

Extending Special to General Snapology

by Heinz Strobl

Special Snapology uses tape folded into squares to build two types of modules. Polygonal scaffolding modules are snapped together by hinge modules to build a great variety of polyhedra. This approach can be extended in various aspects leading to *General Snapology*.

Creating Surfaces

- A new type of hinge module grants stable connections between the scaffolding modules at arbitrary hinge angles.
- Internal angles in polygonal scaffolding modules with more than three sides are not fixed in general and result in flexible polygons. Polygons with distinct internal angles can be made up of acute angle triangles using a new type of connecting module that restricts hinge angles to 0° .
- Polygons (e.g. triangles) with arbitrary side lengths allow the construction of virtually any definite surface that can be embedded in 3D space.
- Curvature and flexibility can be controlled by arranging the hinges systematically, creating unusual and astonishing bending properties.

Creating Solids

A rhombic dodecahedron, for example, can be made flexible or rigid. The rigid form is referred to as RhoDoDe.

- RhoDoDe's can be connected by sharing the modules that make up the rhombic faces of two adjacent RhoDoDe's.
- The process of connecting RhoDoDe's can be repeated in many ways resulting in various structures.
- RhoDoDe's can be connected to fill 3D-space leaving no gaps.
- Whereas sculptors remove the unwanted parts of the raw material, RhoDoDe-artists add the wanted parts to their works of art. But both are equally free to build any shape inspired by their creativity.



RhoDoDe

Applications

Both, the surface and the solids approach lead to forms, structures and patterns with intrinsic beauty that may be used in technology, architectural design and art. Examples will be shown.