

## Operation Classroom ~ Makeni, Sierra Leone, July 2005

1. Lesson Title/Topic: Measuring a mountain!
2. Target audience: Students of Sierra Leone
3. Time allocation: Two-five day project
4. Lesson objectives:
  - A. Pre-activities: Review/Introduction of trigonometric ratios for right angle triangles [Sine, Cosine and Tangent].
  - B. Activities; Investigate the Law of Sines. Make a conclusion by studying the entries in a table that shows the measure of the sides, measure of the angles, and the ratios of  $\sin A/a$ ,  $\sin B/b$  and  $\sin C/c$  for three triangles [ acute, right and obtuse] [Round to tenths]
 

| mA | mB | mC | a  | b  | c  | $\sin A/a$ | $\sin B/b$ | $\sin C/c$ |
|----|----|----|----|----|----|------------|------------|------------|
| 3  | 4  | 5  | 36 | 54 | 90 | .19592842  | .20225425  | .2         |
  - C. Post activities: Measure the height of a distant object
5. Process Skills student will demonstrate: Trigonometric ratios for sine, cosine and tangent. . Finding the measure of angles in a triangle if two angles are known.
6. Materials: Protractors, math tables and/or calculators.
7. Procedures: Filling in a table. Making drawings. Actual measures of angles and distance.
8. Conclusions: Methods of solving the problem
9. Assessment and evaluation: Reasonable answers. Using tables and/or calculators.
10. Extensions (Relate topic to World): Surveyors measuring distances.
11. Resources: Geometry books: Trigonometric ratios, Law of Sines.
12. Reference: Geometry- Problem of the Week- Measuring the Matterhorn

