1014-05-1587 **Thomas C. Hull*** (thull@merrimack.edu), Department of Mathematics, Merrimack College, North Andover, MA 01845. *Counting and 3-Edge-Coloring Spherical Buckyballs.*

A Buckyball is a polyhedron that has only pentagon and hexagon faces and has all vertices of degree three. It is well-known, and fun to prove, that all Buckyballs have exactly 12 pentagon faces. We say that a Buckyball is d-spherical if the 12 pentagons are evenly spread out on the polyhedron's surface so that all neighboring pentagons are distance d away from each other, where this distance is measured by the edge length of a shortest path between two pentagons. We prove that the the number $B(d)$ of different d-spherical Buckyballs is 1 if d is even and k if $d = 2k - 1$. We also develop algorithms for 3-edge-coloring spherical Buckyballs. (Received September 28, 2005)