

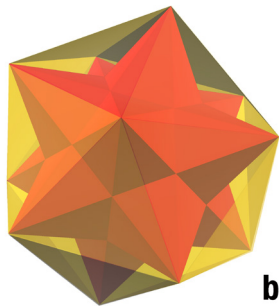
Dedicated to Steve Baer, Clark Richert, Marc Pelletier, John Conway and Roger Penrose

A SLICE OF SPACE

sculpture by Amina Allen Bühler

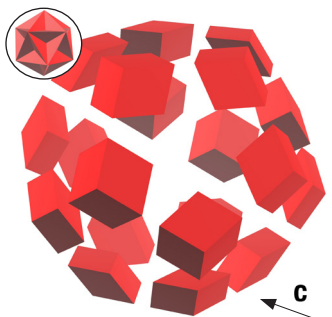


a



b

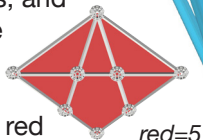
The 5 cubes of the dodecahedron (a) bridge the apparent chasm between cubic (2-; 3-fold) and icosahedral (5-fold) symmetries. Amina Bühler-Allen recently discovered 10 “squashed” cubes* (c) hidden in one of Marc Pelletier’s favorite models, the *stellated dodecahedron in an icosahedron* (b).



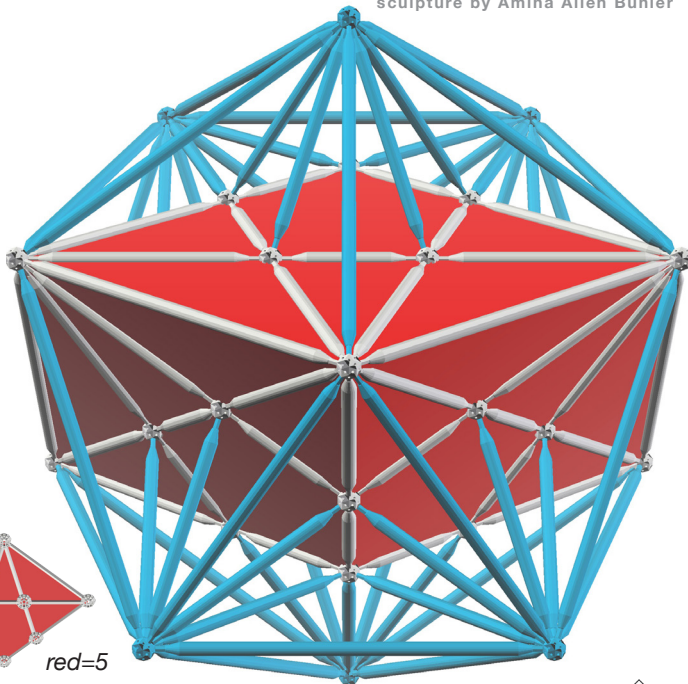
c

Each squashed cube has 6 rhombic faces, all “fat” Richert-Penrose tiles, and all lying in one of the Zometool’s 6 red planes. Red planes are perpendicular to red lines, where 5-fold symmetry reigns.

*parallelepipeds



red=5

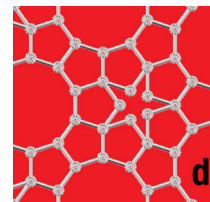


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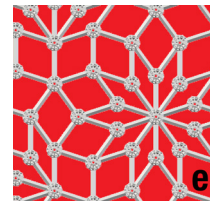
In addition to building a model of Amina’s sculpture, use this gift to build a number of quasi-periodic tilings that live in the red plane:

Johannes Kepler’s tiling (d) of pentagons, stars and decagons,



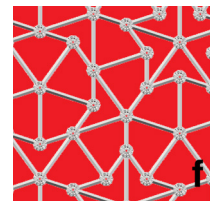
d

Richert-Penrose tiles (e), the fat and skinny rhombuses that Clark Richert discovered when casting a shadow of the rhombic “triacon” (try it!),



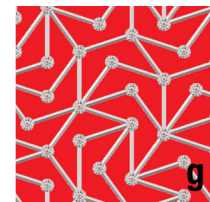
e

Penrose’s kites and darts (f), which use 2 lengths of struts, and



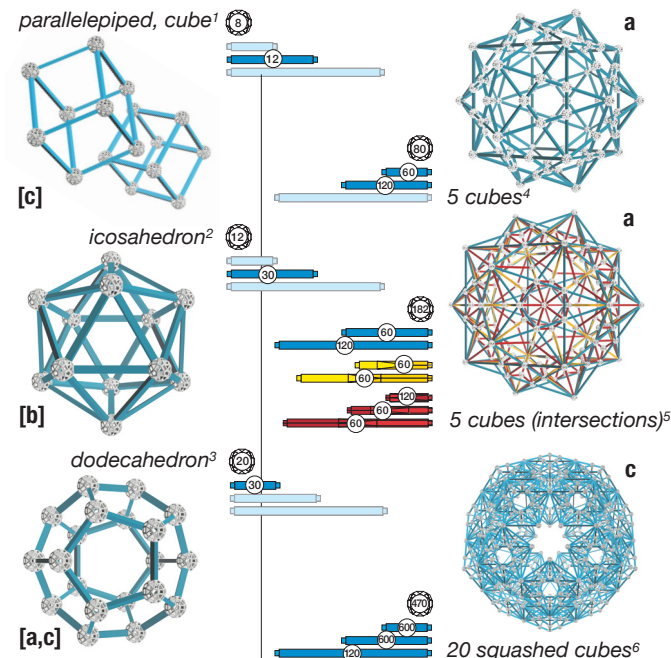
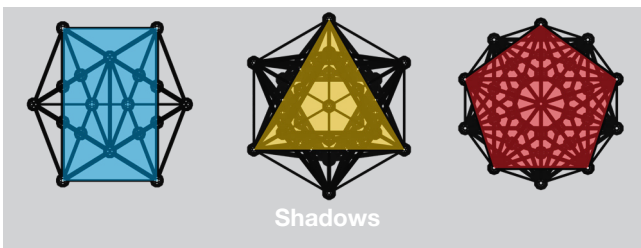
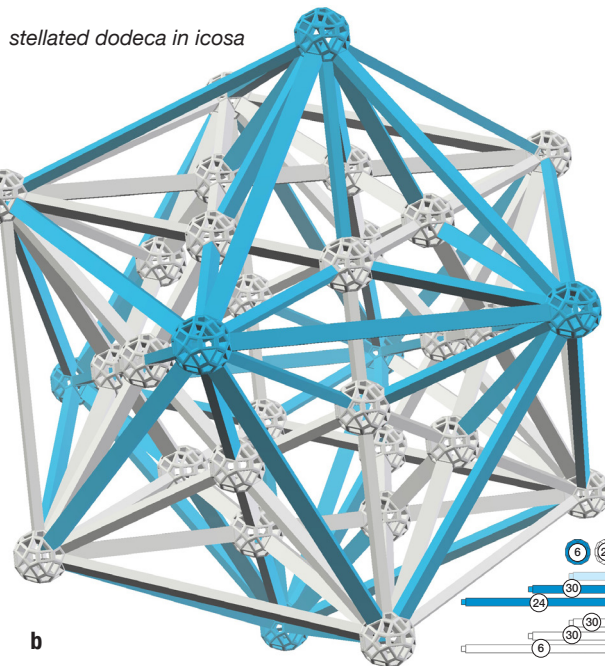
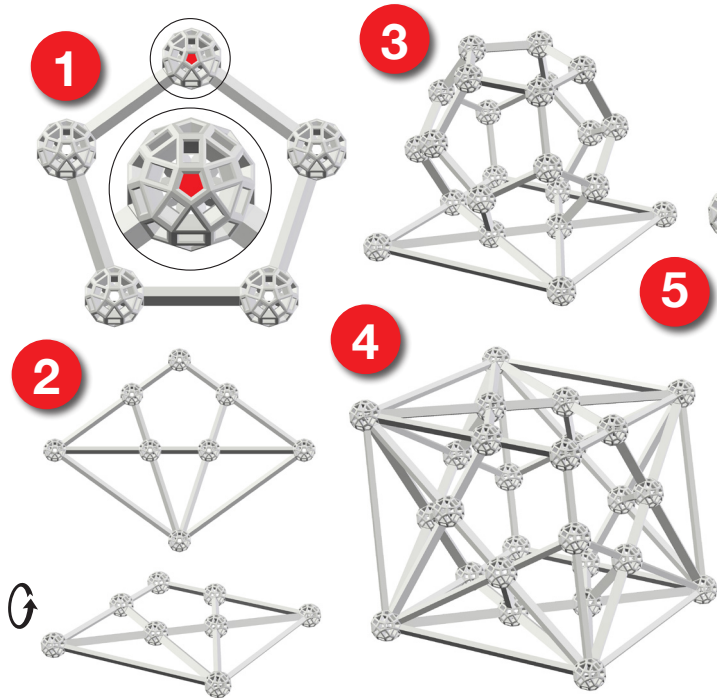
f

Clark Richert’s “Star Pants” (g), a single (non-binary) tile that he hoped would tile the plane infinitely and quasi-periodically.



g

In another hyperplane, at a hyper-angle to our own, Amina’s cube isn’t squashed at all. Since its edges are blue lines, it’s projected from a 15-dimensional hypercubic lattice, where all 15 blue lines are perpendicular to each other.



this kit makes these models → you'll need more parts to make these models

- (1) Creator Basic kit (123 parts), (2,3) Creator 1 kit (246 parts), (4) Creator 3 kit (738 parts), (5) STEAM kit (1909 parts), (6) please email paulh@zometool.com for a quote

Download free vZome software at vzome.com and never run out of parts. Heartfelt thanks to Scott Vorthmann and friends!
These images powered by vZome.



Even more thanks to Steve Rogers, David Booth, Mike Stranahan, Bob Nickerson, Dale Hess, Hildebrandt family, Donna Alpaugh, Jennifer Archuleta and Crystal B.

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If it works, it works perfectly. Although you may bend a strut to insert it in a tight spot, finished models are "stress-free." no bending, twisting or fudging necessary!

Take it apart, don't break it apart. Squeeze balls off struts with your thumb and forefinger.

projected trajectory →

a Zometool lollipop

