Teacher/School: Tamara Robinson/ Lake Placid Middle School

Unit Title: Area of Polygons and Circles

Grade Level: 7th grade

Subject/Topic:

The TI- 73 Explorer calculator will be used to inspire students to want to utilize the advanced capabilities of a graphing calculator. The teacher will use the calculator to define various polygons and circles, generate area formulas, and model examples of the area calculations. The calculator will also generate a quiz to test student knowledge of the material.

Time Needed:

One to two class periods

Learning Objectives:

Students will learn how to calculate the area of various polygons and circles.

Sunshine State Standards:

M.A.B. 1.3.1 M.A.B.1.3.3 M.A.B.2.3.2 M.A.B.3.3.1

Materials/Supplies:

1 TI- 73 Explorer calculator with LCD Overhead projector

1 roll of painters tape

1 ruler ! 1 piece of string 2 feet long ;

Paper and pencil for each student 1 ;

Prerequisite Skills:

1. Review the definition of a polygon and how to calculate the perimeter and circumference of figures.
2. Discuss why a circle is not a polygon.
3. Discuss the parts of a circle.
4. Have students confirm the length of one floor tile using a ruler.

Instructional Procedures:

1. Before class begins, the teacher will need to tape off on the floor a large example of the rectangle, square, parallelogram, triangle, trapezoid, and draw a circle. Use the floor tiles as guides.

2. Divide the class into six groups. Each student will need paper and pencil.

3. Using the overhead projector and the TI- 73 calculator, the teacher will show the class the definitions, formlulas, and examples of the rectangle, square, parallelogram, triangle, trapezoid, and circle. The students will take notes.

4. After the demonstration, the groups will each go to one of the figures taped on the floor and calculate the area. When all groups are finished, the teacher will signal for the groups to change to a new location and continue the process until all figure areas are calculated by each group.

*Students working at the circle location will need to use a ruler to measure the length of the string (which should be equal to the radius of the circle that the teacher drew on the floor).

5. Discuss the correct answers with the class and answer any questions.

Differentiated Instruction:

ESE and ESOL accommodations will be addressed by pairing these students with appropriate student helpers in the groups.

A gifted student could be in charge of planning how to:

1) create three-dimensional shapes using the figures with paper plates,

2) figuring out which shapes tessellate, or

3) creating a piece of art using the shapes.

Assessment:

If the class understands, then the teacher may proceed with the quiz. If the class is not ready, then additional problems could be assigned for practice and discussion. Students will take a quiz that is projected with the use of the TI- 73 calculator and overhead. To earn a passing grade, students must be able to use the appropriate fornlula to calculate the areas. Students must show work and label answers.