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Folding harmony - Polyhedra and compounds from edge modules

Polyhedra consist of faces that are linked together over edges. The endpoints of the edges form the vertices of the polyhedra. An edge module should have the following characteristics: the edge or a part of the edge, parts of the faces, that build the edge and link possibilities with other modules at the endpoints of the edge to build the vertices of the polyhedron. All this has the module for the tetrahedron, first presented by Francis Ow. But that is just the beginning. I present you the possibilities that arise, if the angle of the pocket and the angles of the flap will be modified.

In the music, the harmony is created through the use of tones, that are in a ratio of whole numbers. The harmony and beauty of the polyhedra arise from the use of ratios of whole numbers during the folding of the edge modules. With this it is possible to fold every known polyhedron in the open framed form. Compounds of polyhedra, e.g. the compound of two tetrahedra, have often intersections of the edges. This can be overcome through separate folding of the edges up to the intersection points.

I use for the modules always rectangular paper with a well defined length and width. It can happen, that a polyhedron is built out of five different modules, that have five different paper measurements, which also depend from each other. I show you with the help of a self-developed 3D computer model, that it is not necessary to use a pocket calculator to determine the paper measurements.

