Rationale: Standards 1 & 2

A Mathematics Unit

By Emily Hunter

To demonstrate my proficiency in Standards 1 and 2, I selected a unit that I taught in a high school math classroom on the topic of quadrilaterals. I included the following documents: 1.1 unit guidelines, 1.2 assessment plan, 1.4 unit analysis and reflection, and five lesson plans. Prior to the teaching of this unit, I gave out a pre-test to determine the students’ proficiency level, and I then used this data to put the final touches on my unit.

The design of a unit correlates directly to its success. I spent many weeks planning for this unit before I taught it. I worked to make sure the content was aligned with the standards. My two main objectives were for students to be able to solve for the angles and sides in various quadrilaterals and be able to provide examples of quadrilaterals in the real world. These two objectives lined up with the Math Content Standards. Before and during my unit, I was constantly collecting data. I gave a pre-test to determine the students’ previous knowledge. This data was used in the creation of my unit. I also had formative assessments built into each of my lessons that measured how well students were meeting the learning objectives for that particular day. The content taught in this unit is extremely important because knowing how to solve for the lengths and angles in different quadrilaterals is something students will definitely use in the future. During my unit, I made sure to communicate the importance of learning this material. There is a lot of real-world application for the shapes that where discussed in this unit. We see shapes such as rectangles, parallelograms, squares, and rhombi every single day. They are a part of architectural design, and at least one or two of these shapes can be found in almost every room of a person’s house. Thus, knowing the properties about various quadrilaterals will become very beneficial when trying to solve a real-world problem. I communicated the concepts by constantly engaging students and using a variety of methods such as lectures, visuals, hands-on activities, labeling colored shapes, reading, PowerPoint, discussion, kinesthetic activities, group work, pair work, individual work, etc. to help the students understand the material. Keeping in mind that students have various learning styles, I used multiple instruction strategies. I had them dive deeper into the material by reading an expository text and critically thinking and discussing real-world examples. This allowed them to learn about quadrilaterals from multiple levels. All of these strategies helped students gain various perspectives on the topic. Students also learned multiple ways to work a problem and think critically about their answer. I had a few students who had learning disabilities, so I made sure to differentiate instruction for these students. I used the pre-test to determine students’ strengths and weaknesses. I then tried to tailor the unit to help strengthen those weaknesses. After the completion of each lesson, I looked over the students’ work and determined areas in which they were struggling. I would then lecture on these areas the following day and work problems that multiple students were having trouble completing. I even wrote the students individualized notes identifying and clarifying their misconceptions. I gave them positive feedback as well as particular areas to focus on improving during that day’s lesson.

When I first started attending Campbellsville University, I did not have the content knowledge or know how to create/plan a unit. This was evident in the first unit that I wrote. However, through more education classes, I have become more proficient at this skill due to my helpful professors and the practice involved with creating units. I learned how to create assessments that measure the objectives that I have created for each lesson based on the standards. As teacher, I have learned that it is crucial to be flexible and understand that a lesson may need to be changed to address students’ misconceptions. The whole point of the teaching process is to help students learn the material as thoroughly as possible through different techniques. Because students learn differently, a teacher must find what works best for each student and apply that type of teaching strategy. I am continually learning different ways to create and teach a unit as I observe and practice. I plan to continue growing in my development of units during my student teaching semester. I will be working each and every day with the same students, so that will make the creation of units simpler because I will know my students. I will also have a cooperating teacher who can help me create measurable objectives and plan effective lessons. Both teachers that I am paired up with next semester are very knowledgeable, so I plan to grow as a teacher by gathering as much knowledge from them as I can. I hope that someday I will be an effective teacher who communicates in a way so that my students can fully grasp the material.