

99-353 SolidWorks and Laser Cutting

Making 3D Models

Dave Touretzky
Computer Science
Carnegie Mellon University

Cardboard

- Ambiguous term avoided by professionals because it covers a wide range of materials.
- For our purposes: brown corrugated paper around 1/8 inch thick.
- Lighter and cheaper (and weaker) than wood.
- Foldable! Laser cut parameters:
 - 20 mm/sec at 45% power to cut
 - 50 mm/sec at 25% power to fold
- Unlike paper origami, with laser cut cardboard all folds must be in the same direction.

Laser Cut 3D Plate Models

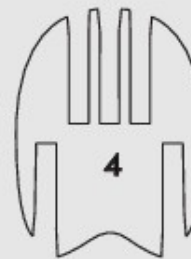
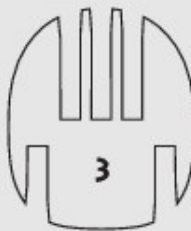
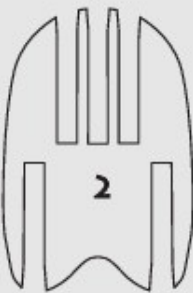
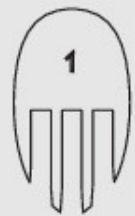
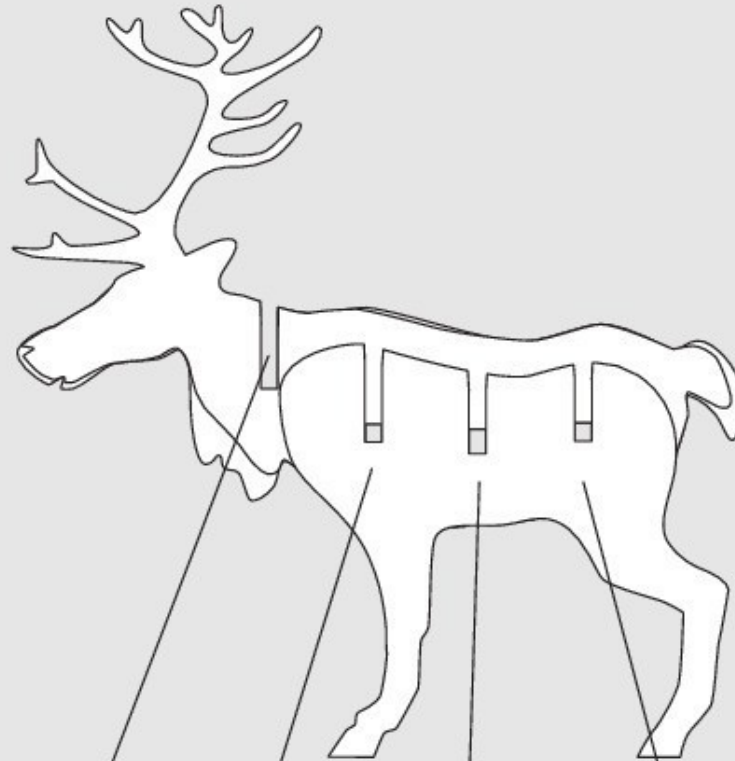


Dinosaurs Are Always Popular



Reindeer from **Thingiverse**





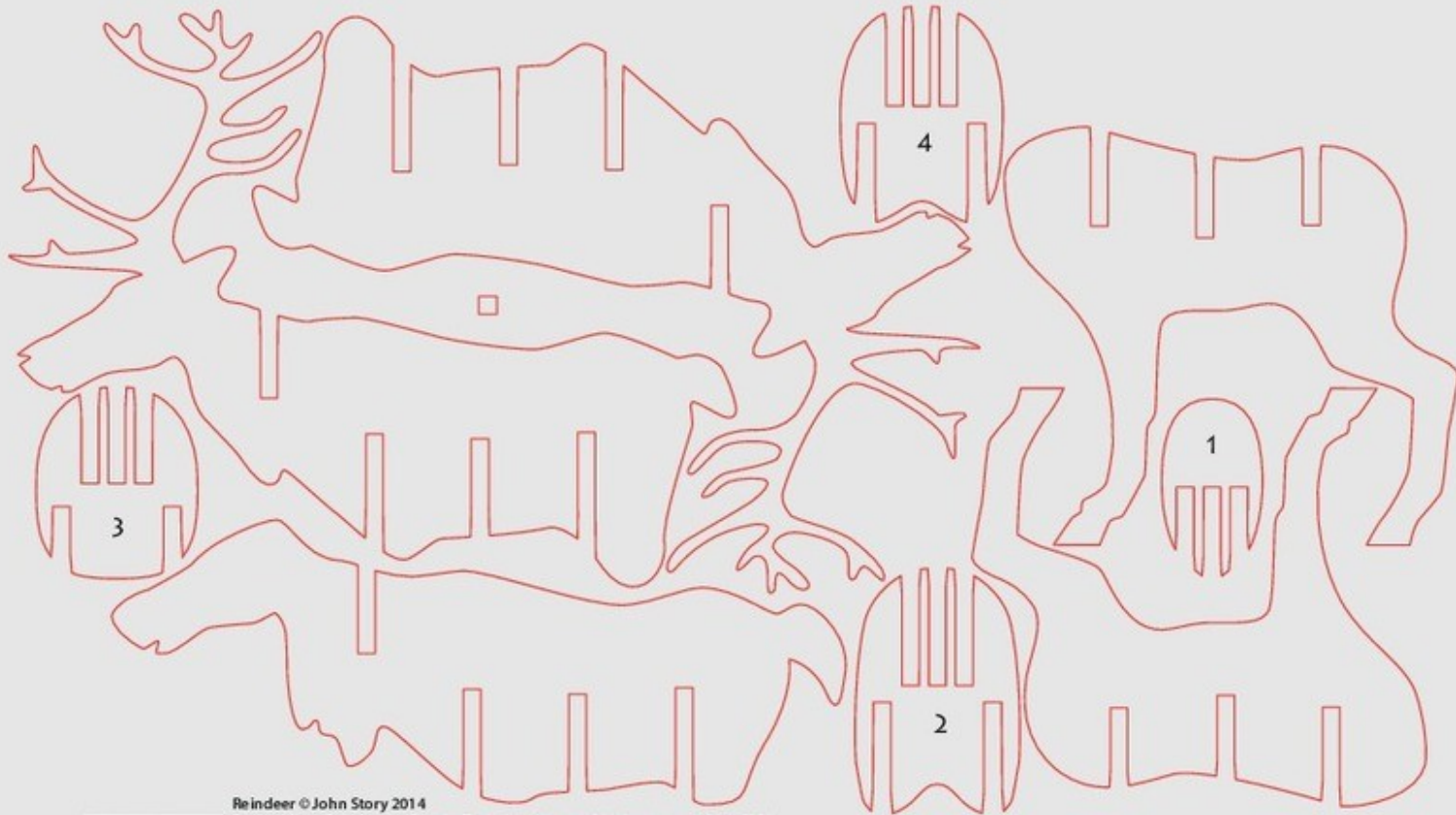
Reindeer © John Story 2014

Derived from Reindeer by CreativeTools, <http://www.thingiverse.com/thing:5352>

Released under Attribution-ShareAlike 4.0 International (CC BY-SA 4.0)

<http://creativecommons.org/licenses/by-sa/4.0/>





Reindeer © John Story 2014

Derived from Reindeer by CreativeTools, <http://www.thingiverse.com/thing:5352>

Released under Attribution-ShareAlike 4.0 International (CC BY-SA 4.0)

<http://creativecommons.org/licenses/by-sa/4.0/>



Hand Bowl Sculpture



Modeling the Hand

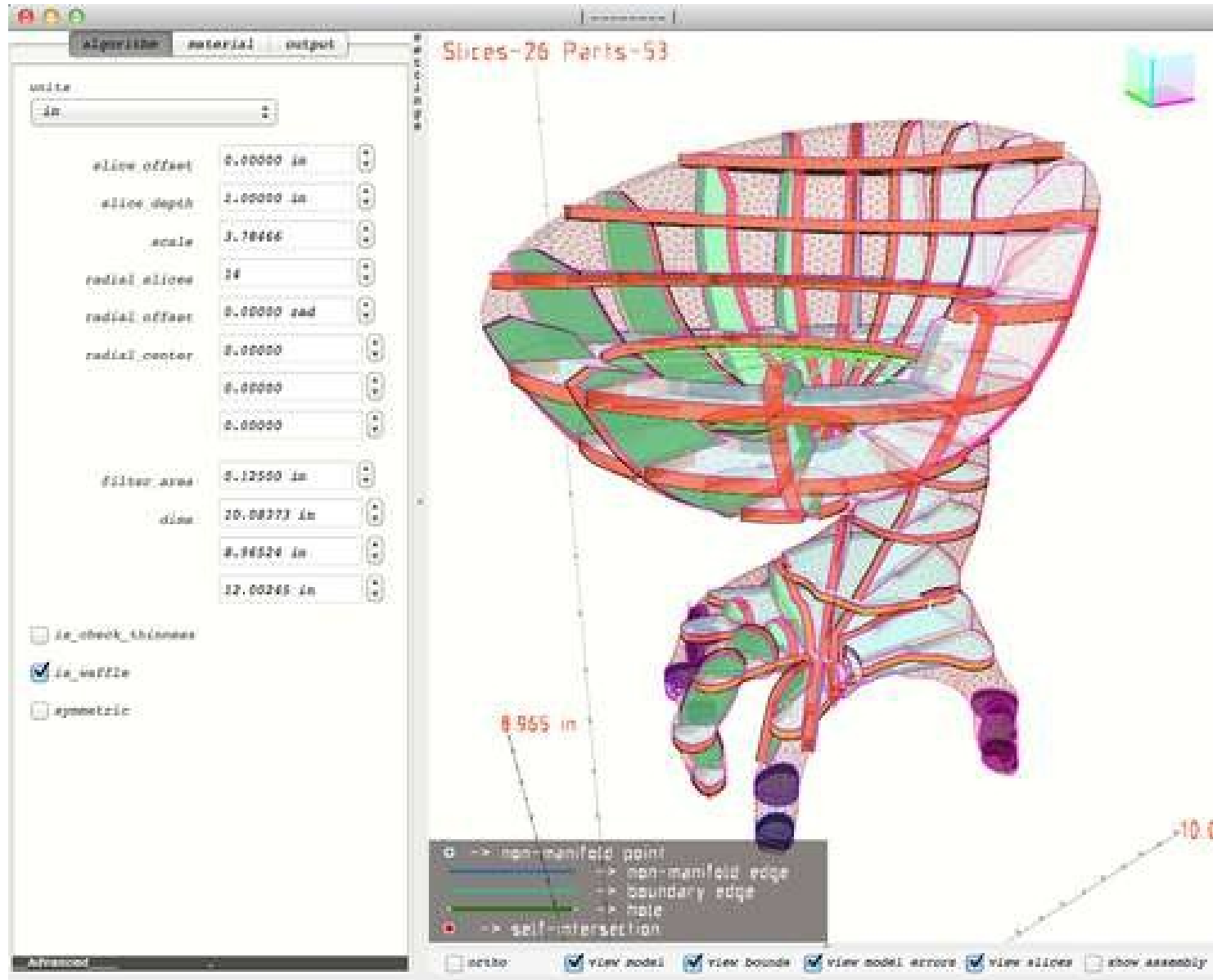


Images from
Ponoko.com

Adding the Bowl (Blender)

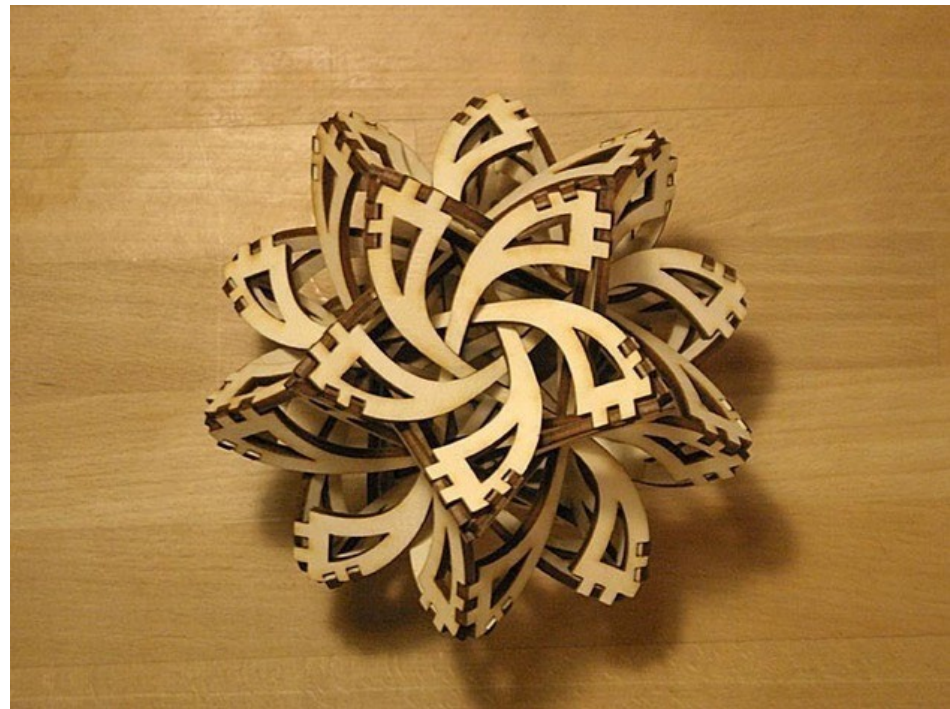


123DMake Slice Tool



Thingiverse

- Site for exchanging designs of make-able things: artwork, puzzles, toys, tools, etc.
- Mostly 3D printing, but some laser cut stuff.
- www.Thingiverse.com (owned by Makerbot)
- Frabjous sculpture:



Free STL Files At Thingiverse

The screenshot shows the Thingiverse website interface. At the top, there is a navigation bar with the Thingiverse logo and links for DASHBOARD, EXPLORE, EDUCATION, and CREATE. A search bar is also present. The main content area features a 3D model of a blue dinosaur, 'Arno the good Dinosaur', by user 'donegal3d', published on May 4, 2016. The model is displayed in a 3D viewer with 'Thingiview' controls. To the right of the viewer, there is a 'DOWNLOAD ALL FILES' button and a list of engagement metrics: Like (20), Collect (21), Comment (0), I Made One (0), Remix It (0), and Share. Below this, there are 'Thing Apps Enabled' options: 'Order This Printed' and 'View All Apps'. A summary bar at the bottom of the viewer shows 'Thing Details', 'Thing Files' (selected), 'Apps', '0 Comments', '0 Made', '21 Collections', and '0 Remixes'. A table below the summary bar lists the file 'Arlo.stl' with 287 downloads and a size of 13mb, last updated on 05-04-16. To the right of the table, there is a Creative Commons Attribution license icon and text: 'Arno the good Dinosaur by donegal3d is licensed under the Creative Commons - Attribution license.'

Thingiverse DASHBOARD EXPLORE EDUCATION CREATE SIGN IN / JOIN

Arno the good Dinosaur
by donegal3d, published May 4, 2016

Thingiview

DOWNLOAD ALL FILES

- Like 20
- Collect 21
- Comment 0
- I Made One 0
- Remix It 0
- Share

Thing Apps Enabled

- Order This Printed
- View All Apps

Thing Details **Thing Files** Apps 0 Comments 0 Made 21 Collections 0 Remixes

File Name	Downloads	Size
Arlo.stl Last updated: 05-04-16	287	13mb

Arno the good Dinosaur by donegal3d is licensed under the Creative Commons - Attribution license.

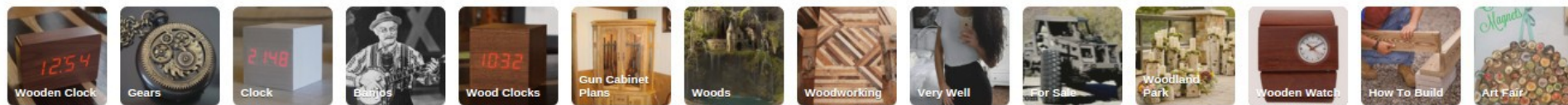
Pinterest

- Pinterest has a huge collection of laser cut projects.
- Many are available for purchase via Etsy.
- Example: wooden gear clocks.
- Google “Pinterest laser cut”.

Wooden Gear Clocks

21 Pins 10 Followers

Follow



Related Boards

- clock
- wooden gears
- Wooden Gear Clocks
- Часы и механизмы
- Wood Gear Clocks

Free Wood Gears Clocks Plan | This is a real nice picture. Very well lit. Nice Job Ken.)

More about this Pin

Free Wood Gears Clocks Plan | pictures of Gear Clock Plans

More about this Pin

Wooden Clock Gears | These are the wooden gear clocks makers clock kits and plans Pictures

More about this Pin

Wooden Clock Gears | The Moon Phase Clock shows the seconds, minutes, hours, day, date and ...

More about this Pin

Wooden Clock Gears | first clocks and watches were made from wood yes wood

More about this Pin

Wooden Clock Gears | maxresdefault.jpg

More about this Pin

Wooden Gear Clock Kits - How To build DIY Woodworking Blueprints PDF Download.

More about this Pin

Wooden Clock Gears | image image

Wooden gear banjo clock

More about this Pin

Wooden Clock Gears | Gear Clock Plans

More about this Pin

Wooden Clock Gears | Picture of Wooden gear banjo clock

More about this Pin

Wooden gear banjo clock

More about this Pin

Wooden Clock Gears | Home IKEA Gift Card Privacy Policy Sitemap Contact

More about this Pin

Reindeer byhtml

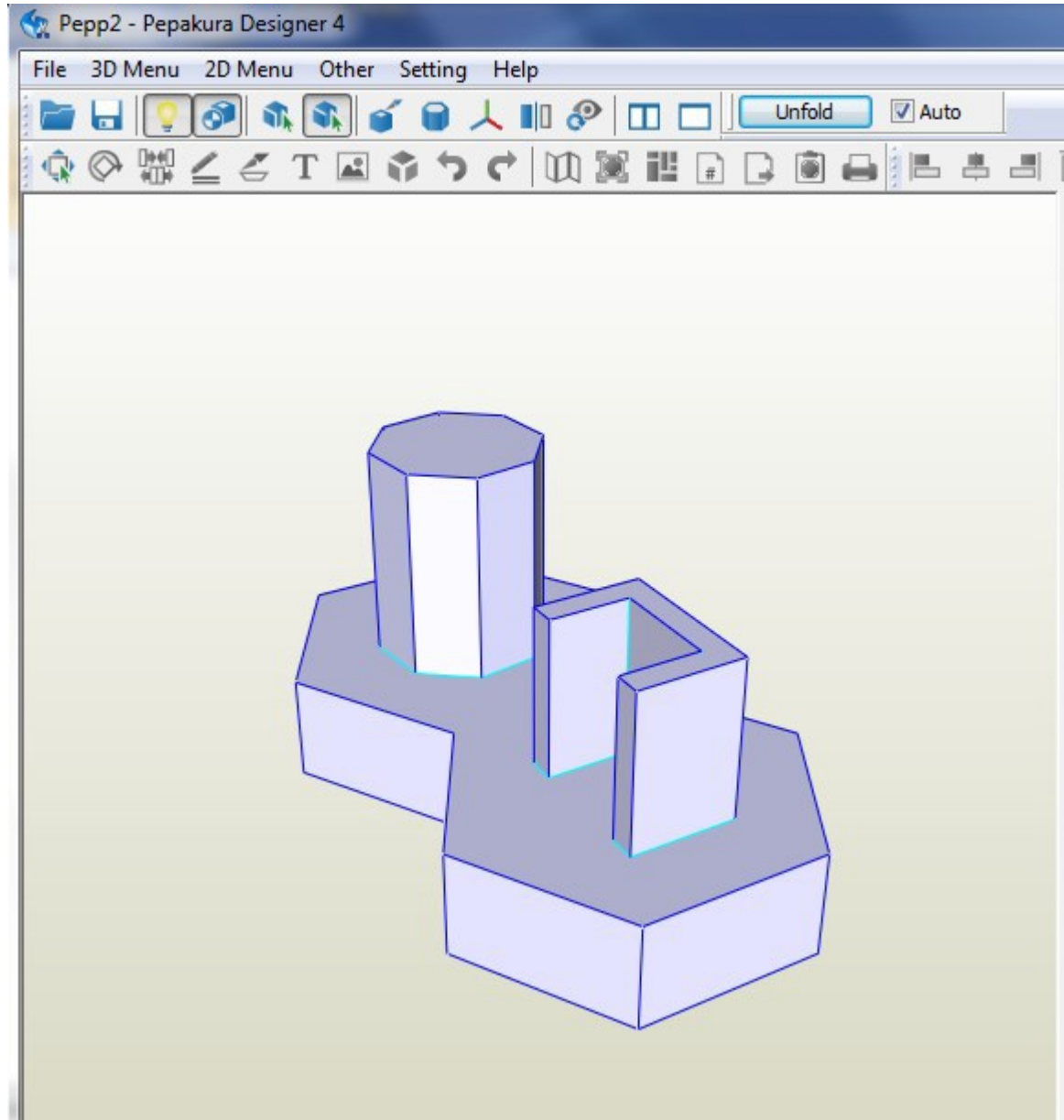
Show all downloads...

Pepakura Designer

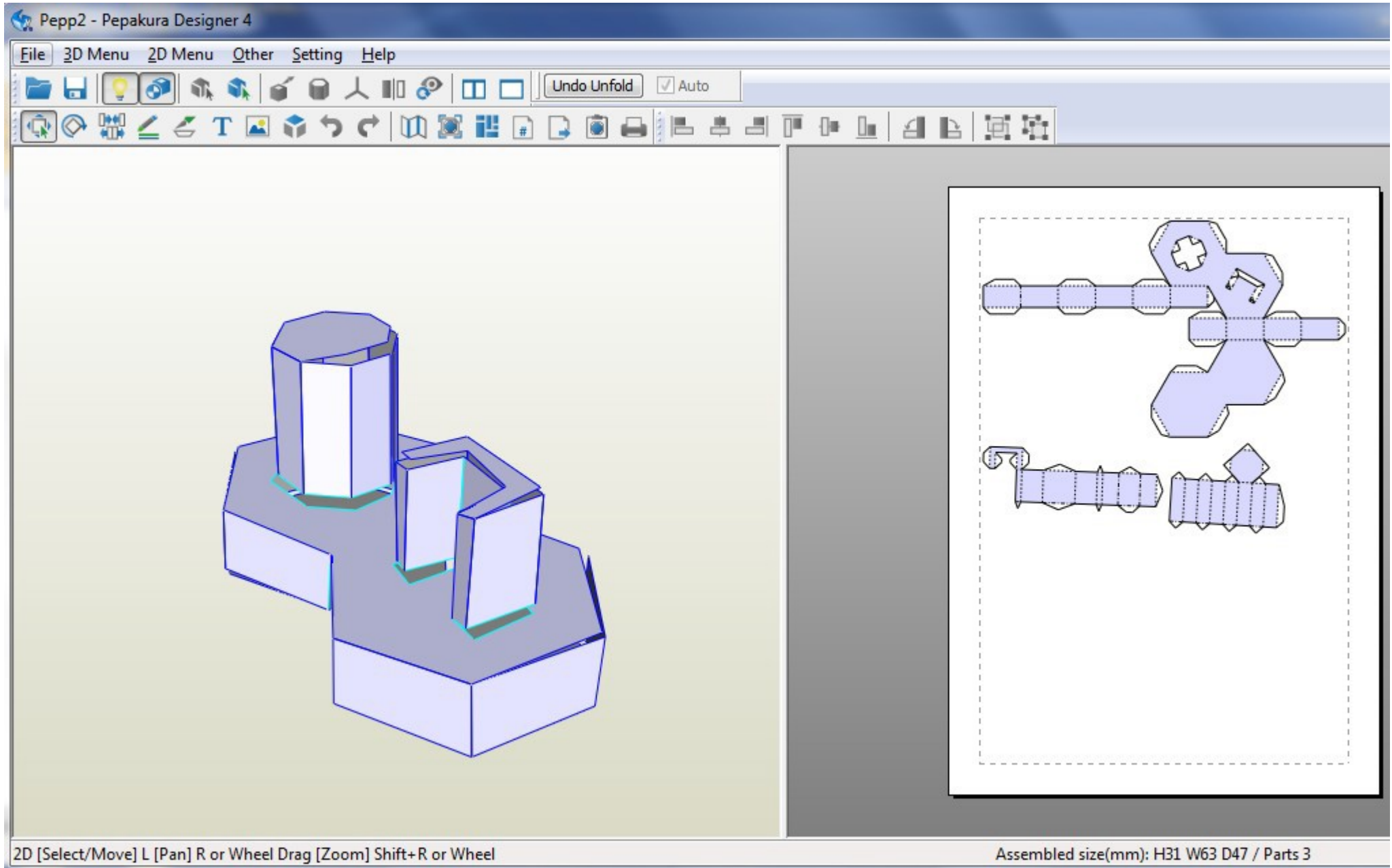
- Turn STL files into papercraft models.



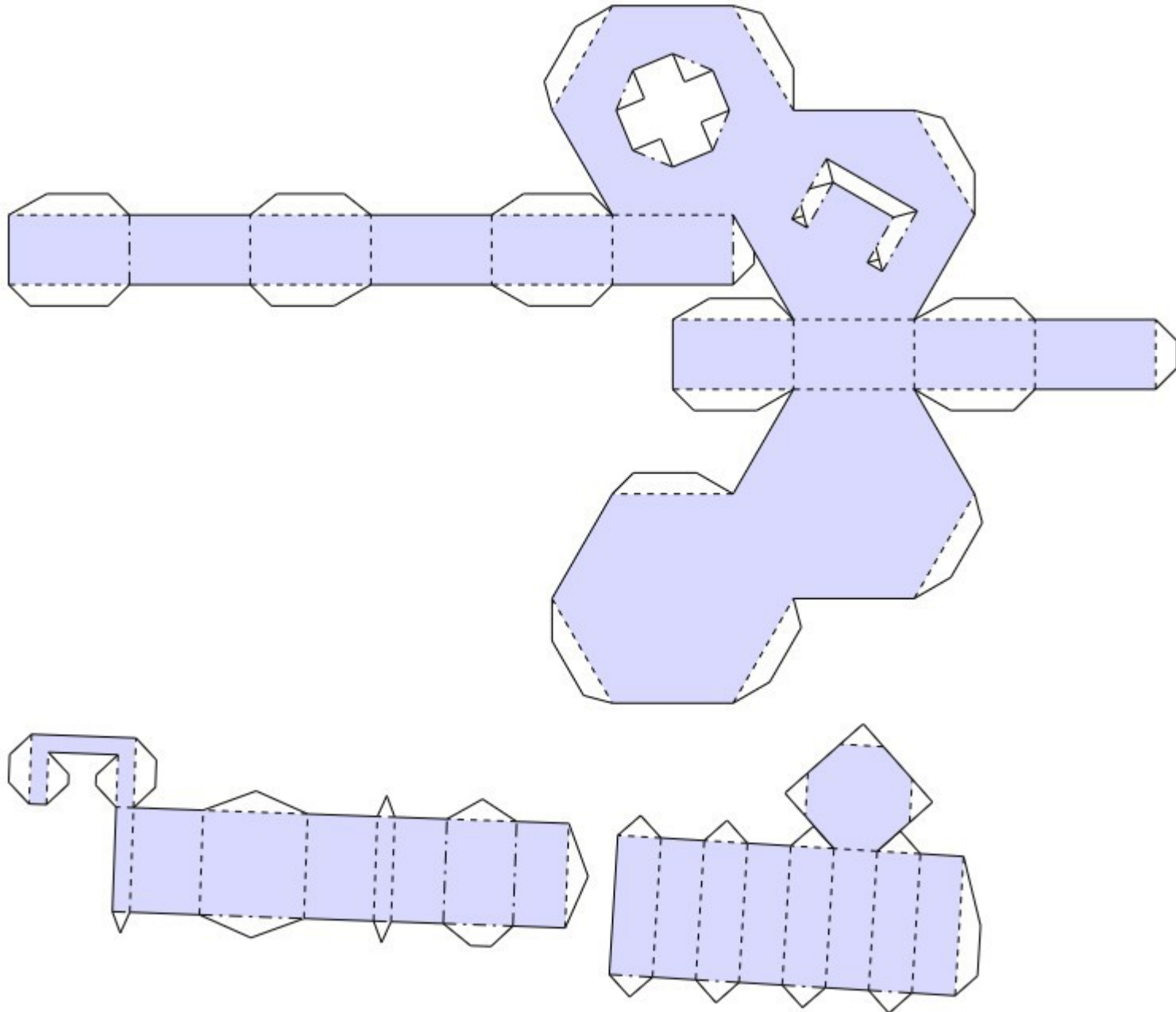
Pepakura: STL File Input



Pepakura: Unfolding



Pepakura: Unfolded



Types of Folds

MOUNTAIN FOLD

VALLEY FOLD

474

203, 204, 205, 206, 207, 208

VALLEY FOLD

MOUNTAIN FOLD

Line Style	
Cut	_____
Mountain Fold	_____
Valley Fold	_____

Image from krsiak at Instructables.com