Action Modular Origami

Tung Ken Lam

www.foldworks.net
Lancaster, United Kingdom

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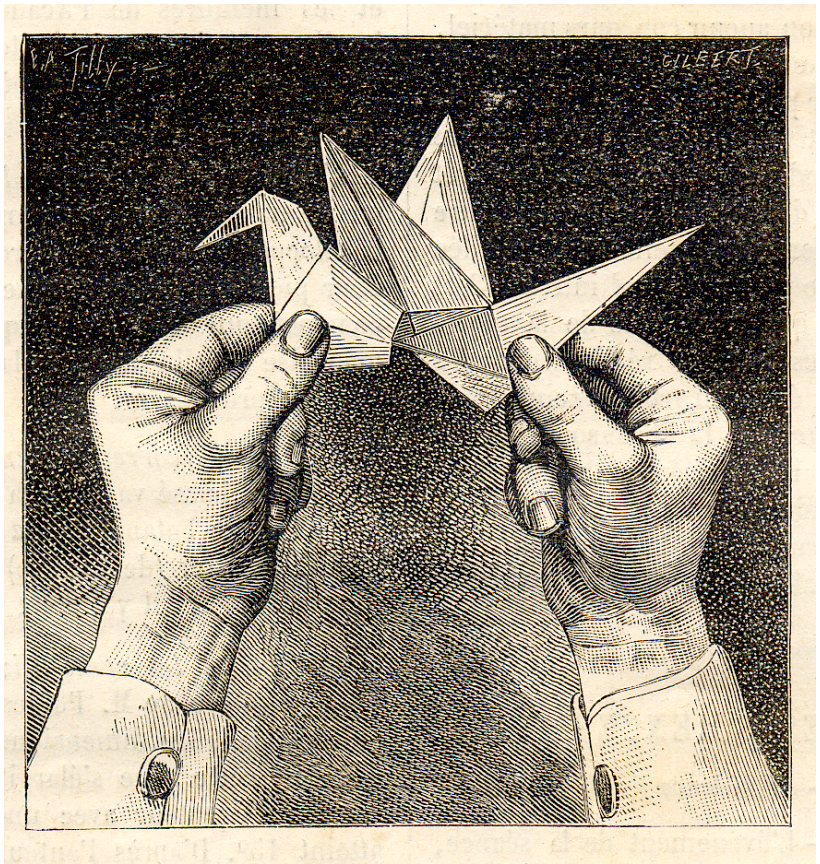
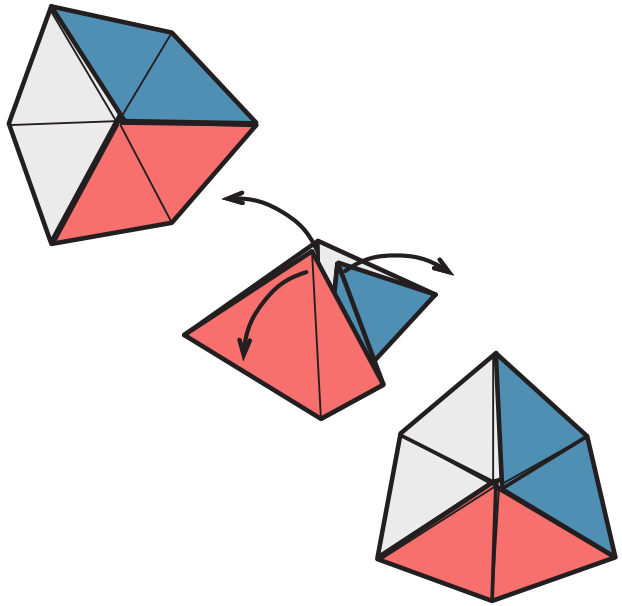
Outline

Folded paper that moves or changes shape

Traditional
Flapping Bird



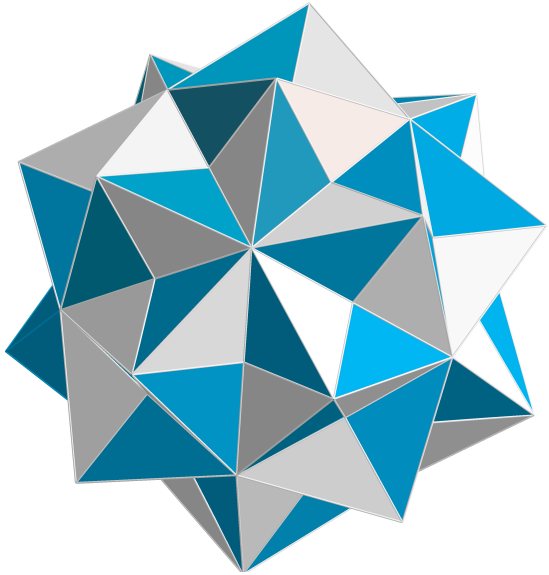
Modern
Trihexaflexagon (Stone)



Several folded units joined into a structure

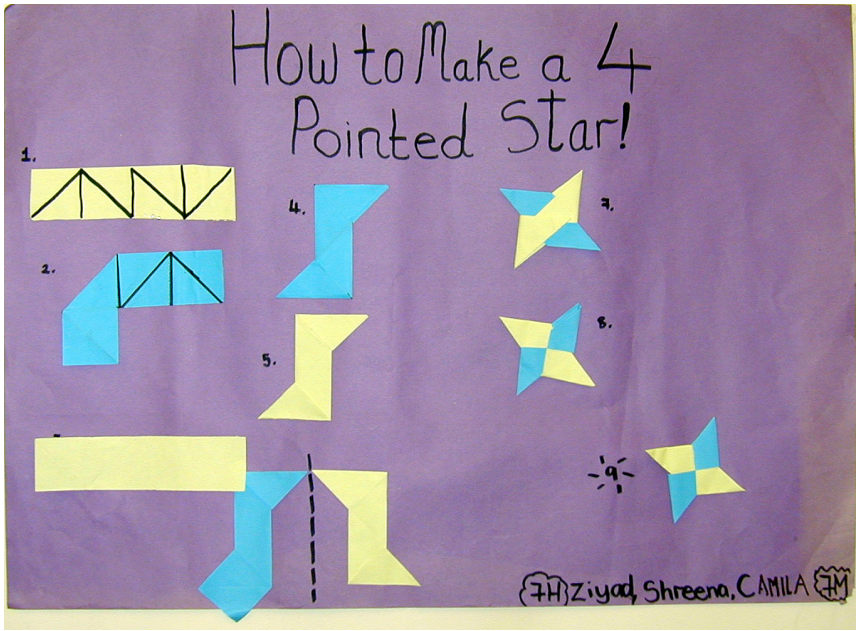
Traditional
Playing card cube

Modern
Sonobé unit (variation)

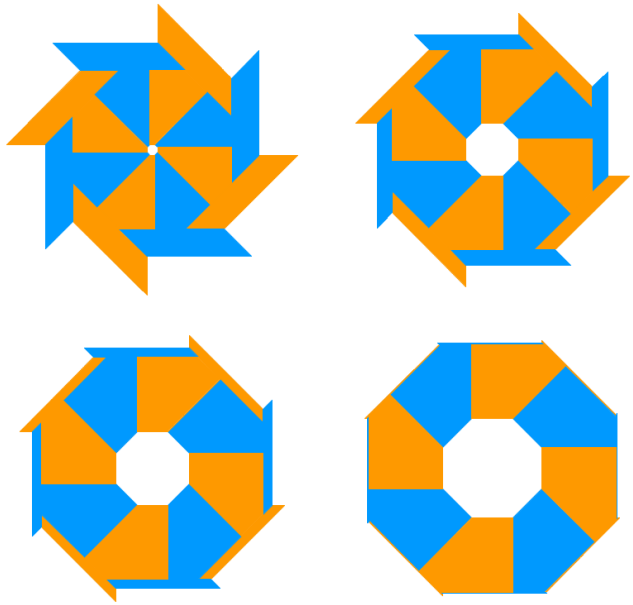


Action modular origami

Traditional
Shuriken

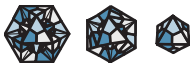


Modern
Magic Star (Neale)



Development

3D Shapeshifters



57 Cube-Regular Dodecahedron
56 Skeletal Cube-Rhombic Dodecahedron
55 Flexicuboctahedron
54 Collapsoid
53 Petrie-Coxeter Honeycomb
52 Jitterbug
51 Radioactive Ball

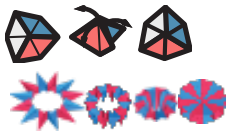
Spinners & Wheels

47 Octa Slider 3D Wheel
46 3D Magic Star
45 Octagon Waterwheel
44 Beak Unit
43 WXYZ
42 Skeletal Octahedron
41 3-piece Square Spinner

Magic Wallet Series

37 Wobbling Wall
36 Fluxicube: Rotating Ring of Six Cubes
35 Six Cube Flexagon
34 Four Cube Flexagon
33 Four Square Flexagon
32 Jacob's Ladder
31 Magic Wallet

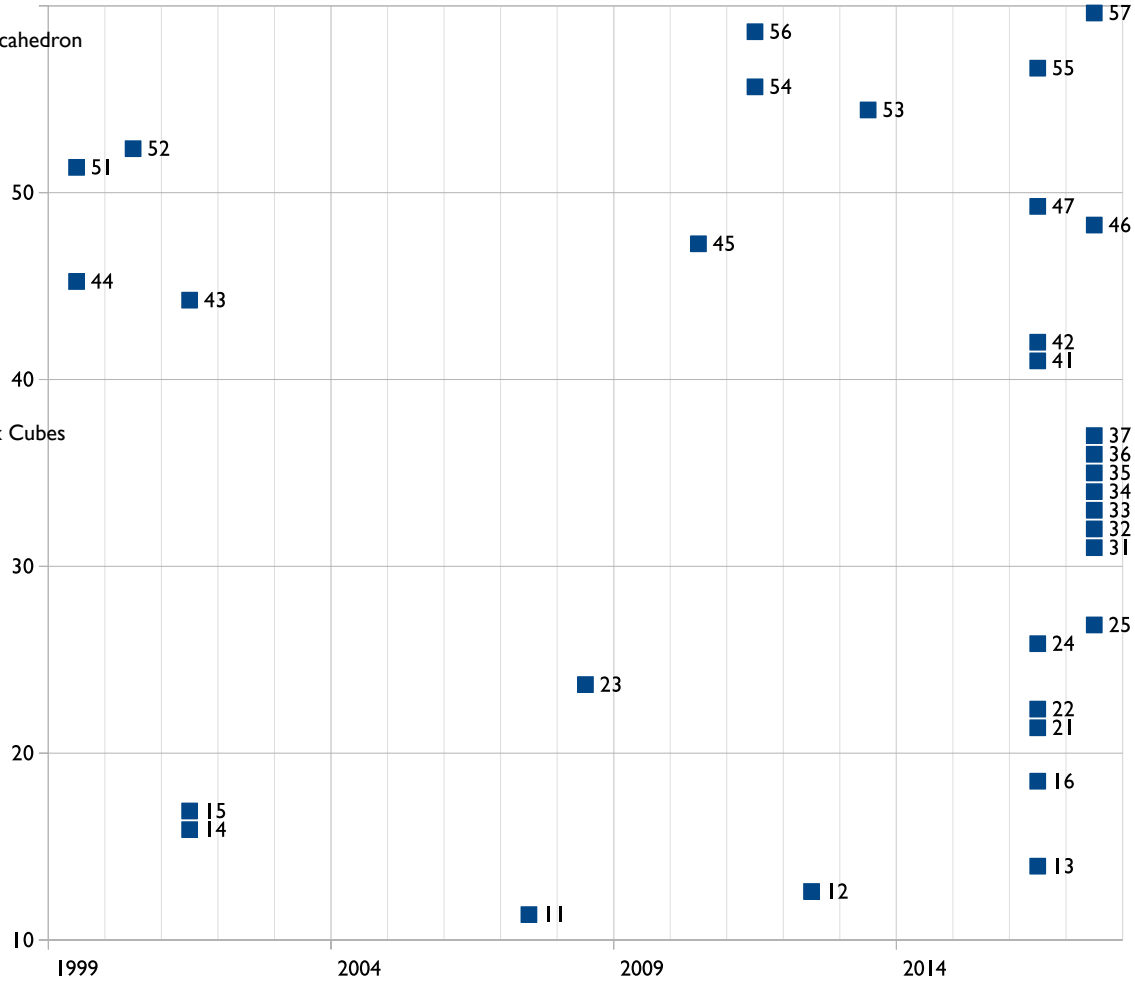
Flexagons & Rotating Rings



25 Double Skew Tetrahedra
24 Multiform Flipper
23 12-piece Carousel
22 Rotating Octagram Ring
21 3-piece Trihexaflexagon

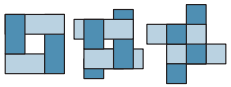
Sliders

16 Ribbon Slider
15 Hexagonal Slider
14 Square Slider
13 Shaky Shuriken Slider
12 4-piece Harlequin Slider
11 Magic Star: spiral version



Six types of action modular origami

Sliders

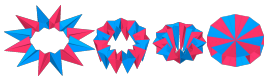


are flat models that expand and contract to change shape.

Flexagons

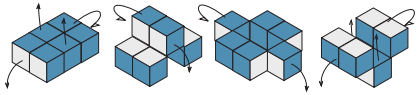
Fold to expose previously hidden faces.

Rotating Rings



turn inside out in special ways.

Magic Wallet Series

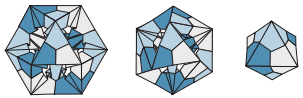


models use a two-way hinge to make other action models.

Spinners and Wheels

Blow or spin on a flat surface.

3D Shapeshifters



Smoothly transform from one 3D shape to another.

For Further Reading

- Try folding some from
  `www.foldworks.net/diagrams`
- View animations at
  `www.foldworks.net/action-modular-origami`
- Read and use
  Learning Mathematics with Origami, S. Pope and T.K. Lam, Association of Teachers of Mathematics, 2016
- Read and use (includes teacher's notes)
  Action Modular Origami to Intrigue and Delight (Tarquin, 2018)