## Paper Models of Polyhedra

Gijs Korthals Altes



Polyhedra are beautiful 3-D geometrical figures that have fascinated philosophers, mathematicians and artists for millennia

## Paper Models of Polyhedra

[^0]Other Polyhedra
Pentagonal Hexecontahedron
Pentagonalconsitetrahedron
Pyramid
Pentagonal Pyramid
Decahedron
Rhombic Dodecahedron
Great Rhombihexacron
Pentagonal Dipyramid
Pentakisdodecahedron
Small Triakisoctahedron
Small Triambic Icosahedron
Polyhedra Made of Isosceles Triangles
Third Stellation of the Icosahedron
Sixth Stellation of the Icosahedron
Seventh Stellation of the Icosahedron
Eighth Stellation of the Icosahedron
Ninth Stellation of the Icosahedron
Final Stellation of the Icosahedron
Prism and Antiprism
Triangular Prism
Pentagonal Prism
Pe ntagonal Antiprism
Triangular Prism
Octagonal Prism
Octagonal Antiprism
Pentagrammic Prism
Pentagrammic Antiprism
Hexagrammic Prism
Hexagrammic Antiprism
Twisted Rectangular Prism

Kaleidocycles
Hexagonal Kaleidocycle
Octagonal Kaleidocycle
Decagonal Kaleidocycle

Other Paper Models
Cylinder
Tapered Cylinder
Cone
Special Cones
"Matryoska house"
"Matryoska house" 50\%
Globe
Chevaux-de-frise























## Small Stellated Dodecahedron

On this page a model out of one piece On the next pages a model out of six pieces.
Fold the long lines backwards fold the short lines forwards




Octahemioctahedron
type 1


## Cubohemioctahedron



## Small Rhombidodecahedron

(small version)
Fold the dotted lines forwards
Fold the other lines

## Small Rhombidodecahedron

(large version)
Fold the dotted lines forwards
Fold the other lines

## A



B


C


D

$m$




Folds the lines between the triangles forwards. Folds the other lines backwards.


Great Stellated Dodecahedron
made out of one piece of paper.
Cut the lines between the long
and the short sides of the triangles.
Fold the long lines backwards and fold the short lines forwards.


Great Stellated Dodecahedron made out of two pieces of paper. Cut the lines between the long and the short sides of the triangles. Fold the long lines backwards and fold the short lines forwards.
This is piece one. On the next page is piece two.



## Great Stellated Dodecahedron

made out of five pieces of paper.
Cut the lines between the long
and the short sides of the triangles.
Fold the long lines backwards and
fold the short lines forwards.
$N=$ Next part P = Previous part


## Great Stellated Dodecahedron

made out of five pieces of paper.
Cut the lines between the long
and the short sides of the triangles.
Fold the long lines backwards and
fold the short lines forwards.
$N=$ Next part P = Previous part


## Great Stellated Dodecahedron

made out of five pieces of paper.
Cut the lines between the long
and the short sides of the triangles.
Fold the long lines backwards and
fold the short lines forwards.
$N=$ Next part P = Previous part


## Great Stellated Dodecahedron

made out of five pieces of paper.
Cut the lines between the long
and the short sides of the triangles.
Fold the long lines backwards and
fold the short lines forwards.
$N=$ Next part P = Previous part


## Great Stellated Dodecahedron

made out of five pieces of paper.
Cut the lines between the long
and the short sides of the triangles.
Fold the long lines backwards and
fold the short lines forwards.
$N=$ Next part P = Previous part












## Compound of Three Cubes

(Small version)
Fold the dotted liines forwards
Fold the other lines backwards


## Compound of Three Cubes

(Small version)
Fold the dotted liines forwards
Fold the other lines backwards





On this page a compound of five cubes


Instructions:

Cut and fold the piece(s) of paper.
Glue the part without tabs around it last.
This is the top part of piece F. This one opposites the center part of piece A.

Below an example of a part


Fold forwards

Fold backwards






## Compound of five Octahedra

If you use paper in five different colors
each octahedron has a different color

## Color 1



Compound of five Octahedra

Color 2


Compound of five Octahedra

Color 3


Compound of five Octahedra

Color 4


## Compound of five Octahedra

Color 5


















## Third Stallation of the Icosahedron

Fold the dotted lines forwards


## Third Stallation of the Icosahedron

Fold the dotted lines forwards
Fold the other lines backwards


## Sixth Stallation of the Icosahedron

(small version)

Fold the dotted lines forwards
Fold the other lines backwards

First glue part A
Glue the parts A-M on A


Parts B-M


## Sixth Stallation of the Icosahedron

(large version)
First glue the parts A until F
Glue the 12 other parts on the $A B C D E F$


Sixth Stallation of the Icosahedron
(large version)


Sixth Stallation of the Icosahedron
(large version)


A

Sixth Stallation of the Icosahedron
(large version)


A

Sixth Stallation of the Icosahedron
(large version)


A

Sixth Stallation of the Icosahedron
(large version)


Sixth Stallation of the Icosahedron (large)


Sixth Stallation of the Icosahedron (large)


Sixth Stallation of the Icosahedron (large)


Sixth Stallation of the Icosahedron (large)


Sixth Stallation of the Icosahedron (large)


Sixth Stallation of the Icosahedron (large)


Seventh Stellation of the Icosahedron


C


Seventh Stellation of the Icosahedron


Seventh Stellation of the Icosahedron


Seventh Stellation of the Icosahedron


## Seventh Stellation of the Icosahedron



Seventh Stellation of the Icosahedron

P


## Seventh Stellation of the Icosahedron

## S <br> 



Eighth Stellation of the Icosahedron
(Large version)
Lold dotted lines forwards
Fold other lines backwards


## Eighth Stellation of the Icosahedron

(Large version)
Lold dotted lines forwards
Fold other lines backwards


## Eighth Stellation of the Icosahedron

(Large version)
Lold dotted lines forwards
Fold other lines backwards


## Eighth Stellation of the Icosahedron

(Large version)
Lold dotted lines forwards
Fold other lines backwards


## Eighth Stellation of the Icosahedron

(Large version)
Lold dotted lines forwards
Fold other lines backwards


## Eighth Stellation of the Icosahedron

(Large version)

Lold dotted lines forwards
Fold other lines backwards


## Ninth Stellation of the Icosahedron

Fold the dotted lines forwards
Fold the other lines backwards



Final Stellation of the icosahedron


Final Stellation of the icosahedron


Final Stellation of the icosahedron
Fold the dotted lines forwards
Fold the other lines backwards

## ds

C


Final Stellation of the icosahedron


Final Stellation of the icosahedron


Final Stellation of the icosahedron


Final Stellation of the icosahedron


Final Stellation of the icosahedron


Final Stellation of the icosahedron


Final Stellation of the icosahedron


Final Stellation of the icosahedron


Final Stellation of the icosahedron



## Pentagonal Prism



Pentagonal Antiprism

Octagonal Prism


## Octagonal Antiprism



## Pentagrammic Prism

Fold the dotted lines forwards
Fold the other lines backwards


## Pentagrammic Antiprism

Fold the dotted lines forwards
Fold the other lines backwards


## Hexagrammic Prism

Fold the dotted lines forwards
Fold the other lines backwards


## Hexagramic Antiprism

Fold the dotted lines forwards
Fold the other lines backwards


Twisted rectangular prism (45 degrees)


Twisted rectangular prism (90 degrees)


Twisted rectangular prism (+ 45-45 degrees)


Kaleidocyclus


Caleidocyclus 8


Caleidocyclus 10


Cylinder




## Asymetric Cone




Square Cone



Paper Colour 1/ papier kleur1

noordelijke, oostelijke muur huis en de bodem north, east wall of the house and the floor

Paper Colour 1/ papier kleur1


dakkapel dormer-window
zuidelijke en westelijke muur huis
south and west wall house
paper colour 2 / papier kleur 2
onderkantdak plus twee zijden two sides of the roof



Twee zijden dak
Two sides of the roof

noordelijke, oostelijke muur huis en de bodem
north, east wall of the house and the floor


因圆

paper colour 2 / papier kleur 2




## Large Chevaux-de-frise

The other two parts are on the next two pages





[^0]:    Platonic Solids
    Dodecahedron
    Cube and Tetrahedron
    Octahedron
    Icosahedron
    Archimedean Solids
    Cuboctahedron
    Icosidodecahedron
    Truncated Tetrahedron
    Truncated Octahedron
    Truncated Cube
    Truncated Icosahedron (soccer ball)
    Truncated dodecahedron
    Rhombicuboctahedron
    Truncated Cuboctahedron
    Rhombicosidodecahedron
    Truncated Icosidodecahedron
    Snub Cube
    Snub Dodecahedron

    Kepler-Poinsot Polyhedra
    Great Stellated Dodecahedron
    Small Stellated Dodecahedron
    Great Icosahedron
    Great Dodecahedron

    Other Uniform Polyhedra
    Tetrahemihexahedron
    Octahemioctahedron
    Cubohemioctahedron
    Small Rhombihexahedron
    Small Rhombidodecahedron
    S mall Dodecahemiododecahedron
    Small Ditrigonal Icosidodecahedron
    Great Dodecahedron

    Compounds
    Stella Octangula
    Compound of Cube and Octahedron
    Compound of Dodecahedron and Icosahedron
    Compound of Two Cubes
    Compound of Three Cubes
    Compound of Five Cubes
    Compound of Five Octahedra
    Compound of Five Tetrahedra
    Compound of Truncated Icosahedron and Pentakisdodecahedron

