Teacher Work Sample

Robert E. Howard Middle School

Mr. Jayuntay Williams

EDUC 450: Professional Clinical Practice

March 8, 2011

Dr. C. Kelly-Jackson

**INTRODUCTION**

The students included in this teacher work sample are 6th grade mathematics students at Robert E. Howard Middle School. Over 80% of all students that attend Robert E. Howard Middle School receive free and reduced lunch. Likewise, the majority of the students in my four classes receive free and reduced lunch. A total of 60 6th grade students received the instruction designed to effectively implement the lessons, but for the purposes of this teacher work sample, an Honors class and non-Honors class was chosen. The 4th period, honors class, comprised of 13 students was selected to represent student learning and progress and the 5th period, non-honors class, comprised of 15 students was selected to represent student learning and progress. With the implementation of the lessons, it was previously noted that there was a behavioral difference among the selected classes. The contributing factors to distinguish between the two classes are size, behavior, and learning ability. The learning abilities were acquired through informal assessments of observation and independent practice. A more formal evaluation of the students’ learning abilities was gained by the students’ South Carolina PASS Scores. The students in the non-honors class scored “Met” or “Not Met” and the Honors students scored “Met” or “Exemplary”.

**DESCRIPTION OF THE LESSON**

During the week of February 4, 2011 through the week of February 18, 2011, lessons were implemented to target the South Carolina Indicators 6-4.7: Compare angles, side length, and perimeter of similar shapes, 6-4.8: Classify shapes as similar, and 6-4.9: Classify pairs of angles as either complementary or supplementary. Each of these indicators are aligned according to the South Carolina Academic Standards and were presented in the order, 6-4.8, 6-4.7, and 6-4.9, according to the South Carolina S3 Mathematics Curriculum. Because the indicators were aligned and subdivisions of standard 6-4, they were taught during a period 1 ½ weeks.

The first indicator, 6-4.8: Classify shapes as similar, was taught during a single class period of sixty minutes. The pre/post assessment contained an item that requested the students knowledge of the definition of a congruent shape. The students were given the opportunity to work in cooperative learning groups to determine a definition and identify the characteristics of similar and congruent shapes. The students gave a brief presentation of their definition and the class tested several shapes, as they spoke, to determine if the characteristics given would help determine if a shape was similar, congruent or neither. The students were given several practice questions to aid in their understanding of similar and congruent figures. The objective of the lesson was the learner will be able to classify shapes as similar and this was to be achieved after the students engaged in an interactive PowerPoint and took notes. The students completed a worksheet to assess the mastery of the objective.

The second indicator, 6-4.7: Compare angles, side length, and perimeter of similar shapes, was taught using three, sixty minute class periods. The pre/post assessment required the students to find the perimeter of a shape. It also assesses the students’ knowledge of corresponding sides. The lesson began with a review of the distinction between similar and congruent shapes. The lessons were planned to include the tactile and visual learning modalities, in an attempt to differentiate learning to accommodate all students. To ensure that the students received all essential information, as outlined in the SC S3 Mathematics Curriculum, the students needed to be able to determine corresponding sides of similar figures. Corresponding sides were essential so that the students could determine and compare the side length and perimeters of the similar figures. The students completed an activity in which they determined the corresponding sides of five similar figures. The students, then, were engaged in a team competition to classify shapes as similar. The game was obtained from [www.ixl.com](http://www.ixl.com) and the students received a grade on the basis of their final score in comparison to the other groups. The students mastered this objective and were ready to move on to the next portion of the lesson. During the second day, the students were given the opportunity to engage in tactile learning. In their groups, the students were to use the tiles on the floor as 1 foot units. With the tiles on the floor, the students used tape to construct similar figures and determine their perimeters using the tiles. The student recorded their finding and presented to the class their various similar figures. The students made the comparison that similar figures have the same angle measure and their side lengths and perimeters are different. The students determined that the corresponding sides were proportional because each side length of a similar figure increased by a given value.

The concept of proportional sides led to the third lesson. In the pre/post assessment, the students were given a proportion to find the value of x. In the lesson, the students used proportions to determine the missing side measure of a similar shape. The students were able to recall that a ratio was a comparison of two quantities and were introduced to the new concept that a proportion is two equal ratios that are equal to one another. The students were given a worksheet and given instructions as to how to write a ratio for each similar figure. The teacher illustrated to the students, three different ways to solve proportions to find the missing side length of a similar shape. The teacher modeled at least ten examples and then engaged in guided practice with the students. The students began to give the teacher instruction, as a way for the teacher to assess their knowledge of the content covered during the lesson.

The final two lessons were based on indicator 6-4.9: Classify pairs of angles as either complementary or supplementary. The Pre-Assessment required the students to classify angles and determine what makes an angle. During this lesson, it was essential for the students to be able to identify each type of angle before they could determine if angles were complementary or supplementary. As an introductory activity, the students were given a right, obtuse, acute or straight angle. The students had to identify the angle, tell its measure and find five objects, seen in daily life, that contain that angle. The students were very observant and were able to find the relevance of the lesson, entitled, “Angles, Angles Everywhere”. The students were then engaged in an interactive PowerPoint that contained questions and observations that would assess the students’ comprehension of the content.

Pre-Assessment

Please answer the following questions.

1. Two rays that share the same endpoint is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Angle
3. Side
4. Line
5. Midpoint
6. Classify the following angles.

­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Corresponding sides are sides that match or have the same relative position.
2. True
3. False
4. Find the perimeter.

6 ft

6 ft

6 ft

1. =
2. A congruent figure is a figure in which \_\_\_\_\_\_\_\_ sides of both figures have the same length and both of the figures have \_\_\_\_\_\_\_ shape.
   1. Some; the same
   2. All; a different
   3. All; the same
   4. Some; a different

Post-Assessment

Please answer the following questions.

1. Two rays that share the same endpoint is a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Angle
3. Side
4. Line
5. Midpoint
6. Classify the following angles.

­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Corresponding sides are sides that match or have the same relative position.
2. True
3. False
4. Find the perimeter.

6 ft

6 ft

6 ft

1. =
2. A congruent figure is a figure in which \_\_\_\_\_\_\_\_ sides of both figures have the same length and both of the figures have \_\_\_\_\_\_\_ shape.
   1. Some; the same
   2. All; a different
   3. All; the same
   4. Some; a different

**4th Period, Honors 6th Grade Math Class (13 Students)**



Pre-Assessment Results by Question (**0** denotes incorrect, **1** denotes correct)



Post-Assessment Results by Question (**0** denotes incorrect, **1** denotes correct)



Pre-Assessment and Post-Assessment Scores Representation of Increase by Question

**4th period, Honors, 6th Grade Class**

Pre-Assessment and Post-Assessment Scores Representation of Increase by Individual Score

**4th period, Honors, 6th Grade Class**

Pre-Assessment Percent Correct for each Question (of the students tested)

Post-Assessment Percent Correct for each Question (of the students tested)

**5th Period, non-Honors 6th Grade Math Class (15 Students)**

Pre-Assessment Results by Question (**0** denotes incorrect, **1** denotes correct)



Post-Assessment Results by Question (**0** denotes incorrect, **1** denotes correct)



Pre-Assessment and Post-Assessment Scores Representation of Increase by Question

**5th period, non-Honors, 6th Grade Class**

Pre-Assessment and Post-Assessment Scores Representation of Increase by Individual Score

**5th period, non-Honors, 6th Grade Class**

Pre-Assessment Percent Correct for each Question (of the students tested)

Post-Assessment Percent Correct for each Question (of the students tested)

**INTERPRETATION OF DATA**

The data collected displays the recollection of prior knowledge and the acquired knowledge as a result of the three indicators taught and assessed. This narrative will interpret the data findings of the **4th period**, **honors class of 13 students**. In looking at the results of the pre/post assessment, one could gather that the students’ learning had increased. From the data, on questions 1, 3, and 5, the student scored less than 80%. At Robert E. Howard Middle School, Mastery is 80%. Therefore, it was my goal to implement effective learning strategies so that all students could reach mastery of 80% or better. After analyzing the data from the post-assessment, the class mastered 5 of the 6 questions with 80% or better. The instruction given during the lesson was effective and beneficial as it aided the students in gaining a better understanding of the concepts addressed. There were several learning modalities target throughout each of the lessons. Visual, auditory and tactile learning were utilized to implement the lessons. The students were also given several models to complete independent practice problems in a way that is most suitable to their individual learning styles. The activity that included tactile learning aided the students in understanding similar figures and recognizing proportions and finding perimeter. In solving proportions, the students increased their overall class score by 30%. The students also gained a greater awareness of angles and their relevance to daily life, as a result of the introductory activity. The students were able to determine what an angle was as a result of the in-depth, interactive PowerPoint on angles and increased the class score by 56%, increasing from 36% to 92%.

The data collected displays the recollection of prior knowledge and the acquired knowledge as a result of the three indicators taught and assessed. This narrative will interpret the data findings of the **5th period**, **non-honors class of 15 students**. In looking at the results of the pre/post assessment, one could gather that the students’ learning had increased. From the data, on questions 1, 3, and 5, the student scored less than 80%. At Robert E. Howard Middle School, Mastery is 80%. Therefore, it was my goal to implement effective learning strategies so that all students could reach mastery of 80% or better. After analyzing the data from the post-assessment, the class mastered 5 of the 6 questions with 80% or better. The instruction given during the lesson was effective and beneficial as it aided the students in gaining a better understanding of the concepts addressed. There were several learning modalities target throughout each of the lessons. Visual, auditory and tactile learning were utilized to implement the lessons. The students were also given several models to complete independent practice problems in a way that is most suitable to their individual learning styles. The activity that included tactile learning aided the students in understanding similar figures and recognizing proportions and finding perimeter. In solving proportions, the students decreased their overall class score by 8%. The students gained a greater awareness of angles and their relevance to daily life, as a result of the introductory activity. The students were able to determine what an angle was as a result of the in-depth, interactive PowerPoint on angles and increased the class score by 61%, increasing from 31% to 92%.

To compare the classes, the data shows that learning did occur. The same instruction was given to both classes. This, to me, illustrates that the more effective and student-centered the instruction is, the less classroom behavior and management issues one will encounter. Both classes need more instruction on solving proportions of similar shapes. With more instruction, modeling and practice, the students will master the concept. Behavior and class size, with respect to my teaching experience, had no major influence on student achievement. The students’ differing learning abilities was not a major factor either. The students were able to grasp the concepts and apply their knowledge on the various informal assessments.

**REFLECTION**

There were several strengths and weaknesses of the lesson. The strengths included the implementation of an array of instructional strategies and learning modalities to make the lessons more student-centered. Such efforts led to an increase in the scores of the students. The weaknesses of the lesson included the students needing more instruction on finding the missing side lengths of similar figures. The students, in the 4th period, honors class, were given three ways to solve proportions, but need more practice to become proficient in the knowledge of the concept. This affected the data by the score increasing by 30% but the scores did not reach overall mastery of 80%. The students in the 5th period, non-honors class, were given the simplest way to solve proportions because it was considered that the students become confused. The students’ scores plummeted by 8% as a result. The lesson on proportions has to be re-taught to ensure that the students master the objective of solving proportions. Providing students with a visual aid, an interactive game activity, and audio and tactile learning, the students’ interests were aroused and therefore, the learning occurred. Cooperative learning was also implemented to aid in the enhancement of student learning. The students were able to gain the insight of their peer and share ideas that would be most beneficial for them to find solutions to problems and practices. The theories that support student engagement and visual learning support the reflections on increased student learning and achievement. The assessments were constructed on the basis of the pre-requisite skills that the students should have recovered in order to advance to the SC indicators to be taught. The assessments were valid in that right, but they would have been more accurate with both pre-requisite skills and skills to be learned incorporated. However, because the students gained a greater understanding of the basic concepts, they were able to master the objectives of the SC indicators. The students should be given more time to learn and practice proportions. The instruction was differentiated and the students were given an array of strategies and modalities to encourage and ensure student learning. I benefited from the lesson and the assessment by being able to reflect on my practices and gather student data to assess their achievement.