Name: Chris Park

Grade: 10-12

Subject: PreCalculus

Unit, Lesson: Trigonometric Identities

1. State or National Standard(s)
    a. **GEO-G.SRT** Define trigonometric ratios and solve problems involving right triangles.
    b. 6. Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of sine, cosine and tangent ratios for acute angles.
    c. 7. Explain and use the relationship between the sine and cosine of complementary angles.
    d. 8. Use sine, cosine, tangent, the Pythagorean Theorem and properties of special right triangles to solve right triangles in applied problems.

2. Objective(s)
    a. Students will be able to use trigonometric identities to simplify expressions.

3. Assessment(s)
    a. Observation with class work. I will be monitoring the class by asking polling questions to the class, walking around, and asking them questions. For this lesson, I will be asking them what trig functions they see and what identities that relates to. There are key components to notice such as a "+1" or a function squared that lets us narrow down the choices to one or two identities.
    b. Homework. There is homework that some students do. The culture in LACS is weird when it comes to homework, but I need to do a better job in encouraging homework and addressing finished homework in class. Homework is collected and marked which gives me time to see exactly which concepts the students need more support in. This is the start of a new unit, so making sure everyone is on the same page is very important. It also helps me know exactly how much they learned before since the NYS curriculum changed for trig.

4. Materials
    a. [Smart Notebook Presentation](Smart Notebook Presentation)

5. Procedure
    a. Opening (5 min)
        i. Today's warm-up is a quick exercise converting one unit to another.
        ii. They will be given time to work on this individually.

1. How can we get from yard to centimeters? What units can we easily convert to?
        iii. I will ask the class for their thought process and go through it step by step with them.
   b. Announcements (2 min)
        i. I will go over school announcements and let anyone give their announcements.
        ii. This includes the plan for today and some plans for the class this week.
        iii. Then there is a 30 sec pause.
   c. Homework Review (5 min)
        i. I will go over the homework.
        ii. First, I poll the class for how many students have it complete.
        iii. If there is a significant amount not done, the homework review will be quick.
        iv. Instead of going into every questions, I will highlight key concepts and ways of solving rather than going over the answers.
   d. Trig Identities(15 min)
        i. We will begin this by talking about the identities we already know.
        ii. The terms are equivalent, and it lets us simplify.
        iii. We will go over some more identities group by group. They will be explained to show why each one is true.
        iv. Next, we will do some practice together as a class to simplify some expressions.
        v. Later practice will be given for the students to do on their own and then go over as a class after some time.
   e. Practice and Review (10 min - end of class)
        i. The homework due the next day will be shown on the board for students to mark down.
6. Accommodations
   a. Student A
        i. A couple of students are highly disengaged due to the school culture not being rigorous, them being a senior, and doing all mandatory work. He is friendly with the teachers so there is no bad relationship. One approach I will be testing this week is modifying a future lesson to be about sound and music since he is very into music. This lesson is where trig becomes more challenging, so maybe he will be more engaged with this lesson. He seems to get the math concepts fairly quickly, so this may help or make him more disengaged.

b. Student B

    i.    Some students are very quiet when it comes to their lack of understanding. I am unsure if they mean to hide it or are simply shy when asking for help. With this in mind, I make sure to ask them directly if they need any help and check in on specific concepts to make sure they understand it. Checking their homework that was handed in the previous day will help with any review I may need to add this lesson.