Origami Modulaire

un catalogue non exhaustif

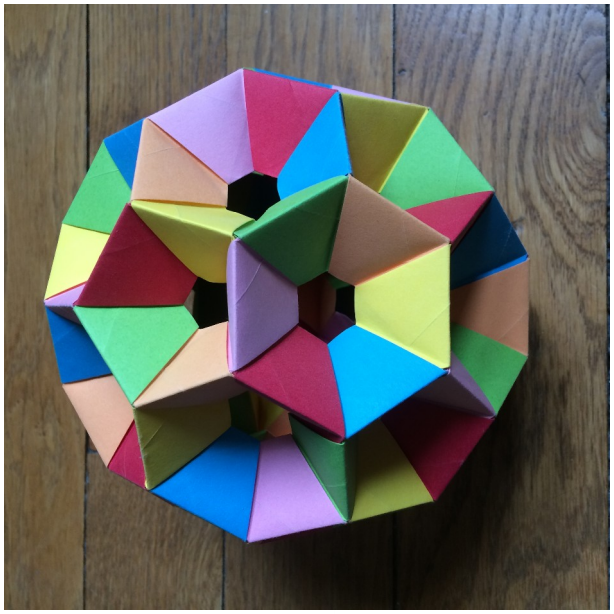
Little turtle
Sonobe Unit
Cubes en carte de visite
PHiZZ unit
Bascetta Star module
Becker 45° module
Becker Trinity module
Rose unit
Triangle Edge Module
Penultimate edge unit
Tétraèdre en tickets de métro

Scannez le QRCode pour téléchargez ce document

https://asliceofcuriosity.fr/

Little Turtle

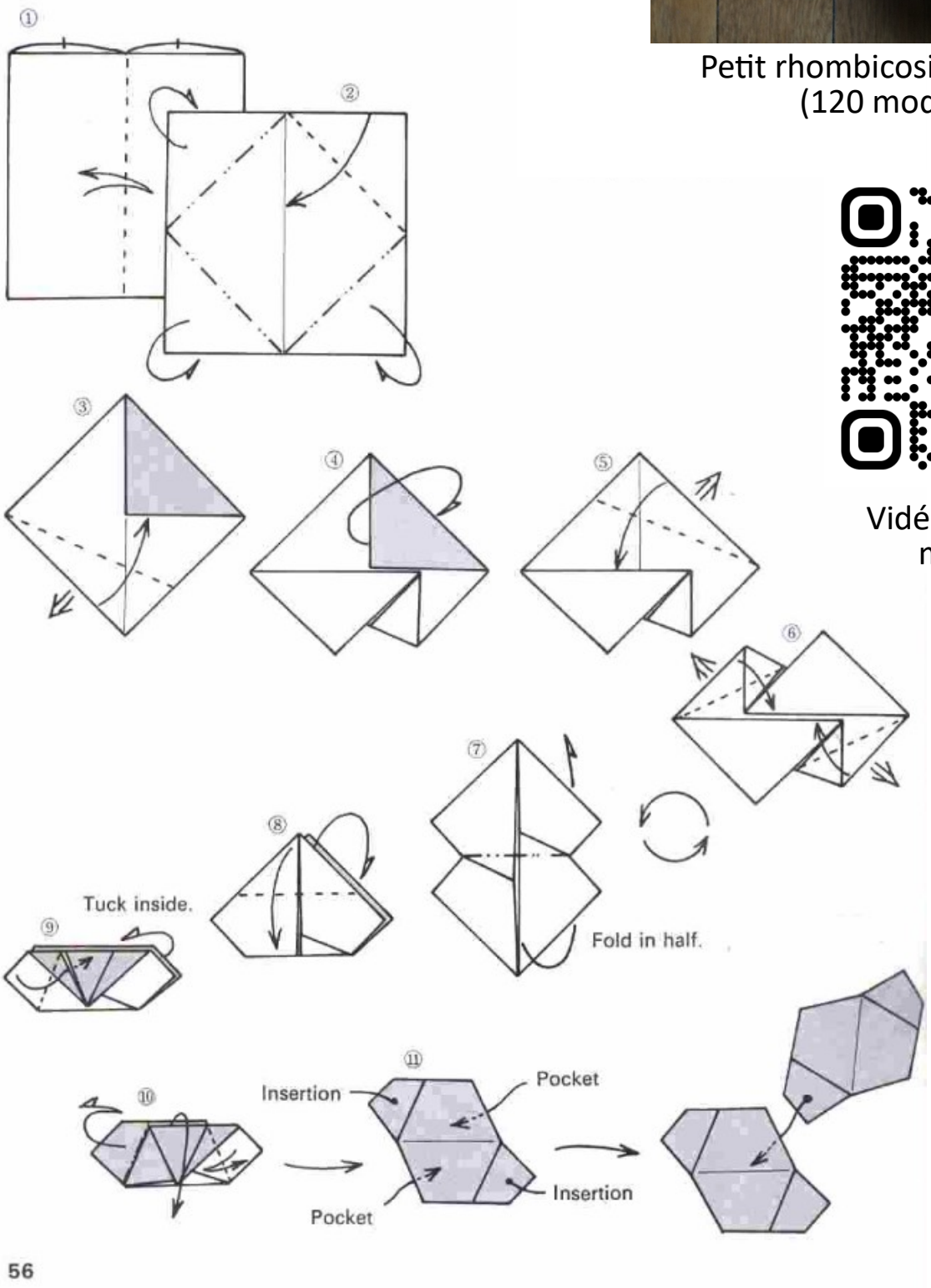
Nom du module : Little Turtle
Créatrice : Tomoko Fuse
Ratio de la feuille : 1:1



Petit rhombicosidodécaèdre
(120 modules)

Vidéo : Pliage et montage

Little Turtle



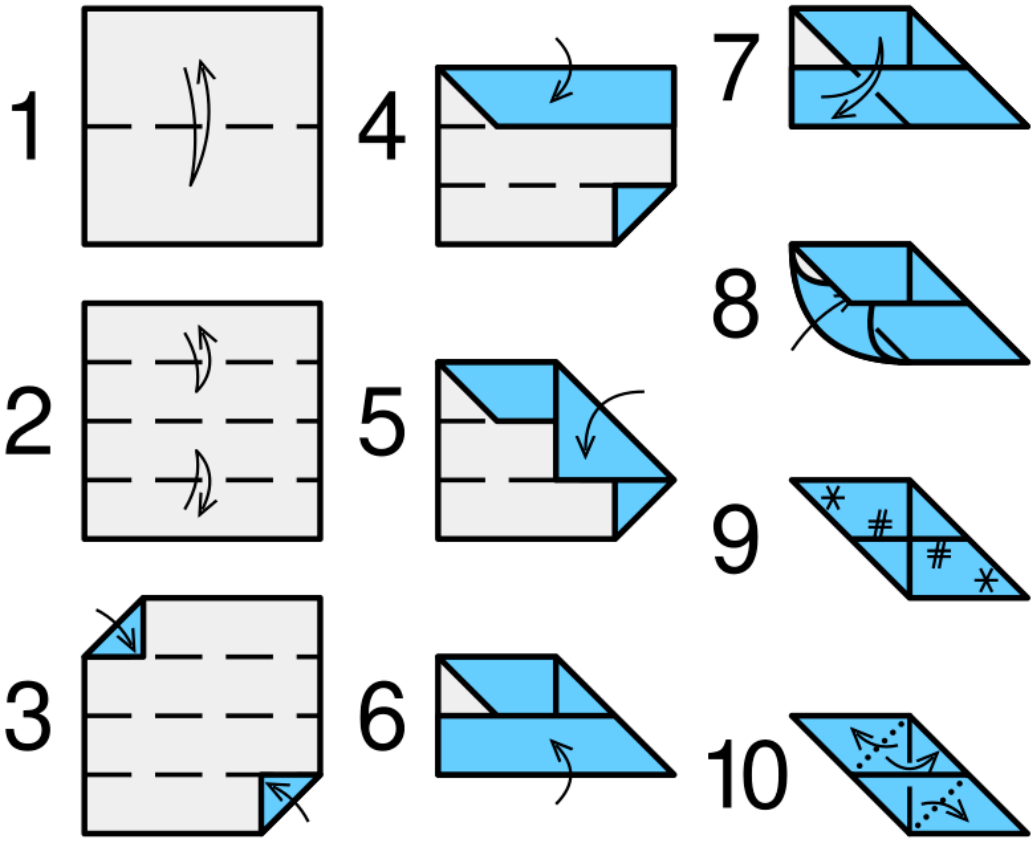
Sonobe Unit

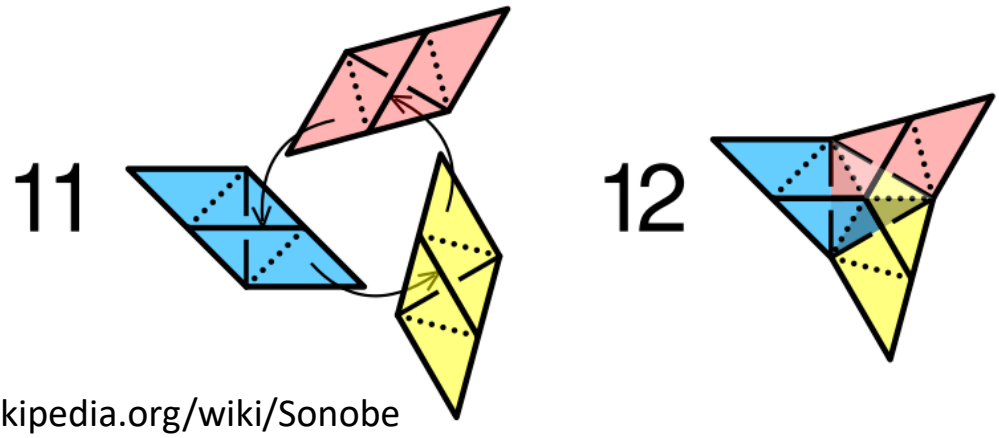
Nom du module : Sonobe Unit
Créateurs : Toshie Takahama, Mitsunobu Sonobe
Ratio de la feuille : 1:1

Icosaèdre (30 modules)

Vidéo : Assemblage

Vidéo : Pliage





Source :
https://en.wikipedia.org/wiki/Sonobe

Cubes en carte de visite

Nom du module : Business card cube unit
Créateur : N/A
Ratio de la feuille : optimale entre 3:2 et 2:1

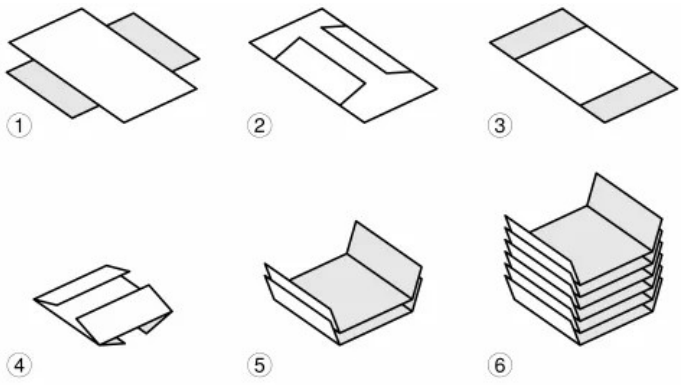
Remarque : Il faut 6 modules pour faire un cube et 6 autres pour le recouvrir entièrement

Site web : How to make business card cubes

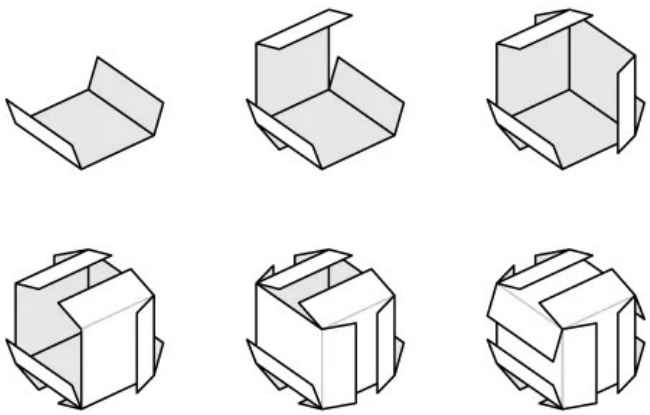
The Business Card Cube

Vidéo : Pliage et assemblage

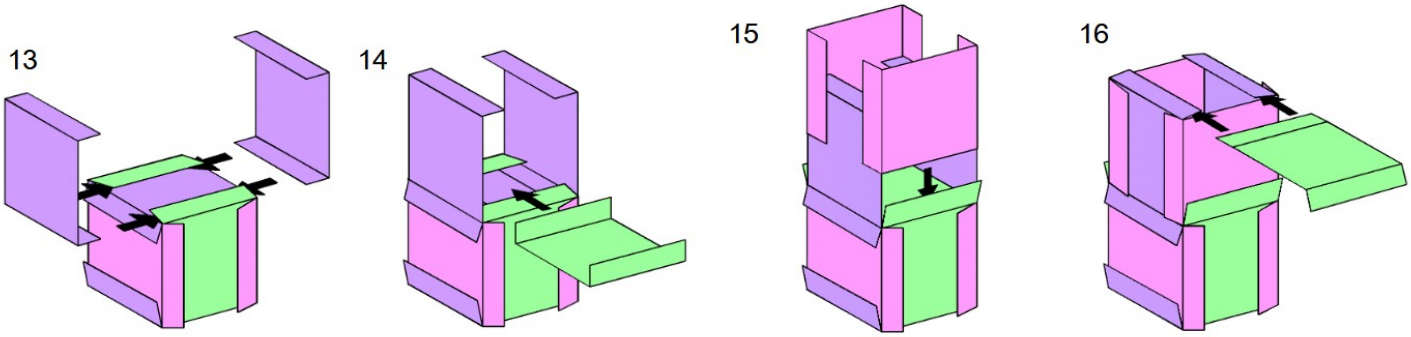
Pliage



Assemblage



Connection



13. Add two more cards underneath the flaps of the existing cube.

14. Slide the third card into position.

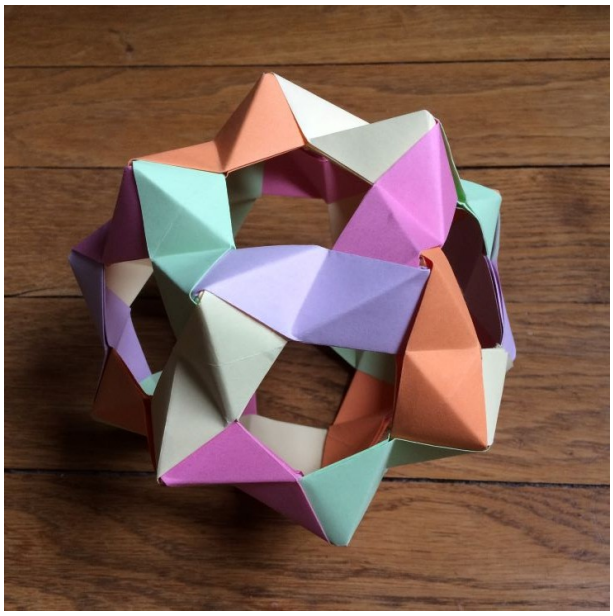
15. Add two more cards like this.

16. Slide the last card into place to complete the second cube.

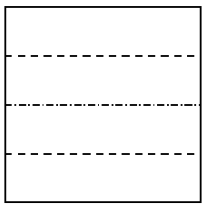
PHiZZ unit

Nom du module : Pentagon-Hexagon Zig-Zag
Créateur : Tom Hull
Ratio de la feuille : 1:1

Remarque : A n'utiliser que si la structure ne comporte que des pentagones et des hexagones

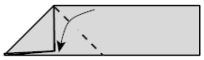


Dodécaèdre (30 modules)

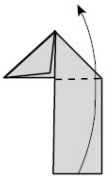


Accordian pleat the paper into fourths.

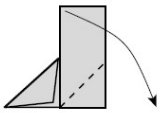
Fold top left corner down.



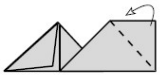
Fold the right edge of the strip down to meet the folded edge.



Fold the strip up, making the bottom flush.



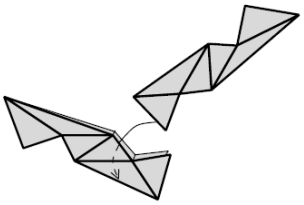
Fold the strip down to the right.



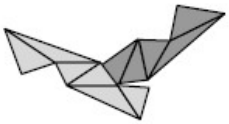
Fold the upper right corner down behind the unit.

Vidéo : Pliage et montage

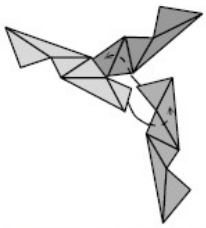
The completed unit.



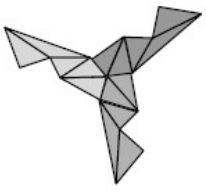
Insert one unit into the other one from the side so that the creases overlap.



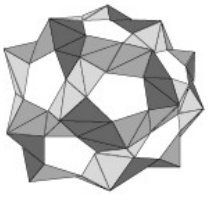
The two units are joined.



Insert a third unit into the second unit in the same manner. Tuck the first unit into the third unit.



The completed group of three units.



30 PHiZZ units make a dodecahedron. You can also use PHiZZ units to make larger buckyballs, tori, and other surfaces

Bascetta Star module

Nom du module : Bascetta Star module
Créateur : Paolo Bascetta
Ratio de la feuille : 1:1

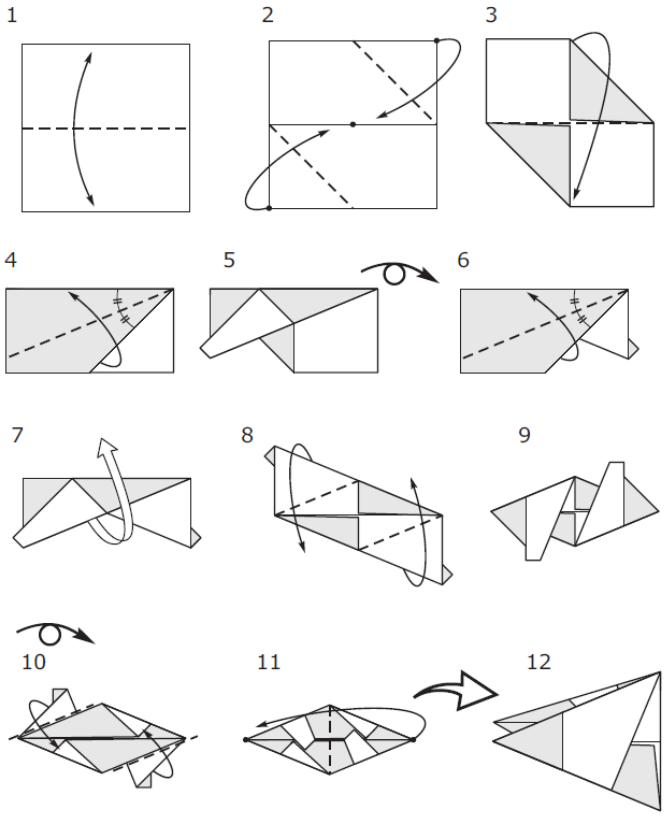
Remarque : Mon préféré

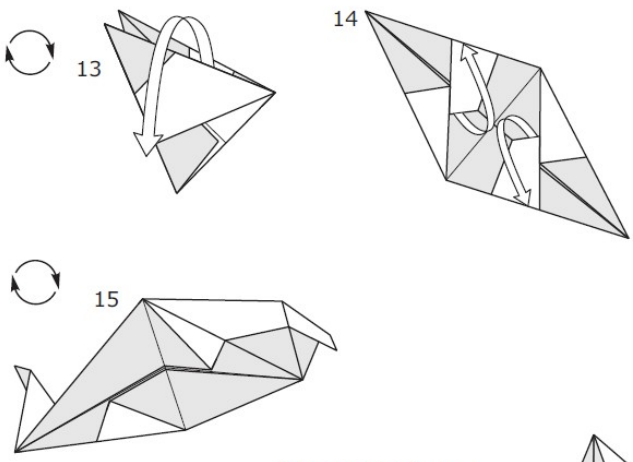
Vidéo : Pliage et montage

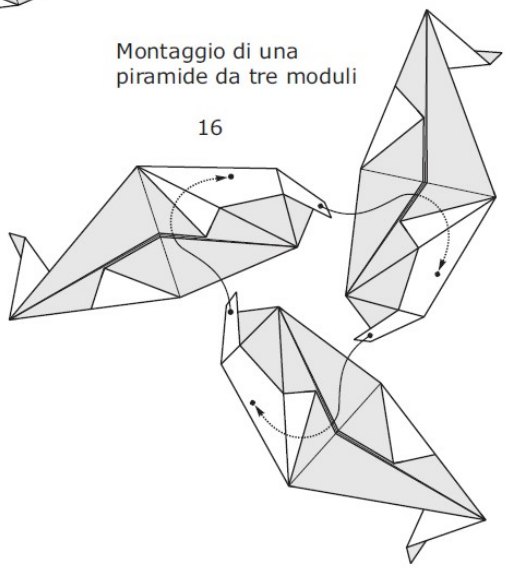
Source : Diagramme

Bascetta Star

Modello di Paolo Bascetta
Diagrammi di Francesco Decio







Eckhard Becker 45° module

Nom du module : Bascetta Star module
Créateur : Eckhard Becker
Ratio de la feuille : 1:1

Remarque : une version simplifiée du module Bascetta

Snub Pentagonal Prism

Vidéo : Pliage et montage

Eckhard Becker Trinity module

Nom du module : Trinity module
Créateur : Eckhard Becker
Ratio de la feuille : 1:√3=1.73

Remarque : les triangles sont équilatéraux

Cupola Augmented Truncated Cube

Vidéo : Pliage et montage

Rose Unit

Nom du module : Rose unit
Créatrice : Tomoko Fuse
Ratio de la feuille : 1:2

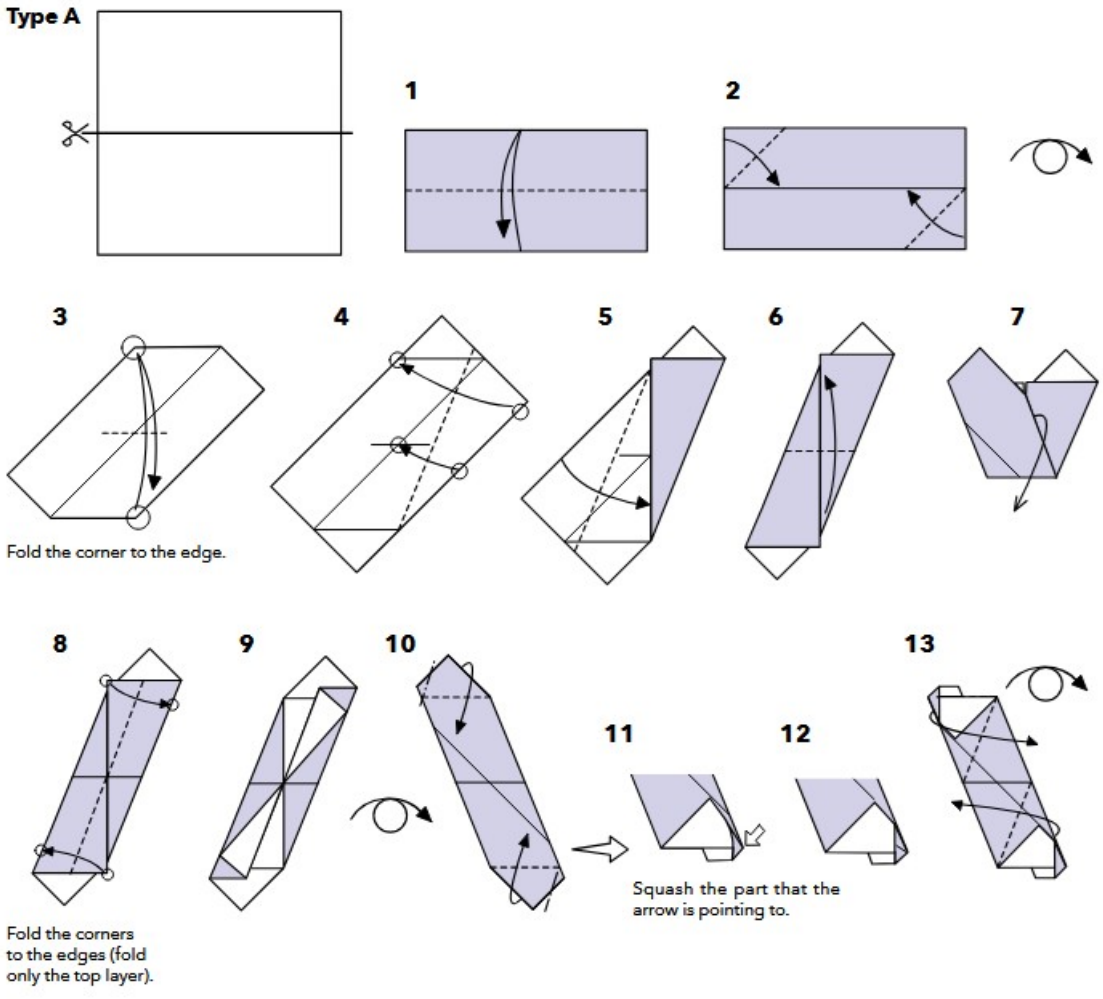
Remarque : l'idée est la même que pour Bascetta mais le design est différent

Vidéo : Pliage et montage

How to Make Basic Rose Units A and B

Use 6 x 3-in (15 x 7.5-cm) paper

These units are made with square paper that's been cut in half. When assembled, a rose-like pattern can be seen at the vertices. The pattern can also be modified. In addition, by mixing them with the "Mirror-fold units" described on page 23, you can construct a football shape (see page 40).



Triangle Edge Module

Nom du module : Triangle Edge Module
Créateurs : Lewis Simon, Bennet Arnstein
Ratio de la feuille : 2:1

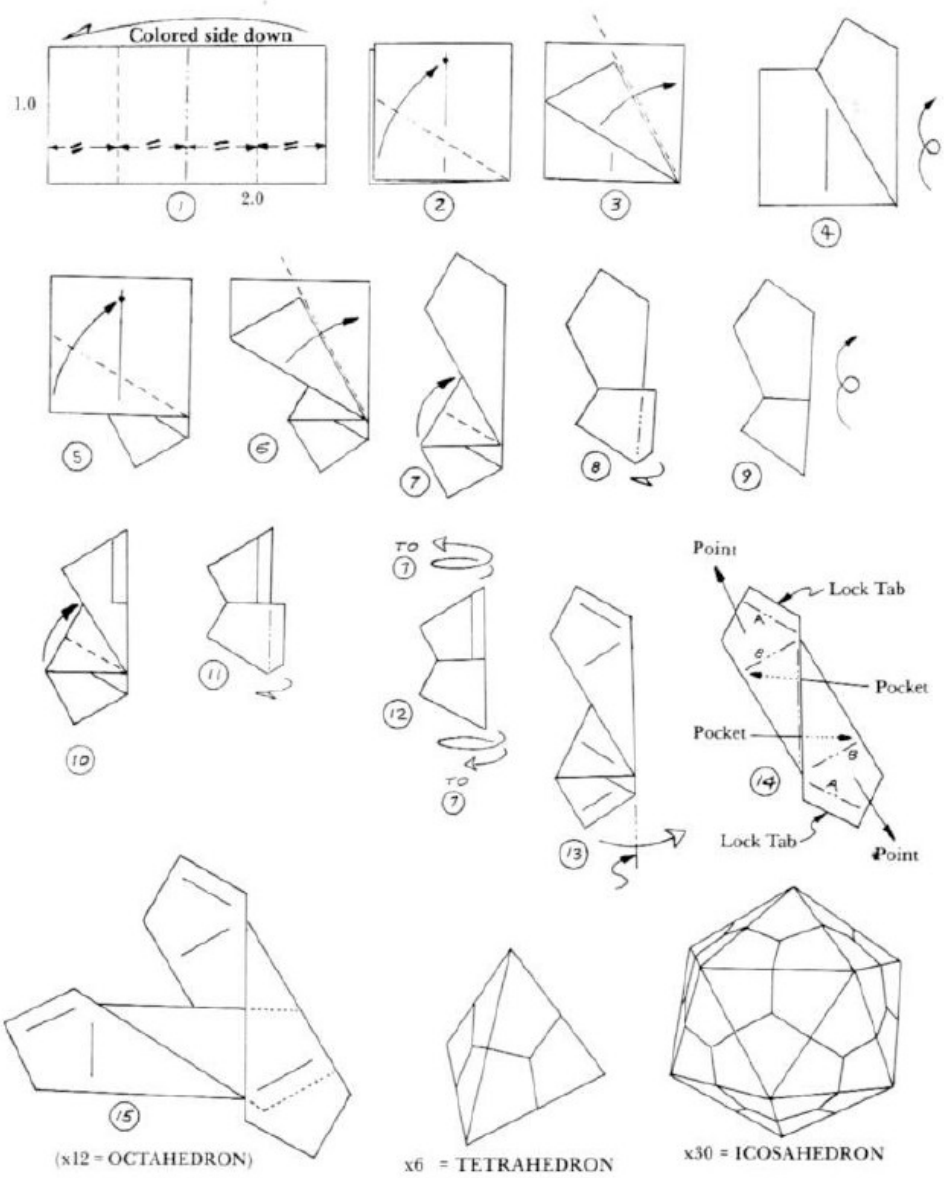
Remarque : ne fonctionne que pour des faces triangulaires donc pour des deltaèdres

Icosaèdre (30 modules)

Vidéo : Pliage et montage

Triangle Edge Module
by Lewis Simon and Bennett Arnstein

Unfold mountain crease made in FIG. 1. Crease A on entering module lines up with crease B on receiving module. Crease B on entering module lines up with mountain crease along diagonal seam on receiving module. This module makes polyhedra with flat equilateral triangle faces. The module corresponds to an edge of the polyhedron. Most polyhedra will require the use of the lock tab. If it is not needed, fold it flat against the point tab.



Penultimate edge unit

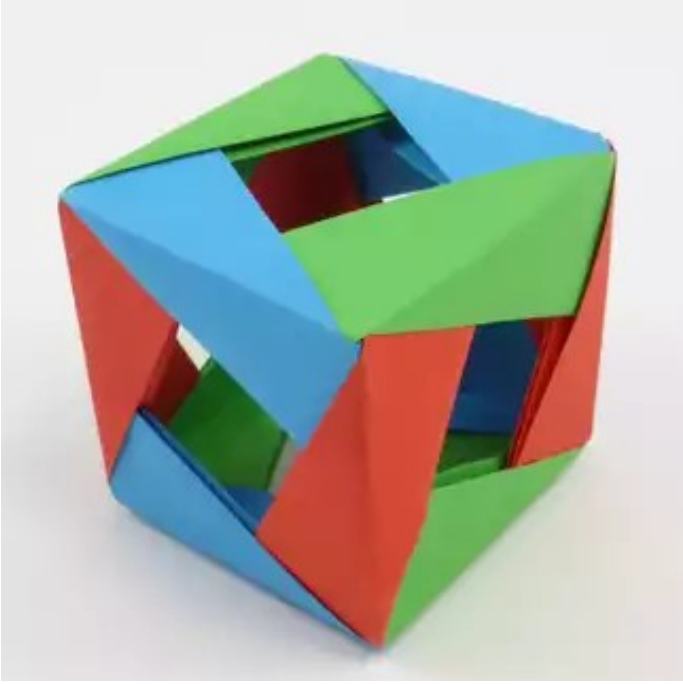
Nom du module : Penultimate edge unit
Créateur : Robert Neale
Ratio de la feuille : 4:3

Remarque : C'est une famille de modules en fonction de la face à créer.

Vidéo : Pliage et montage

Source : Diagramme

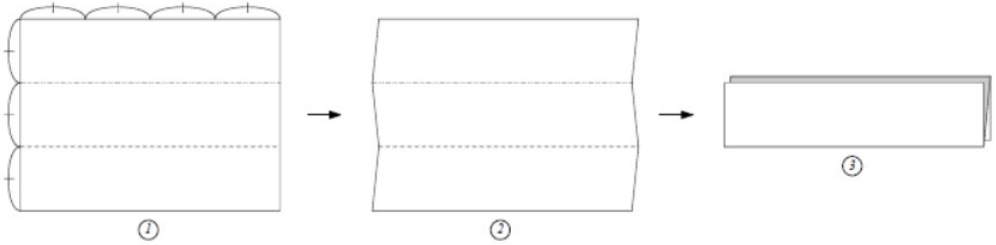
Dodécaèdre (30 modules)



Cube (12 modules)

Pentagon Module (108 Degrees)

Start with a 4x3 rectangle, and collapse like an accordian:



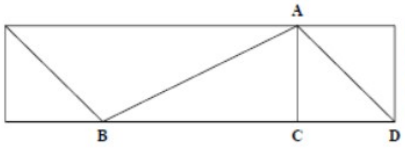
Fold opposite corners in -- use only the top layer -- and unfold

Fold along the dotted line and unfold

Re-fold the corners, this time folding all layers

The final piece:

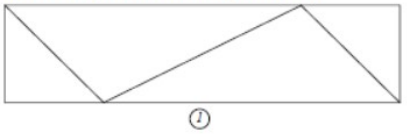
Why?



BC = 2
AC = CD = 1
BAC = atan(BC/AC) = 63.44
CAD = 45
BAD = 63.44+45 = 108.44

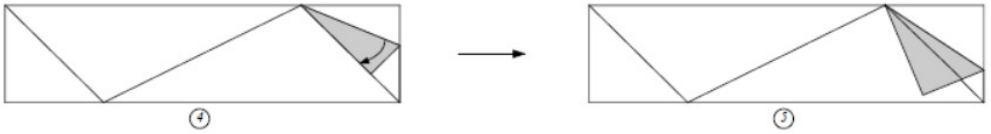
Hexagon Module (120 Degrees)

Get to step 8 of the Pentagon module:



Fold the top to the diagonal line (Fold the top layer only):

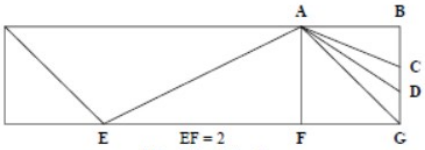
Fold this new crease to the diagonal, opening as you fold:



Fold all layers along this new crease:

Open up. Final fold:

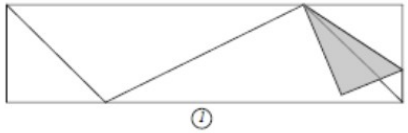
Why?



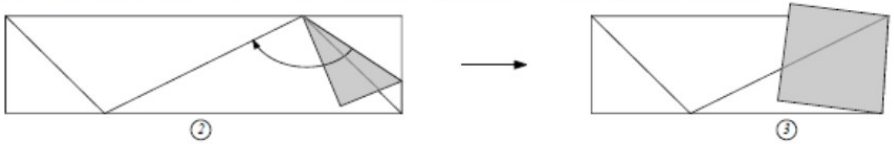
EF = 2
AF = AB = BG = 1
EAF = atan(EF/AF) = 63.44
GAF = 45
GAC = 45/2 = 22.5
DAC = 22.5/2 = 11.25
EAD = 63.44 + 45 + 11.25 = 119.69 (almost 120)

Triangle Module (60 Degrees)

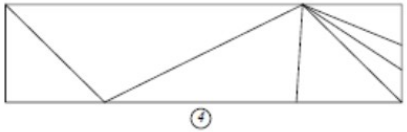
Get to step 5 of the Hexagon module:



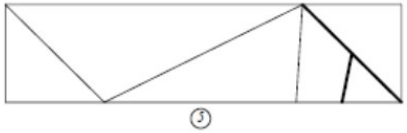
Fold the entire module so that this newly created crease matches up with the large crease:



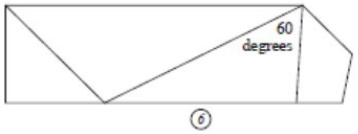
Unfold back to the rectangle:



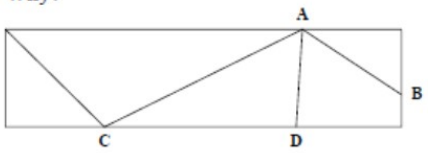
Cut along the thick lines (one of them is not along any crease lines)



The final piece:



Why?

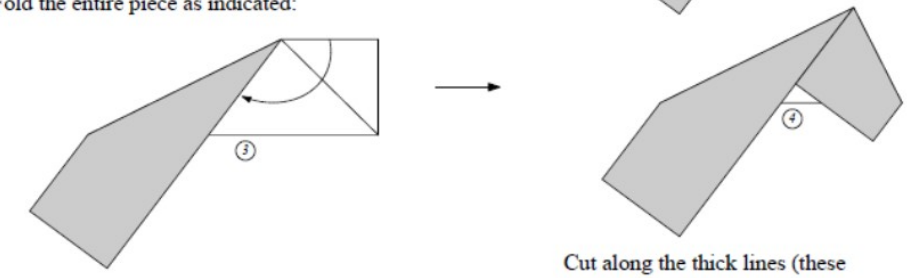


CAB = 119.69 degrees (from the Hexagon module)
CAD = CAB/2 = 59.85 (almost 60)

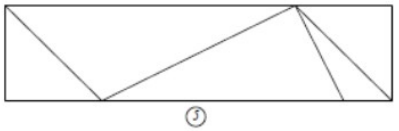
Square Module (90 Degrees)

Get to step 8 of the Pentagon module, and fold along the long crease

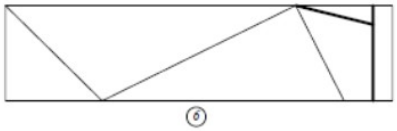
Fold the entire piece as indicated:



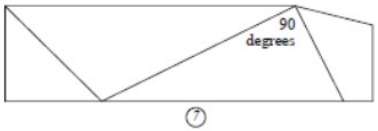
Unfold back to the rectangle:



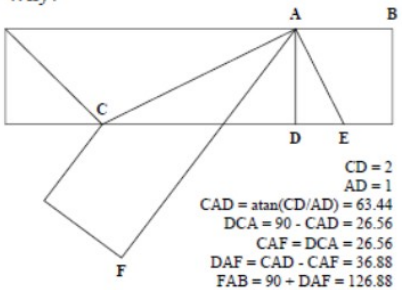
Cut along the thick lines (these are not along any crease lines)



The final piece:



Why?



CD = 2
AD = 1
CAD = atan(CD/AD) = 63.44
DCA = 90 - CAD = 26.56
CAF = DCA = 26.56
DAF = CAD - CAF = 36.88
FAB = 90 + DAF = 126.88
FAE = FAB/2 = 63.44
CAE = FAE + CAF = 90

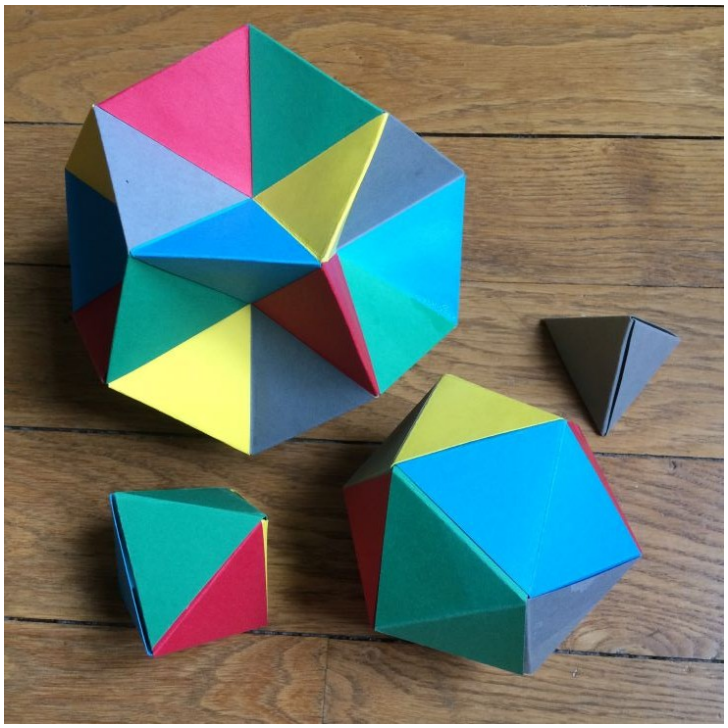
Tétraèdre en tickets de métro

Nom du module : ???
Créateur : Tomoko Fuse ?
Ratio de la feuille : 13:6

Remarque : on peut également réaliser l'octaèdre, l'icosaèdre et le dodécaèdre mais avec les oreilles à l'extérieur ou de quoi coller car la construction n'est pas très stable.

Vidéo : Pliage et montage

TODO change video

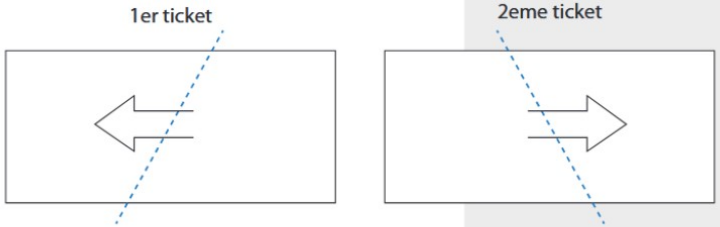


Dodécaèdre (30 modules), Icosaèdre (10 modules), Octaèdre (4 modules), Tétraèdre (2 modules)

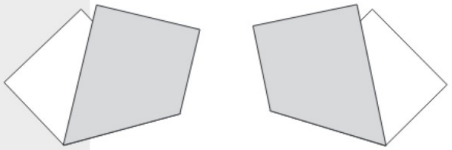
Pour commencer nous devons construire un **tétraèdre**
pour cela nous allons plier 2 tickets de transport
(ou bien imprimer un des modèles à découper en page 3 à 6)

65 mm x 30 mm

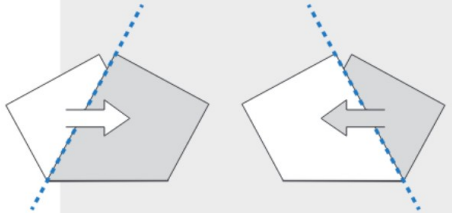
1 Plier 2 tickets, en suivant les plies en pointillé.



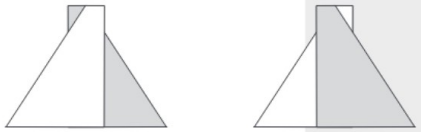
2 Vous obtenez le résultat suivant.



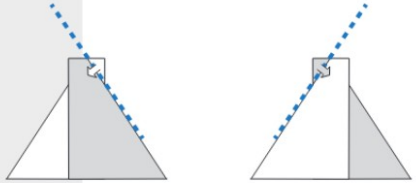
3 Rabattre ensuite les 2 volets pour chaque ticket.



4 Les deux tickets ressemblent maintenant à des entonnoirs.

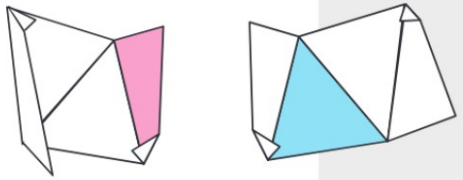


5 Rabattre les 2 coins au sommet.

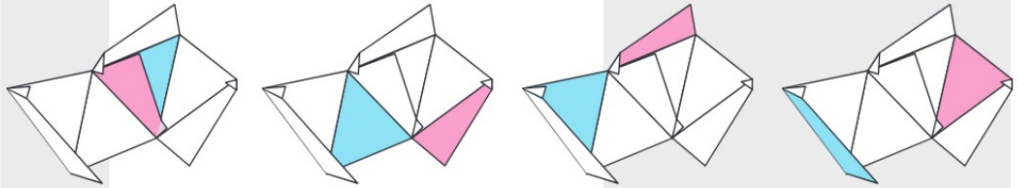


6 Nos 2 tickets ont maintenant la silhouette de triangles équilatéraux.

7 Dépliez maintenant légèrement les 2 tickets.
Identifiez pour chacun d'entre eux la partie colorée sur la figure.



8 On peut reconnaitre un triangle rectangle (rose) et un triangle équilatéral (bleu).
Posez le triangle rose sur le triangle bleu.



PDF :
Construction d'un object fractale
LA PYRAMIDE DE SIERPINSKI
Par l'association Scienceouverte.fr

Ressources

- https://origami.kosmulski.org