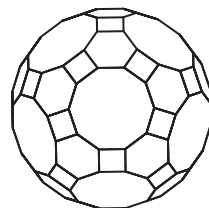




Maths-Pro Polyhedra stencil



User Guide

Maths-Pro Polyhedra stencil may be used to easily construct 3D models (polyhedra).

Step 1
Use your stencil to draw a plan (net) or individual faces on card using a ball-point pen, pressing firmly to score edges. Smaller versions of nets for 18 models are shown on pages 2 to 4 of this booklet. You may wish to draw nets in several parts (and join later) depending on the size of the model and colours of the card used. In some cases it may be more convenient to draw faces separately. Drawing tabs (dashed lines below) is optional, as these may be added as shapes/nets are cut out.

Step 2
Cut out the net/s or individual faces, adding tabs as you go if these have not been drawn already. A tab width of 5 mm is recommended.

Step 3
Fold along all internal edges.

Step 4
Join edges by applying a thin smear of quick setting glue to one tab at each join. Hold tabs together (so they will be on the inside of the completed model) until they are firmly joined. Continue joining edges until the model is complete. Note that a net is not absolutely necessary, as long as the correct pattern is reproduced at every corner of the model. In this example, the corner pattern is (clockwise) "Square-Hexagon-Hexagon" (SHH) at every corner.

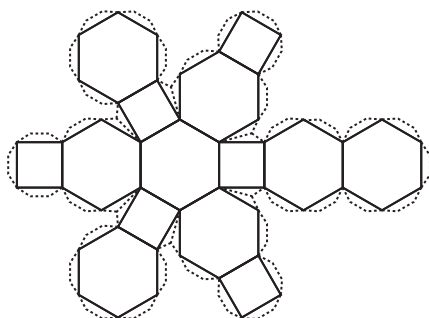


Figure 1.

A "net" for a truncated octahedron.

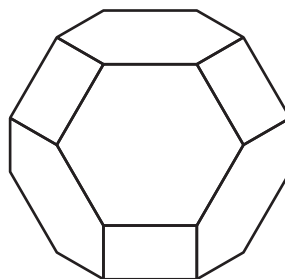


Figure 2.

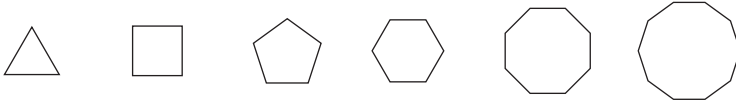
The completed model.

See inside for more polyhedra nets and corner patterns.

Visit www.maths-pro.com for more information.

Polyhedra nets and corner patterns

T = Triangle, S = square, P = Pentagon, H = Hexagon, O = Octagon, D = Decagon



Subscripts indicate the number of each shape required. e.g. T_4H_3 indicates 4 triangles and 3 hexagons are required.

Platonic polyhedra Each model contains only one type of regular polygon.

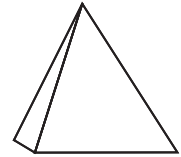
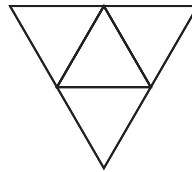
Corner patterns (example)

THH indicates that, at every corner, the arrangement of shapes, moving clockwise is:

Triangle, then Hexagon, then Hexagon

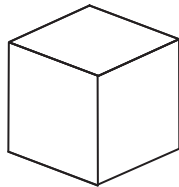
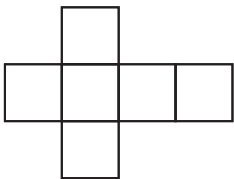


1. Tetrahedron (T_4)



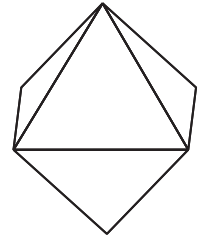
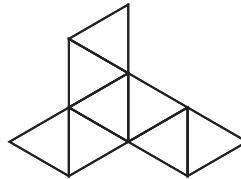
Corner pattern: **TTT**

2. Cube (S_6)



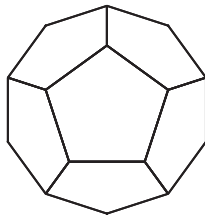
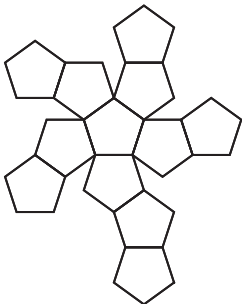
Corner pattern: **SSS**

3. Octahedron (T_8)



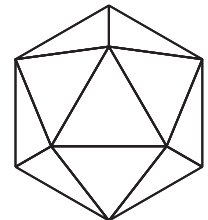
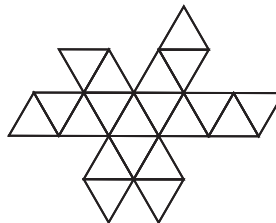
Corner pattern: **TTTT**

4. Dodecahedron (P_{12})



Corner pattern: **PPP**

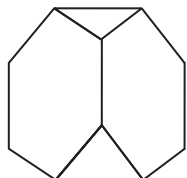
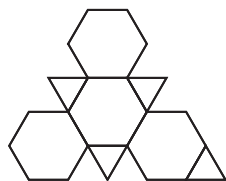
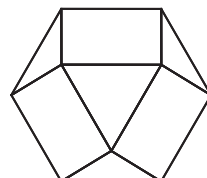
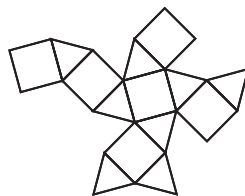
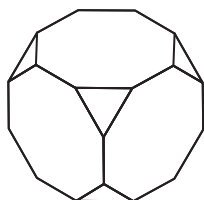
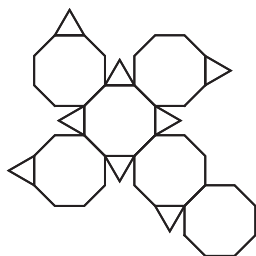
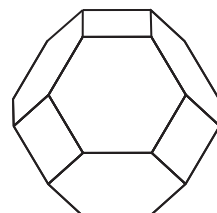
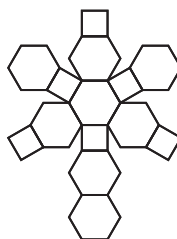
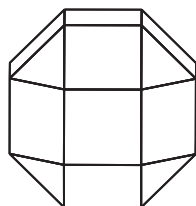
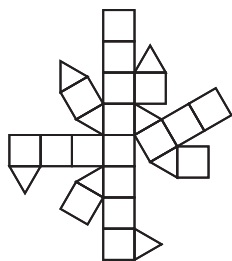
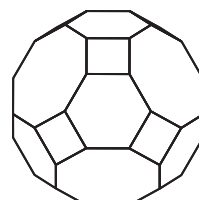
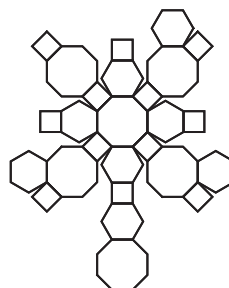
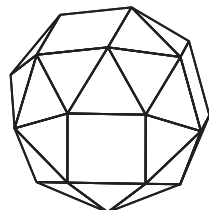
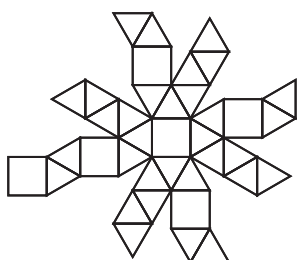
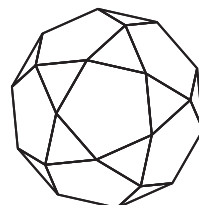
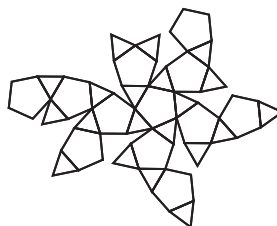
5. Icosahedron (T_{20})



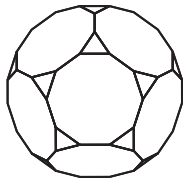
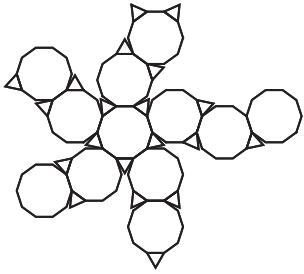
Corner pattern: **TTTTT**

Archimedean polyhedra

Each model contains two or more types of regular polygon only, with the same arrangement at each corner.

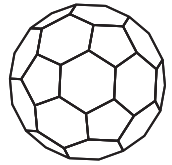
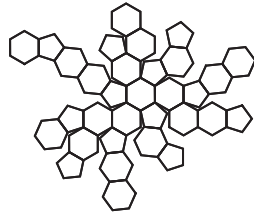
6. Truncated tetrahedron (T_4H_4)Corner pattern: **THH****7. Cuboctahedron (T_8S_6)**Corner pattern: **TSTS****8. Truncated cube (T_8O_6)**Corner pattern: **TOO****9. Truncated octahedron (S_6H_8)**Corner pattern: **SHH****10. Rhombicuboctahedron (T_8S_{18})**Corner pattern: **TSSS****11. Rhombitruncated cuboctahedron ($S_{12}H_8O_6$)**Corner pattern: **SHO****12. Snub cuboctahedron ($T_{32}S_6$)**Corner pattern: **TTTTS****13. Icosidodecahedron ($T_{20}P_{12}$)**Corner pattern: **TPTP**

14. Truncated dodecahedron ($T_{20}D_{12}$)



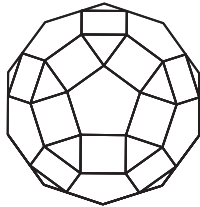
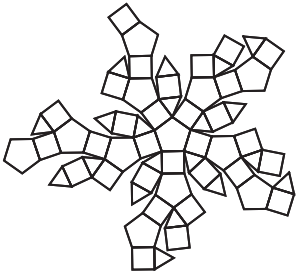
Corner pattern: **TDD**

15. Truncated icosahedron ($P_{12}H_{20}$)



Corner pattern: **PHH**

16. Rhombicosidodecahedron ($T_{20}S_{30}P_{12}$)



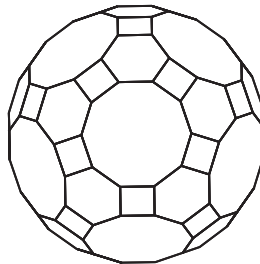
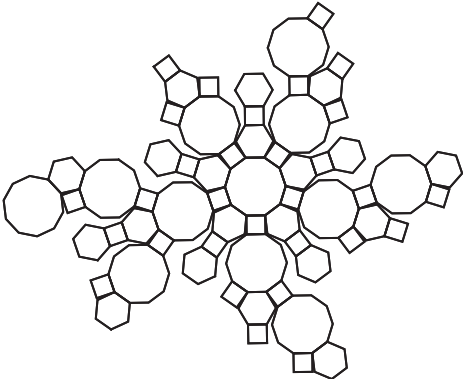
Corner pattern: **TSPS**

Visit

www.maths-pro.com

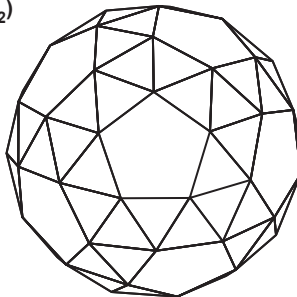
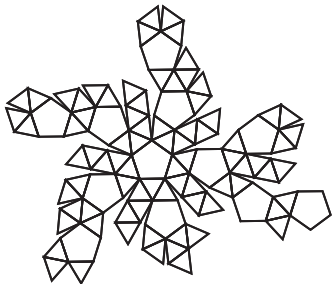
for more information
and links to polyhedra websites

17. Rhombitruncated icosidodecahedron ($S_{30}H_{20}D_{12}$)



Corner pattern: **SHD**

18. Snub icosidodecahedron ($T_{80}P_{12}$)



Corner pattern: **TTTTP**