Tempo Spherical Activity #1

You will be given a large paper, glue, toothpicks and 4 triangular spherical wedges.

Your 1st task will be to create a hemisphere.

(NOTE! I would take 2 of the triangular spherical wedges and create a spherical wedge. Then I would do the same with the other 2. After you have created the 2 spherical wedges, then put them together to create the hemisphere.)

Once you have created your hemisphere place it on the large paper and trace a circle around the outside of it in order to make the great circle.

Now it's your task to find the following information:
(Note! Explain how you found the information.)

A) The diameter of the great circle or hemisphere is:

B) The radius of the great circle or hemisphere is:

C) The circumference of the great circle or hemisphere is:

D) The surface area of the hemisphere is:

E) The surface area of one of the spherical wedges is:

F) The surface area of one of the partial spherical wedges is:

G) The volume of the hemisphere is:

Links:
1. Tempo Gloss Globe – http://www.tempoglossglobe.com
2. Wikipedia, the free encyclopedia
   a. Sphere - http://en.wikipedia.org/wiki/Sphere
   b. Spherical cap - http://en.wikipedia.org/wiki/Spherical_cap
   c. Spherical wedge - http://en.wikipedia.org/wiki/Spherical_wedge

California State Standard ---- 7th Grade

Measurements and Geometry

1.0 Students choose appropriate units of measure and use ratios to convert within and between measurement systems to solve problems:

1.1 Compare weights, capacities, geometric measures, times, and temperatures within and between measurement systems (e.g., miles per hour and feet per second, cubic inches to cubic centimeters).

1.2 Construct and read drawings and models made to scale.

1.3 Use measures expressed as rates (e.g., speed, density) and measures expressed as products (e.g., person-days) to solve problems; check the units of the solutions; and use dimensional analysis to check the reasonableness of the answer.

2.0 Students compute the perimeter, area, and volume of common geometric objects and use the results to find measures of less common objects. They know how perimeter, area, and volume are affected by changes of scale:

2.1 Use formulas routinely for finding the perimeter and area of basic two-dimensional figures and the surface area and volume of basic three-dimensional figures, including rectangles, parallelograms, trapezoids, squares, triangles, circles, prisms, and cylinders.

2.2 Estimate and compute the area of more complex or irregular two- and three-dimensional figures by breaking the figures down into more basic geometric objects.