99-353 SolidWorks and Laser Cutting

Making 3D Models

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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
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
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”.
Pepakura Designer

- Turn STL files into papercraft models.
Pepakura: STL File Input
Pepakura: Unfolding
Pepakura: Unfolded
Types of Folds

MOUNTAIN FOLD

VALLEY FOLD

Image from krsiak at Instructables.com