

Making a net of a 3D object

It is a nice challenge to make a net of a basic 3D object, especially for children.

After printing the net, the child can fold and glue it to get a real 3D version of the object. This provides possibilities for the child to explore the object by touching it, drawing on it and measuring it.

We will construct some nets with Geocadabra.

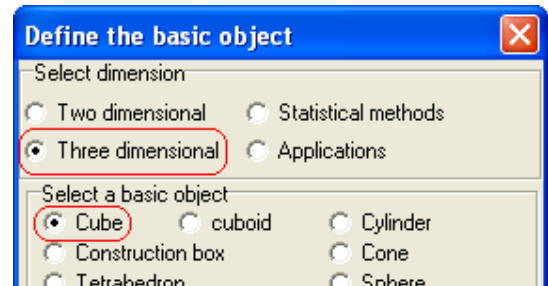
A net of a cube

Start with a cube:

- File, New, Three dimensional, Cube

We will make a net from the cube:

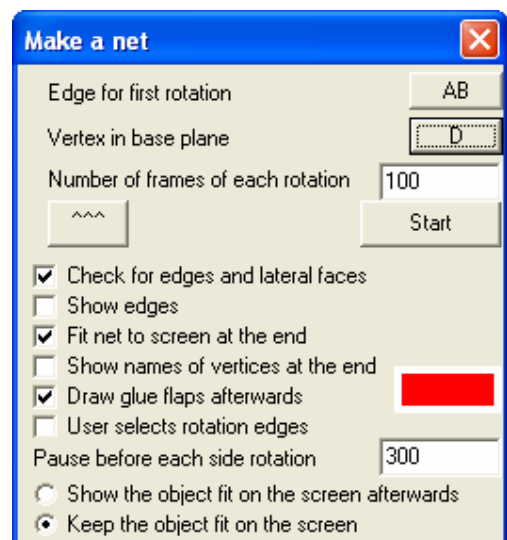
- Maintenance, 3D specials, Make a net.



A control window appears.

Complete it as shown.

- Edge for first rotation: click on the first button, and click on *AB*.
- Vertex in base plane: click on the second button and click on *D*.
- Click on [vvv] to extend the window.
- Check boxes as shown.
- Click [Start].

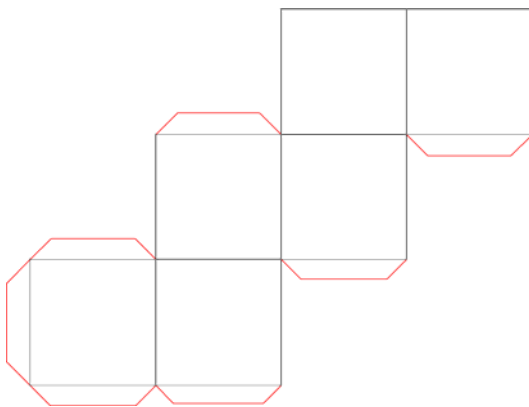


The animation shows how the object is split into a net.

When the net is ready, it rotates to get it into printable view.

Now you can click *near* edges to get glue flaps. The distance between the edge and cursor arrow determines the width of the flap.

(Challenge: Which flap belongs to which edge?)



Now print the net, cut it out, fold and glue.

In this example all handlings on the computer are performed automatically by the software. The user only has to define how the process has to start and behave.

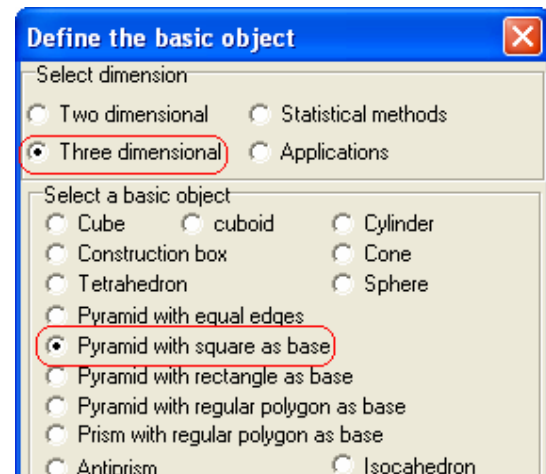
But it is also possible to control the process. By checking “User selects rotation edges” the software waits each time when there can be chosen between two or more rotation edges. This way also other outcomes of the net can be accomplished.

- Restart above exercise, and try to create a different net.

A net of a pyramid

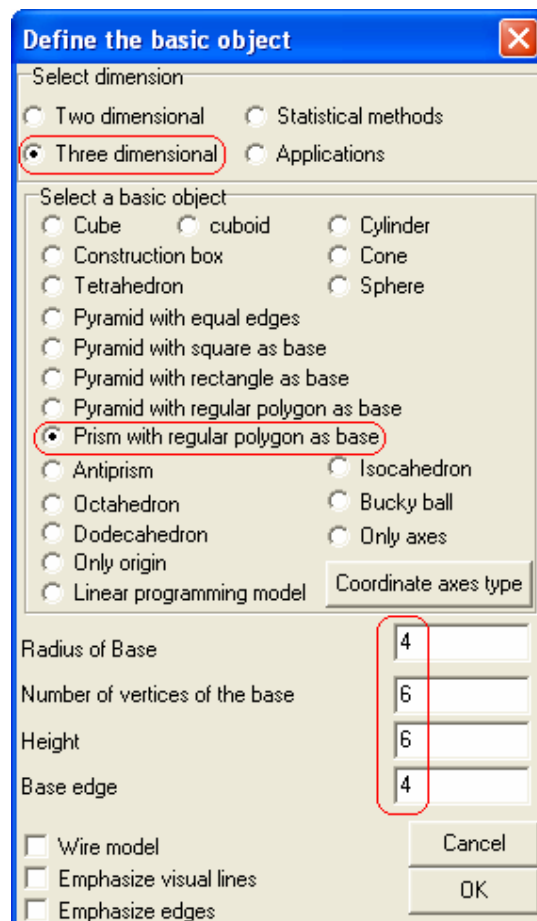
Start with one of the basic pyramid objects:

- File, New, Three dimensional, Pyramid with square as base
- Make a net, and print it.



A net of a prism

Build a net of a prism. Do some experiments: select several different prisms, switching the number of vertices or the height.



Nets of more complicated objects

Build (and print) a net of an octahedron, a dodecahedron, an icosahedron, a bucky ball.