

1106-52-2497

**Jeremy Newton\*** (jnewto02@leeu.edu) and **Debra Mimbs**. *Counting the Unit Polyhedron Volumes in a Tetrahedral Construction.*

Arising from Eike Hertel's paper, {Reguläre Dreieckspflasterungen konvexer Polygone}, we discuss tiling a regular tetrahedron with unit tetrahedrons and octahedrons. Ordering the tetrahedral constructions by size produces the sequence of tetrahedron numbers, which represents the number of unit tetrahedron volumes in a tetrahedral construction, which is the sequence of cubic integers. Further, we explore by truncating a tetrahedron by cutting away its corners and discover a new sequence of integers. This work has importance in physics in the study of crystals.

(Received September 16, 2014)