

<b>Name: Mr. Coleman</b>	<b>Program: Student Teaching</b>	<b>Course: Algebra 2</b>
<b>Lesson Topic/Title: Proving Perpendicular Lines and Passing the Test</b> <span style="float: right;">Text</span>		
<b>Lesson Date: 10/11 - 10/18</b>	<b>Lesson Length: 90 minutes x3</b>	<b>Grade/Age: Eighth Graders</b>
<p><b>Learning Objectives (Targets):</b>          Students will understand how to prove theorems in relation to perpendicular lines          Students will be able to prove that lines are perpendicular          Students will know how transversals relate to proving perpendicular lines and how to use the theorems that relate them.          Students will review for the upcoming assessment and students will have fun doing so by playing a game of jeopardy</p>		
<p><b>Standards:</b>  <b>Content Standards</b>  <a href="#">CCSS.MATH.CONTENT.HSG.CO.A.1</a>          Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.   <a href="#">CCSS.MATH.CONTENT.HSG.CO.C.9</a>          Prove theorems about lines and angles. <i>Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.</i>   <a href="#">CCSS.MATH.CONTENT.HSG.CO.D.12</a>          Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.).</p> <p><b>Teaching Standards</b>          Learner Development          Assessment</p>	<p><b>Standards Alignment &amp; Justification:</b>  <b>Content Standards Justification</b>          I have met the content standards by making sure the students know their definitions, prove the theorems firstly before we're allowed to use them to prove other theorems, and to make sure we are formally doing all of our constructions on either graph paper or with a protractor and straight edge.           This lesson will focus on perpendicular lines and parallel lines, but will also be requiring previous knowledge of the other definitions that we had learned previously. I have also met these standards by the fact that I am assessing students this lesson and will be checking for understanding on all of these content standards.</p> <p><b>Teaching Standards Justification</b>          The largest teaching standard that I have met here is Assessment, which is paired nicely with learner development. This will be the second test that I am giving these students and after the first test I have recognized some</p>	

	<p>things that need improving and am making accommodations so as to assess these students most appropriately. An example of this is that instead of giving them specific theorems that they have to prove, I am giving them a choice of proofs to complete. That way they can choose the one that they feel they can complete most confidently.</p> <p>Also we will be playing jeopardy for a review game and be having a quiz fairly close to the test. This will hopefully have the students in an assessment mindset, while providing constant feedback for the content and their level of understanding. It also allows me to have multiple forms of assessment for them to see where they are.</p>
<p><b>Assessment:</b>    <input type="checkbox"/> Pre                    <input checked="" type="checkbox"/> Formative                           <input checked="" type="checkbox"/> Summative        <input checked="" type="checkbox"/> Student Self</p> <p>Formative: Quiz 3.4 and 3.5  Summative: Jeopardy, Chapter 3 test  Student Self: Review packet</p>	<p><b>Assessment (Data &amp; Student Feedback):</b></p> <p>For a formative assessment the students will be taking a quiz over 3.4 and 3.5, this is formative as they are still learning the material and with the test coming up so closely followed by this quiz, this will lend itself to giving me a rough idea of how the students may perform on their test.</p> <p>For summative assessments the students will be doing a jeopardy game and a chapter 3 test over all of the content in chapter 3. This will finish my teacher work sample, as now students have seen proofs and how to write them while at the same time being required to understand transversals and parallel lines. This gives them some content to be able to look at proofs at while giving them some new theorems that are not always as simple as the linear pair postulate.</p> <p>Finally for a student self-assessment they will be taking home a review packet for homework where they will be able to assess themselves. This will allow them a final chance to review some of the problems that they will most likely see on their test and ensure that they are studying for the test and not just simply doing no homework.</p>
<p><b>Integration of Other Content Areas: (If appropriate)</b>  Aside from the English being used to write complete sentences, which is a big deal for some of</p>	

the ELL learners, this lesson will be primarily mathematics.

**Instructional Strategies to Differentiate Whole Class Instruction:**

This lesson is focused on introducing the new theorems and proofs that we are learning about. So a lot of the differentiating will come in the form of the review. When we play Jeopardy the students will be able to choose the topic they want to answer when it comes to their team's turn. This is a little bit of self-differentiation. Followed by a review packet that is completely student-self assessment. I put a lot of the studying up to the students to complete on their own time in this lesson, I want them to study the theorems and understand how to use them and exactly what they mean.

**Modifications / Accommodations / Extensions For Individual Students with Identified Needs:**

To accommodate the ELL learners, when they take the test I will make appropriate accommodations. I have modified the test so they are able to use their notes and they will not be required to complete a written proof. That way they aren't so focused with the English aspect of it, because I am more concerned that they understand the flow of logic with the proofs and how to form a coherent argument. So they are being allowed to use their notes so they don't have to study from a textbook and memorize English theorems they may not understand, it is all about how to apply those theorems that I care about. The students who require these modifications are determined by the ESL teachers recommendations and under the decision between my Mentor and I.

**Technology Integration: (if appropriate)**

We won't be doing much with technology except for the smartboard presentation and jeopardy. So I will mention both and how they relate to the ISTE standards and the SAMR model.

I believe I have met the ISTE standards for both of my planned uses of technology even though they are fairly low on the SAMR model. The smartboard I am reaching the augmentation level and being able to pre-plan problems and copy and pasting problems to reteach them in another way. The jeopardy game is also on the augmentation level. It is no different then a power point presentation jeopardy, except for the fact things are much smoother and it saves to the cloud which is a welcome benefit.

**Materials and Resources for Lesson Plan Development**

- Laptop
- Quizzes
- Tests
- Review Packets
- Created Jeopardy Game

**Teaching & Learning Sequence:**

- Day 1:
- Review Homework (10 minutes)
- Quiz 3.4 & 3.5 ( 25 minutes)

3.6 Presentation ( 35 minutes)

Homework ( 20 minutes)

Day 2:

Go over quizzes (5 minutes)

Review Homework (15 minutes)

Jeopardy game (60 minutes)

Work on Review packet (10 minutes)

Day 3:

Test (80 minutes)

**Content Notes:**

**See attached smartboard presentations and Unit organizer**

**Post-Lesson Reflection:**

This lesson went okay, after grading the tests I was not totally pleased with the outcome, but the only direction forward for these geometry classes is to keep persevering onward. This is the end of my teacher work sample as well and it's clear to see the improvement they have made from the beginning of the unit. The beautiful thing about these proofs is that this is something they haven't seen in academies or hogwans which is incredibly liberating to be teaching them something they haven't seen before and challenging for them.

That being said, I was pleased with how the test came out. I think all the adjustments I made to how I create my tests are good and giving them a choice of proofs helped them out a little bit. Also the jeopardy game went really smoothly for the second class. I was able to make some adjustments to how I ran that game as well in the second class and it worked out well. For example instead of having everyone answer the question and give points to everyone (which did not go smoothly) I instead created a rotation where if the team got it wrong the next team had a chance to steal. The challenging part was making sure each team was working on the problem at the same time and working with their teammates.

I would change the review packet assignment. I think there is a better way for students to study for the test, of course I can't simply tell them to study because they won't. So it is necessary for me to give them some sort of assignment so they open their textbook and review a little bit. Going into this next unit, I will try to come up with a more efficient and effective way to get them to study for the test.