Algebra/Geometry Institute Summer 2003

Lesson Planning Guide

Faculty Name: Steven G. Hulette
School: Myrtle Hall III
City: Clarksdale, MS
Grade Level: 6th

Geography: Lengths, Perimeter, and Area of similar objects
Mississippi Frameworks Competency 1 b.
Institute Content Based on Mississippi Frameworks IV. F.

1 Teaching objective(s)

Students will work in groups. Each groups will consist of three to four students.

Student will use attribute blocks to explore how perimeters, areas, and side lengths of similar shapes can change in size but still maintain it's original shape. Shapes used will be:

A. Rectangles
B. Squares
C. Circles
D. Triangles

Students will compare shapes of varying size such as:

A. Large, medium, and small triangles
B. Large, medium, and small rectangles
C. Large, medium and small circles
D. Large, medium, and small squares

The students will compare, observe and interrupt the different size shapes they have constructed. The students will use graph paper an overlapping of similar figures to meet this objective.

The students will utilize vision and Algebraic formulas to explore the geometric shapes to better understand the concept.

The students will use the attached formulas to accurately calculate the areas of each size and shapes to make their exact comparisons.

The students will record their interrupted changes in perimeter and area of each shape as well as recording their observations as to what happened to the scale factor of the shapes.

Students will participate in a class discussion on their findings and present any questions they may have.

All student observations will be turned into the teacher to check for comprehension of the lesson content.

The students will participate in a class discussion on their findings and ask any questions they may have on the material covered. The teacher will lead the class discussion.

The students will trace their findings for each geometric shape on graph paper overlapping them by shape from smallest to largest.

2 Instructional Activities

The teacher will divide the class into groups of three to four students per group. The groups will work cooperatively with attribute blocks. The groups will utilize the different groupings of large, medium, and small.

The teacher will introduce the students to the different geographic shapes to be used. The teacher will utilize the overhead projector and attribute blocks to help the students better understand their task and the expected outcome. The overhead projector will also help the students become familiar with the materials they are to utilize in this exercise.

The teacher will pass out attribute blocks to each group and instruct the groups to work cooperatively in exploring as many changes as possible such as size and area of each. The students will also make predictions base on their exposure to the different sizes of the geometric shapes. The students will calculate the changing area and dimensions of each figure as the size of each shape changes.

The teacher will move around the room to observe the groups at work and to give guided assistance as needed.

To close the lesson the teacher will lead the class in a discussion by encouraging the student to explain their findings, and answer any question students may have. To prompt discussion the teacher will ask leading questions to prompt even more discussion such as:
What did you find out about as the size of the square increased?
Did anyone find any surprises as the geometric shapes increased?
Which large area had the most area?

3. Materials and Resources

Overhead projector
Attribution blocks (various colors, sizes, and shapes)
Paper
Pencil or pen
Graph paper
Transparencies

4. Assessment

The teacher will assess the accuracy of students' work through observations while monitoring the groups, by students' participation in the discussion, and student's written report of their findings during this exercise.

Handout and Transparency

Formulas for computing perimeter and area of shapes

1.	Circles	Circumference = $2\pi r$ Area = πr^2
2.	Rectangles / Square	Perimeter = 2w=2h Area =bh
3.	Triangle	Perimeter = the sum of all it's sides Area = 1/2bh