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CONTEXT

- **School classification:** Private Christian
- **Class peculiarities:**
  - **Demographics:** 8th – 12 grade: **Majority**: African American, **Minority**: Chinese, Hispanic, Caribbean
  - **Reading level:** Moderate
  - **SES:** Middle Class
  - **Special needs:** IEP students
  - **Specific teacher or school requirements:** N/A

ASSESSMENT PLAN: Declare how you plan to begin, proceed with, and conclude the assessments for this lesson segment. So, your assessment plan could possess the following features:

(a) Rational Statement:

a. **Pre-assessment strategy**: This will me, as a teacher, to know what my students know, and what misconceptions they may have. This activity also shows me whether or not my students have been exposed to the subject matter or not and informs how I continue with the lesson. Along the way I can reference their answers where necessary.

b. **Formative Assessment**: By asking questions throughout the learning process, students are challenged to think of what they are doing, and make connections to new knowledge. Additionally, it provides students with a model of how to logically think through the content for future use and retrieval. By allowing them to think of how words can be broken down to determine their definition, this integrates what they have learnt in language arts with current mathematical knowledge and encourages them to use language skills in a math setting where necessary. Additionally, by allowing students to answer questions on the board, complete do-now questions, or exit slips, this allows me as a teacher to know how well my students are grasping information and how well they know how to utilize problem solving skills regarding the subject matter.

c. **Post Assessment**: By asking questions, students are prompted to think about their responses and rationally derive their answers. Completing assigned problems is also a good opportunity because they are able to put into practice the concepts they have learnt and this also allows for the teacher to clarify any misunderstandings.

(b) **Pre-assessment strategy:** I can begin my lesson by asking my students to write down, or explain what they know about a Unit Circle. It may be good to allow them to write their answers on individual pieces of paper and place their answers into a box. Then pick through the box and read the answers given; clarifying which ones are relevant and which ones are not.

(c) **Formative Assessment:** Students will be given a formative assessment throughout the learning process. They will have opportunities to decode vocabulary words related to the subject matter to develop definitions and based upon the developed definition, I will use a scaffolding approach to help them to use their understanding of the vocabulary to solve problems related to the subject matter.

For example, the learning segment is focused on the Unit Circle. We will break apart the words and Based upon the definition of Unit, students associate the term unit with the

number 1, and as a teacher, I will ask students, what do they think is equaled to 1 in the circle. We will explore their answers and derive that the radius in Unit Circle is equaled to 1. Other vocabulary such as coterminal Angles, reference Angles, Quadrantal Angles can be broken down in this manner.

Other methods for formatively assessing knowledge is by allowing students to come to the board to answer questions, exit tickets, do nows, and assigning class work.

(d) **Post-Assessment:** There are a number of options for assessing student progress.

a. Going back through the content taught and asking questions like, "What makes a Unit Circle Unique from every other circle?", "What is a coterminal angle?", "How would I find a positive coterminal angle?", etc.
b. Assign classwork and allow them to work independently
c. Quiz

PRE-INSTRUCTIONAL ASSESSMENT: **Administer pre-test to determine status of students' prior knowledge regarding the intended content to be taught. Collect and record scores.**

- Only 2 of the 15 students in my class had heard of a Unit Circle prior to the learning segment, but it was content that they had never formally covered in the class. Some of the answers for "What is a Unit Circle included: a circle with a unit, a unit circle, a circle with units, a circle with something equal to 1 unit, etc.

PLANNING: **Based on students' learning needs, as you have determined, plan a learning segment of 3-5 lessons. This ought to be extensive, providing the necessary practice of other features for mastery.**

- See Attachment

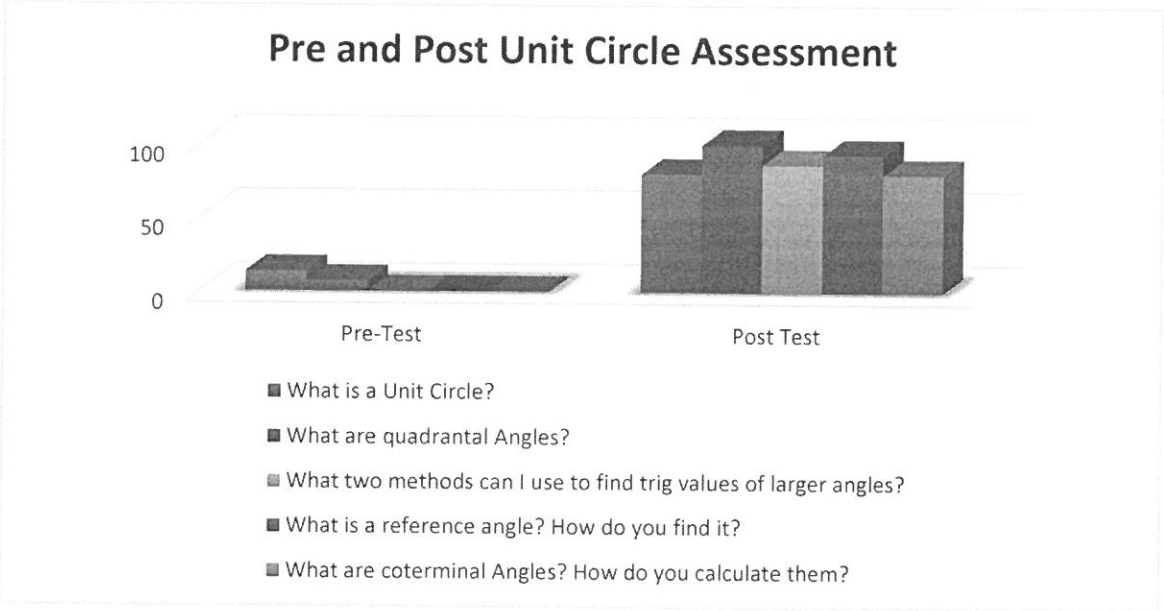
INSTRUCTION: **Content delivery method/s, formative assessment, and learning support**

- See attachment

POST-INSTRUCTIONAL ASSESSMENT: **Administer post-test (same test used for pre-test). Grade and record scores to be compared in same table as pre-test scores.**

Question	**What is a Unit Circle?**	**What are quadrantal Angles?**	**What two methods can I use to find trig values of larger angles?**	**What is a reference angle? How do you find it?**	**What are coterminal Angles? How do you calculate them?**
Pre-Test (% Pass)	$\frac{2}{15}$	$\frac{1}{15}$	$\frac{0}{15}$	$\frac{0}{15}$	$\frac{0}{15}$
Post Test (% Pass)	$\frac{12}{15}$	$\frac{15}{15}$	$\frac{13}{15}$	$\frac{15}{15}$	$\frac{12}{15}$

DATA ORGANIZATION & REPRESENTATION: **Display data in tabular form as well as graphically. A bar graph is appropriate, since it provides a visual comparison of pre-and post-test performances.**



ANALYSIS: **This final write-up should answer the following fundamental questions:**

(a) What evidence/s exist that learning has taken place?

a. According to the bar graph, no student passed the pre-test. This was expected because based on the pretest, most students had never heard of the Unit Circle prior to the learning segment. The few students that we exposed to the idea of the unit circle did not do any problem solving using the unit circle and therefore were not able to do well on the overall pre-test.

b. Throughout the learning segments and review sessions, students were able to answer questions that they previously were unable to respond to. They were also able to identify key vocabulary words and their definitions and apply the appropriate processes to solve problems. Students were also able to teach concepts to their peers when necessary.

(b) How have your students performed?

a. All students did very well during the learning segments and during the post test. Each session I began with a review of the previous content. This allowed for students who missed any lesson to be caught up on content and also reinforced content for students who were present in earlier lessons. Students took very thorough notes and this helped the content to stick more readily in their minds each session. Eventually students could answer questions and apply procedures without having to reference their notes.

(c) How have you performed? Is there anything you'd do differently next time?

a. As the instructor, I believe that I performed very well. During the learning segments there were challenges because of the way in which I asked certain questions and I had to rephrase the way in which I questioned students. Additionally, there were assignments that students had struggles with and so I had to alter the way in which the assignment would be done to facilitate student learning. For example, a few students had struggles with finding reference angles of negative angles and so I allowed students to answer the questions ignoring the negative signs.

(d) Based on sample of student's work, what feedback could help improve student achievement?

a. During the scheduled tutoring time throughout the school day, I allow student to come in and have a one-on-one lesson to clarify content that they may be struggling with. Additionally, I would encourage the student in his/her strong areas and then encourage them to work more on the weak areas. I can also suggest alternative practice opportunities for students to benefit from.

b. Students are allowed to redo assignments at 50% credit. First, student would do assignments and turn them in. I would mark it and identify areas needing further attention. The original grade would go into the system and student would have a window to come in and make corrections. They are able to gain up to 50% credit

on the make-up work to help their grade. This is of benefit because students are able to see what areas they are weak in and are able to receive guidance to do better on future assignments.

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Lesson Plan # 1	
Lesson Title: Understanding sine, cosine, and tangent in the first Quadrant of the Unit Circle	**Grade Level:** ***10th Grade*** **Date:** ***TBD***
NAD Standard(s)/CCSS	
AII.4.4 Determine trigonometric values using the unit circle and right triangles. F-TF.1,2, G-SRT.6,7,8	
Classroom Lesson Context: check the following that apply:	
_X_ whole group _____ small group ___ one to one _____ students with IEP/504s _____ ELL **____other (please specify) _____** **Specify Number of students** **__7__boys__8__girls total ___15___**	
Individual Education Plan Goal(s) and Benchmark specific to the lesson:	
There are no IEP goals specific to the lesson.	

Learning Focus:	Strategies
Essential Question(s) **Big Ideas!!** How can these questions be used to guide your instruction?	1. What is a Unit circle? 2. What can I learn from the Unit Circle? 3. How do I build a Unit Circle?
Central Focus / Lesson Objectives: Choose Objectives that are measurable and **aligned** with the standard(s)	The student will be able to use the Unit Circle to determine the exact value of the trigonometric functions of basic angles within the first quadrant of the unit circle with 90% accuracy.
Academic Language: What is the key language demand? What academic language will you teach and develop? What are the key vocabulary words and or symbols? How will you use discourse and syntax?	**Language Function:** Determine **Language Demand**: Create a graphic organizer of trigonometric values of 30, 45, 60 and 90 degrees. **Vocabulary**: special right triangles, hypotenuse, sine, cosine, tangent, unit circle, quadrantal angles, exact value, coordinate.
Instructional materials: What materials will you use (attach samples without writing.)	Incomplete graphic organizer, workbooks, writing material.
Introduction to lesson: **Activating thinking and engagement**: What will you use to tap into prior knowledge that ties directly to objectives and standards selected. How will you promote higher	**Introduction to lesson**: **Activating thinking and engagement**: • Opening Activity: Pass out Papers and pencils • Ask students how many have heard of a unit circle.

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level and critical thinking? How will you use knowledge of students personal, cultural and community assets? **Body of Lesson/Teaching Strategies:** What will you have students do after you introduce the lesson to learn the standards? What questions will you ask to promote higher level thinking? **What opportunities will you provide for students to practice content language vocabulary?** **What language supports will you offer?**	• Ask them to write down 2 things on separate pieces of paper that they know about the Unit Circle. • When students are finished, look through responses and pull out those that are relevant into one pile, and the others into another pile. • Explain What is a Unit circle and allow students to record definition in their notes. • Review the concept of finding trigonometric values using **special right triangles** which was learnt in previous lessons through open class discussion and guided practice. • Ask, "What happens to the value of my trig functions for an unknown angle, θ, when the **hypotenuse**=1?" • Allow students time to calculate new values and share their findings. • Use their analysis to explain that the y coordinate=**sin**(θ), and the x coordinate=**cos**(θ). Show that $\boldsymbol{tan}(\theta) = \frac{y}{x} = \frac{sin(\theta)}{cos(\theta)}$. • Check for understanding and ask questions like "Is everyone with me?", "Is there anything that I said that may be confusing?", "Are there any questions?" • Have students follow along as you draw each angle from the same point with hyp=1, giving measurements for each vertical line drawn to the base for each angle reletive to the hyp being 1. Each horizontal distance is cosine of the enscribed angle and each vertical distance is sine of the enscribed angle. Each coordinate therefore will be (cosθ,sinθ) • Ask students, if you were to reflect the shape formed on the board in the x and y axis, what complete geometric shape would be formed. The response should be "a circle". • Reflect the quarter circle across the x and y axis until you obtain a complete circle. • Explain that we were able to use the special right triangles to complete the trig values of our special angles within the first **quadrant** of the complete circle. The values that were derived in the first quadrant can also be reflected throughout the other parts of the circle and this is the usefulness of using the **Unit Circle**. Define the unit circle. • Introduce objective. **Body of Lesson/Teaching Strategies:** • Explain that the circle is divided into 4 **quadrants** and reflect angles from first quadrant into the second quadrant. Explain the sign changes from the first quadrant into the second quadrant. • Allow students to join into small teams, no larger than 3, to complete reflection into other two quadrants. • Give each group 20 minutes to complete the reflections and extend time where

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	necessary. This time can be used to walk around and give guidance to those who need assistance. • Complete Unit circle on board with students and provide acronym **A**ll **S**tudents **T**ake **C**lasses to facilitate recalling how each quadrant varies in sign for the coordinates of each angle. • Make sure to identify **quadrantal angles** such as 0/360, 90, 180, and 270 degrees by definition. • Introduce the vocabulary **exact value** and the difference between exact value and estimated values and then use one of the quadrantal angles to show the exact value of the coordinates in the board. • Hand out left-hand cutout and teach left hand rule of determining the exact value of trig functions for 30 degrees. • Complete the sine, cosine and tangent of 30 degrees o the circle diagram using the left-hand rule. • Allow students to complete table for trig functions of all 45, and 60 degrees. They can work together in groups no larger than 3. **Accommodations-** May peer struggling learners in second grouping with teacher in order to go over left-hand rule for finding trig values. **Modifications:** Not applicable for this section **Differentiation:** Use of manipulatives, open floor discussion, diagrams, cooperative learning. **Language Syntax**: Making table to represent exact trigonometric values for 0, 30, 45, 60, and 90 degrees. **Language discourse**: Students are expected to use vocabulary words to identify and describe relationships within the unit circle. **Management Plan:** Prior to lesson we will address behavioral expectations for the learning segment. Students will be encouraged to raise their hands to answer and/or ask questions. Students will be allowed to create their own groups for this learning segment.
Closure/ summarizing: How will the students summarize and or share what they have learned to prove that they know	• The class will discuss each random trigonometric value for the angles in each quadrant of the unit circle. We will discuss any incorrect answers and review left hand rule where necessary.

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the standard(s) and its vocabulary? What **opportunities** will you provide for students to apply new knowledge while making connections to prior learning	• Allow volunteers to come up and explain their understanding to those who have trouble with a concept where necessary. **Accommodations**- Be intentional about making sure underperforming students are engaged in class discussion by calling on them to give input or solve problems. **Modifications:** - Not Applicable for this section. **Differentiation**- Asking questions, using manipulative, referring to graphic organizer(table), discussion **Language Syntax**- Not applicable for this section **Language discourse**: Graphic organizer- table of trig values **Management Plan:** Students will be expected to raise their hands to answer or ask questions.
Targeted Support: **Describe** the instructional supports that help students understand successfully use the language function and additional language demands: vocabulary, syntax , discourse,	Modelling and guiding their understanding of the relationship between the special right triangles and the unit circle using visual representations of the diagrams will help students to make connects between earlier knowledge and will help them to better process the new incoming content. By consistently using the appropriate vocabulary associated with this topic, students will be able to understand what they are being asked for regarding any future assignments and become familiarized with the correct language of the course. Manipulatives such as the left hand handout is effective because students can have close contact with an object that will help to deepen their understanding and aid in reproducing newly learnt content. Asking questions, collaborative learning and open class participation will allow for all students to be engaged in the learning process and will inform the teacher of student progress and understanding. By allowing other students to explain how they understand various concepts allows for deepening of information and provides opportunity for other ideas of processing information.
Assessment How will you assess the standard? How will students exhibit an understanding of the lesson objectives? How will you provide feedback that improves	**Assessment Plan for Learning Objectives:** • Informal assessments through questions, follow-up questions, and polls to test and understand the clarity of the lesson for the student. • Allow students to explain their understanding of concepts to their peers. • Students will complete a worksheet to identify the trigonometric values of angles within

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student success? What evidence will you collect to demonstrate understanding/mastery of the lesson's objective including their use of vocabulary	first quadrant of Unit Circle.
Reflection: What can you do differently you improve the lesson	

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Lesson Plan # 2	
Lesson Title: The Unit Circle and Reference Angles	**Grade Level:** ***10th Grade*** **Date:** ***TBD***
NAD Standard(s)/CCSS	
AII.4.4 Determine trigonometric values using the unit circle and right triangles. F-TF.1,2, G-SRT.6,7,8 F.TF.2 Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle.	
Classroom Lesson Context: check the following that apply:	
_X_ whole group _____ small group ___ one to one _____ students with IEP/504s _____ ELL **____other (please specify) _____** **Specify Number of students** **__7__boys__8__ girls total ___15___**	
Individual Education Plan Goal(s) and Benchmark specific to the lesson:	
There are no IEP goals specific to the lesson.	

Learning Focus:	Strategies
Essential Question(s) **Big Ideas!!** How can these questions be used to guide your instruction?	1. How do we reflect sine, cosine, and tangent for primary angles into all four quadrants of the Unit Circle? 2. How do we determine exact values of obtuse angles using reference angles? 3. What tool can help me to determine how to calculate the reference angles?
Central Focus / Lesson Objectives: Choose Objectives that are measurable and **aligned** with the standard(s)	The student will be able to use previously developed knowledge of the trigonometric values of primary angles to determine reference angles for angles between 90 and 360 with 85% accuracy.
Academic Language: What is the key language demand? What academic language will you teach and develop? What are the key vocabulary words and or symbols? How will you use discourse and syntax?	**Language Function:** Determine **Language Demand:** Complete work sheet identifying reference angle of given angles. **Vocabulary**: Quadrant, sine, cosine, tangent, exact value, unit circle, quadrantal angles, reference angles, terminal, reciprocal, standard position.
Instructional materials: What materials will you use (attach samples without writing.)	Incomplete graphic organizer, workbooks, writing material
Introduction to lesson: **Activating thinking and engagement**: What will you use to tap into prior knowledge that ties directly to objectives and standards selected. How will you promote higher	**Introduction to lesson**: **Activating thinking and engagement**: • Review Previous Lesson on finding exact values of sine, cosine, and tangent in first quadrant.

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level and critical thinking? How will you use knowledge of students personal, cultural and community assets? **Body of Lesson/Teaching Strategies:** What will you have students do after you introduce the lesson to learn the standards? What questions will you ask to promote higher level thinking? **What opportunities will you provide for students to practice content language vocabulary?** **What language supports will you offer?**	• Introduce reciprocal functions cosecant, secant, and cotangent and define what it means to be a **reciprocal**. • Have students determine exact value of reciprocal functions using table from prior lesson. • Review by pointing out flip-flop rule between 0-90, and 30-60. • Assess for values obtained by students by completing a row together on the board. And randomly picking other values and checking to see if everyone got the same value. • Pose the question, " What happens when we need to find **exact values** of angles that are not in the first quadrant?" **Body of Lesson/Teaching Strategies:** • Expand knowledge known about the first **quadrant** into the second quadrant by reflecting the same triangle from the first quadrant into the second quadrant. • Compare the triangle in the first quadrant to the triangle in the second quadrant. The only thing that changes is the sign of the x coordinate. • Pass out unit circles and complete Unit circle coordinates and angles for both first and second quadrant. • Carry this idea throughout the other quadrants and conclude with the fact that the exact value of sine, cos, and tan is the same except that the sign changes depending on which quadrant the terminal side of the angle lies in. • Ask questions to test for understanding of change of sign from quadrant to quadrant and share acronym **A**ll **S**tudents **T**ake **C**lasses to help them remember the sign changes. • Explain that the reason why the reflection unto different quadrants is important is because sometimes we may not be asked to find the exact values of angles in the 1st quadrant, however, we may be ask to solve for angles in other quadrants that are greater than 90. In this case, knowing the rule for reflecting matters. • Note that each angle is measured from the positive x-axis. The **initial side** is on the positive x-axis and the **terminal side** is the side adjusted depending on the angle we want to measure. This form is called **standard position.** • Show examples of angles in **standard position** and show how reference angles can be found. Reference graphic organizer in text book and have them copy it down in their notebook and use it to determine reference angles of assigned problems based on angles given . **Accommodations**- During work time I will have to pull my struggling learners aside to go over anything they do not understand. They may also need more time to complete the assignment

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	prior to the next class. May allow the use of the wax paper reflecting model to help with reflecting angle in other quadrants. **Modifications:** Will encourage them to complete entire assignment, but will not penalize if more time is needed outside of instructional time. **Differentiation:** Use of graphic organizer, cooperative learning, individual working, and acronym. **Language Syntax**: Fill out table for reciprocal functions, complete Unit Circle labelling for all four quadrants. **Language discourse**: Students will be expected to use appropriate vocabulary words to describe relationships within the Unit Circle. **Management Plan:** Prior to lesson we will review expectations for the learning segment. Students will be encouraged to raise their hands to answer and/or ask questions. Students will be allowed to speak openly during informal assessments and during peer collaboration to complete the table.
Closure/ summarizing: How will the students summarize and or share what they have learned to prove that they know the standard(s) and its vocabulary? What **opportunities** will you provide for students to apply new knowledge while making connections to prior learning	• Ensure that all students complete assignment and turned it in. • Have class join together and review the topic covered in this lesson. • Give students opportunity to share any new techniques they found while doing the assignment. • Ask what happens to my reference angle when my given angle is greater than 360. This will be the question they go home with and have to research. This will help with the transition into the next lesson. **Accommodations**- will collect all student work, but will ensure that an appointment is made with my struggling learners to complete work prior to next lesson **Modifications:** - Not applicable for this section. **Differentiation**- Asking questions, referencing graphic organizer, polling. **Language Syntax**- Not applicable for this section.

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	Language discourse: Graphic organizer, table of trig values. **Management Plan:** Students will be expected to raise their hand to answer and ask questions.
Targeted Support: **Describe** the instructional supports that help students understand successfully use the language function and additional language demands: vocabulary, syntax , discourse,	Modelling and guiding their understanding of the relationship between the first coordinates in the first quadrant and the other quadrants in the unit circle in an open class discussion and visual representations of the diagrams will help students to make connects between earlier knowledge and will help them to better process the new incoming content. By consistently using the appropriate vocabulary associated with this topic, students will be able to understand what they are being asked for regarding any future assignments and become familiarized with the correct language of the course. Manipulatives such as the handout is effective because students can have close contact with an object that will help to deepen understanding and aid in reproducing newly learnt content. Asking questions, collaborative learning and open class discussions will allow for all students to be engaged in the learning process and will inform the teacher of student progress and understanding.
Assessment How will you assess the standard? How will students exhibit an understanding of the lesson objectives? How will you provide feedback that improves student success? What evidence will you collect to demonstrate understanding /mastery of the lesson's objective including their use of vocabulary	**Assessment Plan for Learning Objectives:** • Informal assessments through questions, follow-up questions, and polls to test and understand the clarity of the lesson for the student. • Students will complete a worksheet to identify the reciprocal trigonometric values of angles within first quadrant of Unit Circle. • Complete trig values on the unit circle model • Complete assignment from text book and turn in.
Reflection: What can you do differently you improve the lesson	

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Lesson Plan # 3	
Lesson Title: The Unit Circle and Coterminal Angles (Lab)	**Grade Level:** ***10th Grade*** **Date: TBD**
NAD Standard(s)	
AII.4.4 Determine trigonometric values using the unit circle and right triangles. F-TF.1,2, G-SRT.6,7,8	
Classroom Lesson Context: check the following that apply:	
_X_ whole group _____ small group ___ one to one _____ students with IEP/504s _____ ELL **____other (please specify) _____** **Specify Number of students** **__7__boys__8__ girls total ___15___**	
Individual Education Plan Goal(s) and Benchmark specific to the lesson:	
There are no IEP goals specific to the lesson.	

Learning Focus:	Strategies
Essential Question(s) **Big Ideas!!** How can these questions be used to guide your instruction?	1. What are coterminal angles? 2. How do I find positive and negative coterminal angles? 3. What tool can help me to find coterminal angles?
Central Focus / Lesson Objectives: Choose Objectives that are measurable and **aligned** with the standard(s)	The student will be able to use to calculate positive and negative coterminal angles in degrees with 85% Accuracy.
Academic Language: What is the key language demand? What academic language will you teach and develop? What are the key vocabulary words and or symbols? How will you use discourse and syntax?	**Language Function:** Calculate **Language Demand:** Complete assigned problems by calculating positive and negative coterminal angles. Create graphic organizer to remember how to calculate coterminal angles in workbook. **Vocabulary:** Quadrant, unit circle, quadrantal angles, reference angles. coterminal angles, initial side, terminal side.
Instructional materials: What materials will you use (attach samples without writing.)	Complete graphic organizer, workbooks, writing material.
Introduction to lesson: **Activating thinking and engagement**: What will you use to tap into prior knowledge that ties directly to objectives and standards selected. How will you promote higher	**Introduction to lesson**: **Activating thinking and engagement**: • Review Previous Lesson on finding reference angles by asking questions like, "What is a reference angle?" and "What process did you use to find the reference angles?". • Allow two students to come up and use the process to find the reference angle of two

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level and critical thinking? How will you use knowledge of students personal, cultural and community assets? **Body of Lesson/Teaching Strategies:** What will you have students do after you introduce the lesson to learn the standards? What questions will you ask to promote higher level thinking? **What opportunities will you provide for students to practice content language vocabulary?** **What language supports will you offer?**	chosen examples. Upon completion, ask class if they agree with the answers and discuss any inconsistent answers. • Introduce the concept of coterminal angles by using the last reference angle problem from previous lesson. i.e The reference angle of 390 degrees is 60 degrees. But 60 degrees is also a positive coterminal angle to 390. This links their prior understanding of reference angles to the new concept of finding coterminal angles. **Body of Lesson/Teaching Strategies:** • Define coterminal angles using appropriate vocabulary. I.e. Initial side, and terminal side. • Use two examples to show what it means to share a terminal side. Then ask them to determine a relationship between each example of how much degrees I must rotate in order to determine my coterminal angle. • Generate formula for finding the coterminal angles and ask what they think would have to be done if I wanted a negative coterminal angle. • Model 2 example of finding negative coterminal angles in degrees and check for understanding. • Allow students to work independently or in small groups no larger than 3 to complete assigned problems. **Accommodations**- Have preassigned grouping that allows for stronger students to be peers with struggling learners. **Modifications:** Not applicable for this section **Differentiation:** Open class discussion, introducing varying methods of problem solving. **Language Syntax**: Creating a graphic organizer to show formula for calculating coterminal angles **Language discourse**: students are expected to use vocabulary words to describe relationships within the unit circle relating to coterminal angles. **Management Plan:** Prior to lesson we will review expectations for the learning segment. Students will be encouraged to raise their hands to answer and/or ask questions. Students will be allowed to speak openly during informal assessments and during peer collaboration to

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	complete the table.
Closure/ summarizing: How will the students summarize and or share what they have learned to prove that they know the standard(s) and its vocabulary? What **opportunities** will you provide for students to apply new knowledge while making connections to prior learning	• Ensure each student turns in their problems and ask students if they have any questions from the assignment. • Review all we have learnt about the unit circle, i.e. the hypotenuse=1, the x and y-coordinates are cos and sine of the angle respectively, and the reflection of each trig function into different quadrants based on sign rules. Speak about reference angles and coterminal angles and the fact that we have covered all of this content in one scale and that is degrees. • Explain that there is another method of measuring angles and it is in radians. • Pose a bonus question for next class and give an extra point on next assignment for those who come into next class having researched Radians and its relation to the circle. They have to come to me before the second bell with a brief statement that they researched. **Accommodations**- Not applicable in this section. **Modifications:** - Not applicable in this section. **Differentiation**- Asking questions accompanied with follow up questions for student responses, use of diagrams and visual manipulatives from previous lesson, acronym use. **Language Syntax**- Not applicable for this section. **Language discourse**: Not applicable for this section. **Management Plan:** Students will be expected to raise their hand to answer or ask questions.
Targeted Support: **Describe** the instructional supports that help students understand and successfully use the language function and additional language demands: vocabulary, syntax , discourse,	Modelling to guide their understanding, open class discussion and visual representations of the diagrams will help students to make connects between earlier knowledge and will help them to better process the new incoming content. By consistently using the appropriate vocabulary associated with this topic, students will be able to understand what they are being asked for regarding any future assignments and become familiarized with the correct language of the course. Manipulatives such as the handout is effective because students can have close contact with an object that will help to deepen understanding and aid in reproducing newly learnt content. Asking questions, collaborative learning and open class discussions will allow for all students

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	to be engaged in the learning process and will inform the teacher of student progress and understanding.
Assessment How will you assess the standard? How will students exhibit an understanding of the lesson objectives? How will you provide feedback that improves student success? What evidence will you collect to demonstrate understanding /mastery of the lesson's objective including their use of vocabulary	**Assessment Plan for Learning Objectives:** • Informal assessments through questions, follow-up questions, and polls to test and understand the clarity of the lesson for the student. • Students will be split in groups of 3 to complete assignment during class time.
Reflection: What can you do differently you improve the lesson	

Algebra 2

Name:

1. What is a Unit Circle?

2. What are quadrantal Angles?

3. What two methods can I use to find trig values of larger angles?

4. What is a reference angle? How do you find it?

5. What are coterminal Angles? How do you calculate them?

A2

Algebra 2

Name:

1. What is a Unit Circle?

2. What are quadrantal Angles?

3. Give 2 examples of Quadrantal angles.

4. What two methods can I use to find trig values of larger angles?

5. What is a reference angle? How do you find it?

6. What is the reference angle of 120?

7. What are coterminal Angles? How do you calculate them?

8. Find a positive and negative coterminal angles for 25.

A3