Curriculum Sample Template
Max. 8 Pages

Grade Level	High School	**Content Area**	Mathematics
Course Title (grades 9-12 Only)	Geometry		
Expected Prior Knowledge *The knowledge/skills mastered earlier in the year foundational to the mastery of the required Standard in the current sample.*	Students will have an understanding of the parts of a right triangle such as leg, hypotenuse, right angle, opposite angle, and adjacent angle.		
Alignment to Program of Instruction *Briefly outline methods of instruction found in this sequence of lessons that align to the Program of Instruction described in A.3.*	The school's program of instruction for mathematics combines an alignment with Hunter's Essential Elements of Instruction and the Socratic method as outlined and described by The Great Books program and Michael Strong's text *The Habit of Thought.* Instruction during this unit will include direct instruction of key points and examples, guided practice including practice problem sets and partner activities, independent practice, and daily formative assessments conducted at the end of each class period.		
Standard Number and Description *List the Number* and the full description for the Required Standard or Science Performance Objective listed in section A.6.*	G-SRT.6 Conceptual Category: Geometry Domain: Similarity, Right Triangles, and Trigonometry (G-SRT) Standard: #6 –Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.		
Materials/Resources Needed	One large (4'X8') whiteboard, one small (2'X2') whiteboard, one meter stick, one protractor, two whiteboard marker, and one eraser for every two students.		

**** Standard Number**: For English Language Arts (Reading and Writing), use Grade, Strand, Standard (e.g., 3.RI.2). For K-8 Math, use Grade, Domain, Standard (e.g., 6.EE.7). For HS Math, use Conceptual Category-Domain, Standard (e.g., A-REI.6). For Science, use Grade, Strand, Concept, PO (e.g., 4.1.3.1).*

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Lesson (add as needed)	**Instructional Strategies**	**Student Activities**
1	This is a 5 day lesson. Day 1 After discussing (reviewing) the basic vocabulary of triangles the teacher will pose a question: "Given any right triangle with fixed angles is there a relationship between the length of one of the legs and the hypotenuse?" Through drawing, careful measurement, and discussion the students will determine that there is apparently a fixed ratio between one of the legs (adjacent) and the hypotenuse with a given angle.	Do Now: Students will review the basic vocabulary of triangles. Guided Practice: Students (working in pairs) will draw a right triangle with given angles. They will then independently choose their leg length and calculate the ratio of the adjacent leg and the hypotenuse. All student pairs will report their findings on the big whiteboard. Independent Practice: Student pairs will change their adjacent length while keeping all angles constant. They will then recalculate the ratio. This should be repeated at least three times. Exit Ticket: Students will participate in a gallery walk and comment on other students' posters. Whiteboards should be saved for the next lesson.
2	Day 2 After discussing (reviewing) the previous day's activities, the teacher will pose a question: "Given any right triangle with fixed angles is there a relationship between the length of the opposite side (leg) and the hypotenuse?" Through drawing, careful measurement, and discussion the students will determine that there is apparently a fixed ratio between one of the legs (opposite) and the hypotenuse with a given angle. Flip a drawing and discuss how whether the orientation of the sides (triangle) will change the ratio of the two legs to the hypotenuse.	Do Now: Students will retrieve and review their previous day's whiteboards and findings. Guided Practice: Students (working in pairs) will reuse yesterday's right triangle with given angles. They will independently choose their leg length and calculate the ratio of the opposite leg and the hypotenuse. All student pairs will report their findings on the big whiteboard. Independent Practice: Student pairs will change their opposite length while keeping all angles constant. They will then recalculate the ratio. This should be repeated at least three times. **Summative Assessment #1**: Students will participate in a gallery

		walk and comment on other students' posters. Whiteboards should be saved for the next lesson.
3	Day 3 After discussing (reviewing) the previous days' activities, the teacher will pose a question: "Given any right triangle with fixed angles is there a relationship between the length of the opposite side and the adjacent side?" Through drawing, careful measurement, and discussion, the students will determine that there is apparently a fixed ratio between the two sides of a right triangle. Flip a drawing and discuss how whether calling a leg opposite or adjacent is relative or absolute.	Do Now: Students will retrieve and review their previous days' whiteboards and findings. Guided Practice: Students (working in pairs) will reuse their right triangle with the given angles. They will independently choose their leg lengths and calculate the ratio of the legs. All student pairs will report their findings on the big whiteboard. Independent Practice: Student pairs will change either leg length while keeping all angles constant. They will then recalculate the ratio. This should be repeated at least three times. **Summative Assessment #2**: Students will participate in a gallery walk and comment on other students' posters. Whiteboards should be saved for the next lesson.
4	Day 4 After discussing (reviewing) the previous days' activities, the teacher will ask for input in drawing a right-triangle on the big whiteboard. The teacher will then formally define six trigonometric terms: sine, cosine, tangent, secant, cosecant, and cotangent. Through drawing, careful measurement, and discussion the students will determine that the six trigonometric ratios.	Do Now: Students will retrieve and review their previous days' whiteboards and findings. Guided Practice: Students will utilize the drawing on the large whiteboard to calculate the six trigonometric ratios. Independent Practice: Students pairs will make their own right triangle and calculate (with details) the six trigonometric ratios. **Summative Assessment #3**: Students will participate in a board talk and comment on other students' posters.
5	Day 5	**Summative Assessment #4** (Unit Quiz)

Summative Assessment Items: *Attach here.* For each summative assessment item, include an answer key or scoring rubric describing how points are to be awarded.

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Summative Assessments #1, #2, and #3 represent activities that are approved and used by the top liberal arts academies in the Phoenix area. They are designed to be aligned with the philosophy of the school and fulfill the mission of the Socratic Method which requires the active engagement of students with each other even though they may be evaluated independently. Furthermore, this style of evaluation is cross-aligned with the evaluation system used in other classes at the school, particularly Humane Letters, in order to create a consistency across the entire curriculum.

Summative Assessments #1, #2, and #3: Each daily white board preparation and "Gallery Walk" / "Board Talk" will be evaluated according to the Socratic discussion rubric outlined below.

	1	2	3	4
White Board Preparation	Student contributes little to white board presentations and relies heavily on partner(s) to complete the work.	Student contributes somewhat to the white board preparation, but is unable to adequately explain the final results.	Student is actively involved in the white board preparation but struggles to provide an accurate explanation of the results.	Student actively contributes to the preparation of the white board and is able to very accurately explain its results.
Participation in Gallery Walk or Board Talk	Student rarely speaks and does not contribute meaningfully to the discussion.	Students speaks infrequently, but the quality of analysis is fairly good.	Students speaks moderately frequently and offers analysis of white boards that is helpful to peers.	Student speaks frequently and offers crucial insight/analysis that makes important connections among board presentations.
Peer Interaction	Student does not engage in discussion with peers.	Student seems more comfortable speaking directly to the teacher and not with peers.	Student generally speaks to peers, but occasionally looks to the teacher for affirmation.	Student speaks directly to peers and rarely to the teacher, except when necessary.
Civil Discourse	Student is generally disrespectful of peers.	Student is respectful but can be prone to showing momentary irritation, hostility/condescension.	Student is generally polite and respectful.	Student is exceptionally courteous and respectful even during debates and disagreements.

Total Points Possible: 16
Mastery: 14 points (≈85%)

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Summative Assessment #4: Unit Quiz

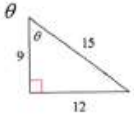
Summative Assessment

Name_____

G-SRT6

Find the value of the trig function indicated.

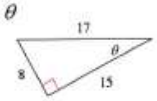
1) $\sin\theta$



A) $\frac{4}{5}$ B) $\frac{5}{3}$

C) $\frac{3}{5}$ D) $\frac{3}{4}$

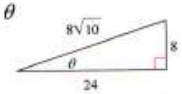
2) $\sin\theta$



A) $\frac{8}{15}$ B) $\frac{8}{17}$

C) $\frac{15}{17}$ D) $\frac{2\sqrt{5}}{5}$

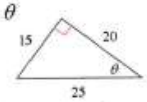
3) $\cos\theta$



A) $\frac{\sqrt{10}}{3}$ B) $\frac{3\sqrt{10}}{10}$

C) $\sqrt{10}$ D) $\frac{\sqrt{10}}{10}$

4) $\cos\theta$



A) $\frac{3}{5}$ B) $\frac{5}{4}$

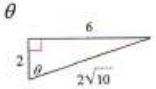
C) $\frac{3}{4}$ D) $\frac{4}{5}$

5) $\tan\theta$

A) $\sqrt{5}$ B) $\frac{1}{2}$

C) $\frac{\sqrt{5}}{2}$ D) 2

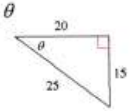
6) $\tan\theta$



A) $\frac{\sqrt{10}}{10}$ B) $\frac{1}{3}$

C) $\frac{3\sqrt{10}}{10}$ D) 3

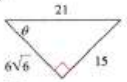
7) $\cot\theta$



A) $\frac{3}{5}$ B) $\frac{4}{3}$

C) $\frac{\sqrt{2}}{2}$ D) $\frac{5}{4}$

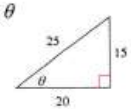
8) $\cot\theta$



A) $\frac{2\sqrt{6}}{7}$ B) $\frac{5}{7}$

C) $\frac{2\sqrt{6}}{5}$ D) $\frac{2\sqrt{13}}{13}$

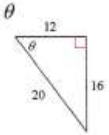
9) $\sec\theta$



A) $\frac{3}{4}$ B) $\frac{5}{4}$

C) $\frac{4}{5}$ D) $\frac{4}{3}$

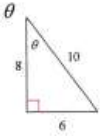
10) $\sec\theta$



A) $\frac{4}{5}$ B) $\frac{4}{3}$

C) $\frac{3}{4}$ D) $\frac{5}{3}$

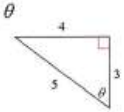
11) $\csc\theta$



A) $\frac{5}{4}$ B) $\frac{4}{3}$

C) $\frac{3}{4}$ D) $\frac{5}{3}$

12) $\csc\theta$



A) $\frac{3}{5}$ B) $\frac{4}{3}$

C) $\frac{4}{5}$ D) $\frac{5}{4}$

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Answers to G-SRT6

1) A	2) B	3) B	4) D
5) D	6) D	7) B	8) C
9) B	10) D	11) D	12) D

Two points will be awarded for each correct answer.
Total Points Possible: 24
Mastery: 20 points (≈85%)

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