

## Zometool Geometry Workshop

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Zometool is a commercial plastic construction set which is well engineered to make a very wide range of beautiful 3D structures. George W. Hart and Henri Picciotto have co-authored the book *Zome Geometry*, which describes hundreds of mathematical models and other fascinating forms which can easily be made with Zometool [1]. It is designed for both classroom and self-study use. Detailed contents are given on the web page [2].

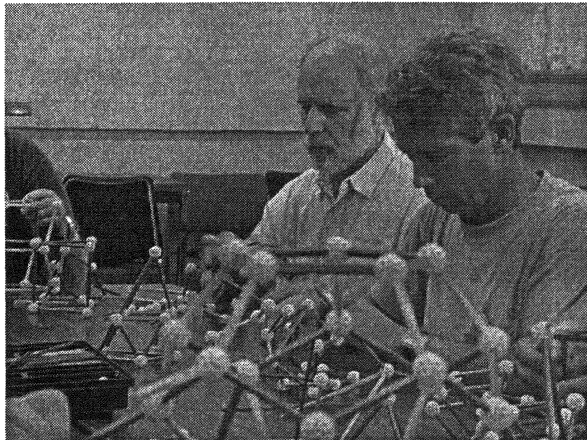
Hart has led Zometool workshops at conferences, museums, and schools. Figures 1-4 show a range of small and large models made by participants of the workshop he led at the MOSAIC 2000 conference at the University of Washington in Seattle, in August 2000. All photos are by Douglas Zongker.

The Bridges 2001 conference will feature two Zometool workshops led by George Hart presenting material from the book:

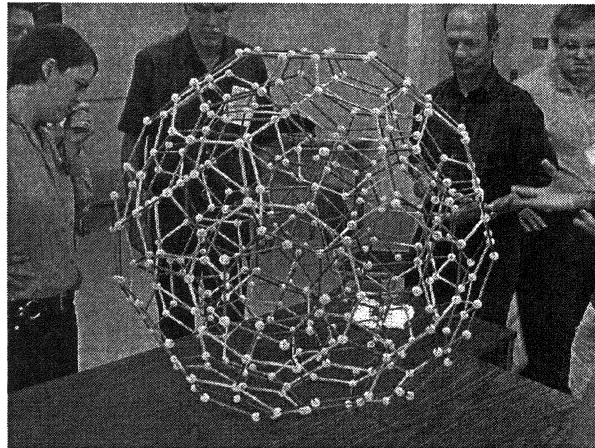
- 1.) During the three days of talks, there will be a "hyperstructure barn raising," in which participants will make a large group construction. The result will be a beautiful projection of a 4-dimensional polytope which has never been made before, significantly larger than that shown in Figure 2 below. This will take several hours, and participants are welcome to come and go for whatever times they can. Although this will be an advanced construction, no previous Zome experience is necessary and the underlying geometry will be explained during the workshop.
- 2.) During the two days of teacher workshops, there will be a hands-on introduction to the set involving smaller projects, including prisms, Platonic solids, Archimedean solids, etc. Methods and models will be presented for using Zometool in the classroom to present interesting geometric ideas, including polyhedra, tessellations, fractals, space structures, the fourth dimension, etc. Although this will be slanted towards teachers, anyone interested in geometry will enjoy building the models.

### References

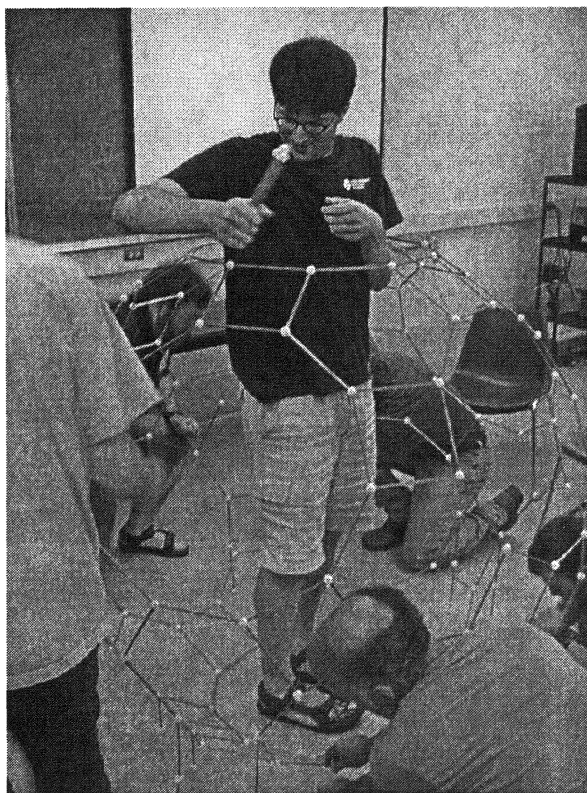
- [1] George W. Hart and Henri Picciotto, *Zome Geometry: Hands-on Learning with Zome Models*, Key Curriculum Press, 2001.
- [2] <http://www.georgehart.com/zomebook/zomebook.html>



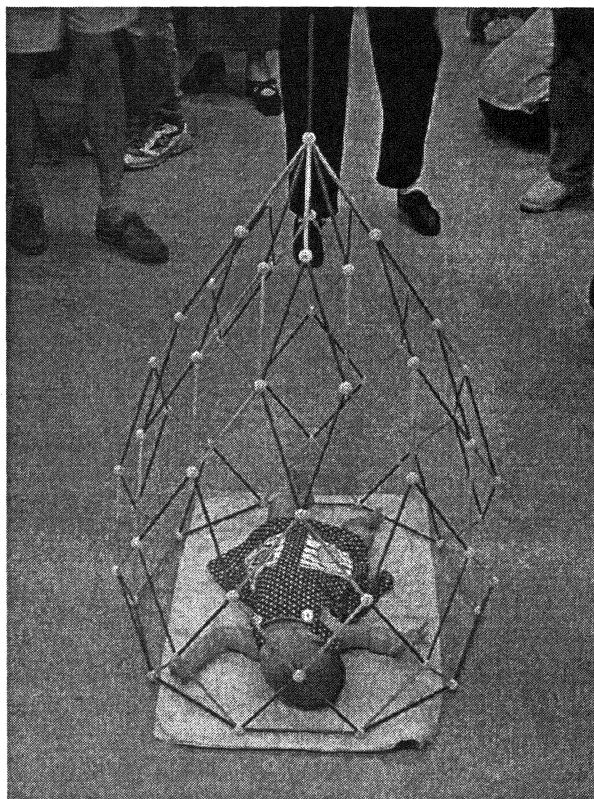
**Fig. 1.** A range of prisms, tetrahedra, icosahedra, dodecahedra, etc. made with Zometools by workshop participants.



**Fig. 2.** A projection of a four-dimensional solid called the "120-cell" into our three-dimensional space.



**Fig. 3.** Craig Kaplan building a large Archimedean solid from the inside—the truncated icosidodecahedron.



**Fig. 4.** A non-western dome design, with Eleni Salesin guest occupant. (She didn't build it.).