
- Independent Study

**Primary Language Support**

- Preview/review Grouping
- Parallel Texts
- Cognates

**MATERIALS USED IN TEACHING THE COURSE:** In addition to the basic text, a variety of instructional tools will be used to meet the needs of all students.

**Basic Text:** Geometry; An Integrated Approach; Larson, 1998; Heath/McDougal Littell  
Geometry UCSMP; Collins, 1998; Scott Foresman  
Discovering Geometry; An Inductive Approach; Serra, 1997; Key Curriculum Press

**Supplemental materials:**

Resources accompanying the basic text:

- Formal Assessment, Spanish Edition; Larson, 1998; Heath/McDougal Littell
- Reteaching Workbook, Spanish Edition; Larson, 1998; Heath/McDougal Littell
- Visual Aids (Usiskin)
- Teacher's Resource file (Usiskin) Contains some Spanish translation of text.
  
- Hands on activities and projects  
(Geometric Solids and Nets (ETA/Cuisenaire, Patty Paper, and Wikki Stix (The Wikki Stix Co. Omnivor, Inc.)
- Supplemental audio/visual content materials
- Computer resources available through software and the Internet (Geometer's Sketchpad by Key Curriculum Press)
- Posters and models

**EVALUATION:** Student achievement in this course will be measured using multiple assessment tools including but not limited to chapter tests, cumulative tests (final exam), quizzes, homework, classwork, notebooks, portfolios, projects, and open ended questions.

**GRADING POLICY:** A common grading policy ensures consistency between schools and classrooms across the district.

**Suggested Percent of Grade**

Chapter Tests	35% - 40%
Quizzes	25% - 30%
Cumulative Tests which Includes the district Final Exam and site common assessments	10% - 15%
Classwork	5% - 10%
Homework	10%
Notes/Projects	5%

**Suggested Grading Scale**

<b>A</b>	90% - 100%
<b>B</b>	80% - 89%
<b>C</b>	70% - 79%
<b>D</b>	60% - 69%
<b>F</b>	Below 60%

Submitted by: OCIPD

School: \_\_\_\_\_

Date: 10/02

Board Date 4/16/02