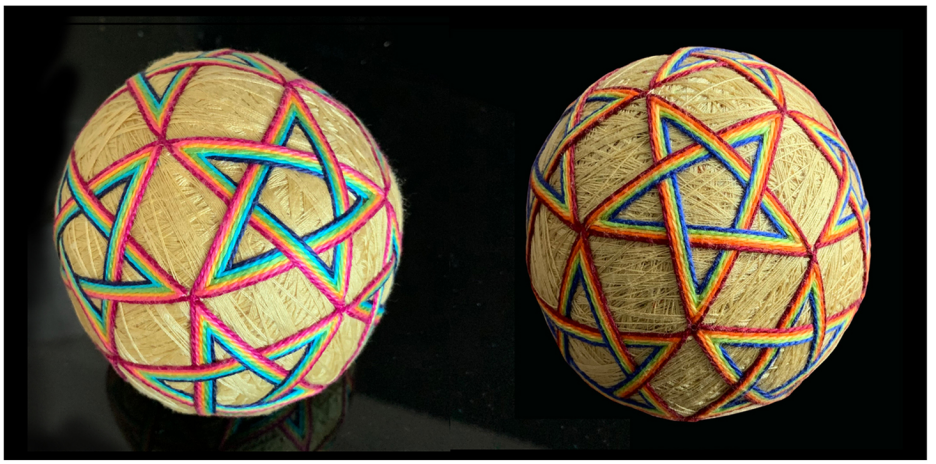
Ingrid Daubechies
Professor of Mathematics
Duke University
Durham, North Carolina
Mathemalchemy.org

Participating in the collective mixed-media math/art project Mathemalchemy (see mathemalchemy.org), I learned to make temari balls. Afterwards, remnants of unused materials remained -- in particular, a large collection of fine thread spools to wrap the colorful balls (mari) before embroidery turns them into temari, as well as spherical styrofoam cores of different sizes. I am now using this up by making more balls for mathematical friends. The styrofoam cores have run out; instead I now use cores of crumpled clean paper, leading to slightly less symmetric shapes, more sustainable at heart.



Twelve Triply Touching Stars, Twice, 3.25 X 7.5 X 3.25 in,
Styrofoam, crumpled paper, wool yarn, colored thread, 2024

2 balls, different cores: perfect sphere (styrofoam), or crumpled paper. Each core wrapped in about 1/4 inch of wool yarn (sourced from the Durham Scrap Exchange), then covered with colored thread. Geometry now steps in: 1st round: place 6 pins, in 3 antipodal pairs, at the vertices of an octahedron; 2nd round: 8 pins, in the centers of the 8 rectangular spherical triangles from 1st round; 3rd round: split each of the six 1st round pins into a pair so the 12 new pins together with the 8 pins of 2nd round give the vertices of a dodecahedron. Then embroider a 5-pointed star in each pentagon.