Maria Konstantopoulos

Topic: Geometry Circles, Inscribed Arcs, Angles
Duration: 45 minute

MA Curriculum Frameworks: Understand and apply theorems about circles. Find arc lengths and areas of sectors of circles.

-Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector**.** G-C (Pg. 120)

Content Objective: Students will be able to measure the arc lengths and area of inscribed angles of a circle. They will be able to calculate the expressions using the formulas given.

Assessment: I will be able to assess the students' progress and understanding of the material by collecting all work done by the students. I will be evaluating their developmental understanding on these concepts by verifying they show logical process on how they got the answer. All computations must be shown on paper.

Academic Language Objective: Students will be able to evaluate the inscribed angle of a circle by composing a word problem individually using *at least* 2 of the following tier two and three words: Inscribed angle, tangent, sector, chord, secant, minor, major arc, circumference, and area.

Assessment: I will be able to evaluate the progress of each student by collecting the word problems. Every student will submit a word problem individually while using mathematical concepts.

Opening (15 minutes): I will start of by introducing the difference between a major and minor arc. Then I would review briefly the formulas for area and circumference of a circle. I will then demonstrate to the students that the measure of the angle whose vertex is the center of the circle equals the measure of the minor arc. As I move the angle, the central angle and measure of arc remains constant. I will present that on Geometer's Sketchpad. Then I will present to the students my "Important Definitions, Theorems and Formulas Sheet" (Appendix A) for arc length of circles. I will go over that sheet and make sure all students understand completely.

During Activity: All around the world Activity (20 minutes): Students will be put in groups. They will each be assigned with 2 math problems at each station (A total of 8 math problems). Once all members of the group have finished the problems at the station, they can then move on to the next workstation. First group to finish first wins!

Closing (Wrap Up: 10 minutes): I will then present the students with individual work. All students must create a word problem. This is called the "Exit Ticket" (Appendix B). Students must complete the Exit Ticket and use the new vocabulary words. (This will help me assess the students' progress on the new material.) I will then assign homework and answer any last minute questions students have.

Homework Assignment- Diagram on Geometers Sketchpad (Appendix C): Construct a circumscribed equilateral triangle. Show how all inscribed angles are equal AND measures of intercepted arcs are equal as well. What is the relationship between both the measure of intercepted arcs and the inscribed angles?