123D DESIGN WORKSPACE OVERVIEW

Save/Export

NAME   Un/Redo

Kits

Orientation Tools

Main Tool Bar

Sub-tools

Workspace/Plane

Object/Movement Tool Bar

Units

KEYBOARD SHORTCUTS

Nudge Object Selected	↑ ↓ → ←
Tweak	K
Scale	S
Press Pull	P
Merge	[
Subtract	]
Intersect	\
Text	T
To last cell with data	Ctrl + End

MOUSE SHORTCUTS

Center Scroll Wheel Click	Right Click	Scroll Wheel	Double Click Scroll Wheel
PAN	ORBIT	ZOOM	FIT

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123D Design 2015

GETTING STARTED

123D Design is made by AutoDesk, the same company that creates the pro CAD tool AutoCad.
123D design allows users to easily create objects ready to 3D print or overlay in a 2D composition.

DOWNLOAD WORKSHOP FILES

Go the STC Workshops page (http://www.wwu.edu/techcenter/pages/workshops.shtml)
and select WORKSHOP NAME **(FILENAME for PC, use the .zip for Mac)**

Click '**Save File**' and save to the Desktop

Double-click **FILENAME** on the Desktop, this will create a folder on your desktop called "**training temp**".
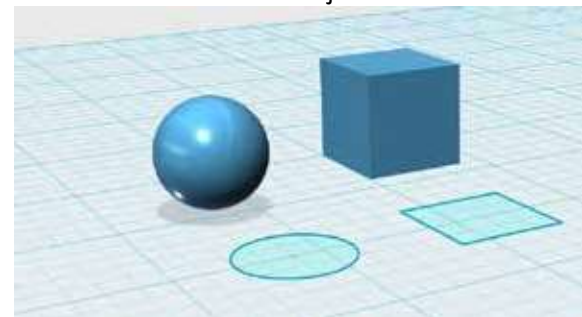
Double-click **FILENAME** to open.

Using shapes (Primitives)

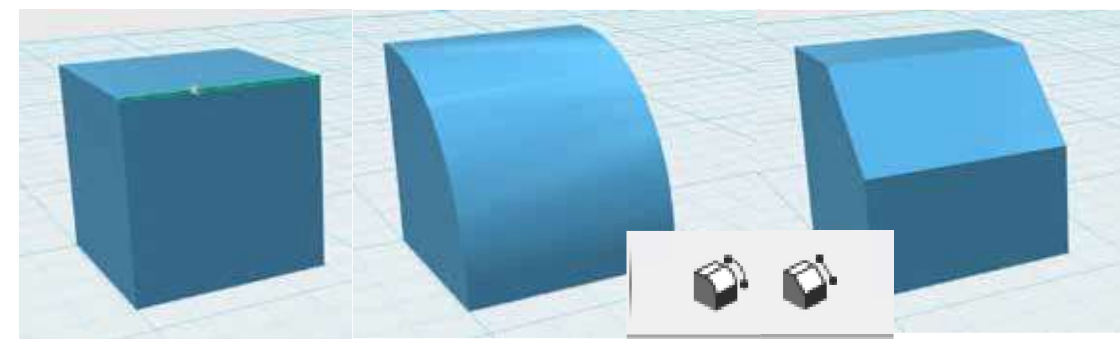In the Primitives tool drop down, you can select 3D shapes and 2D shapes.

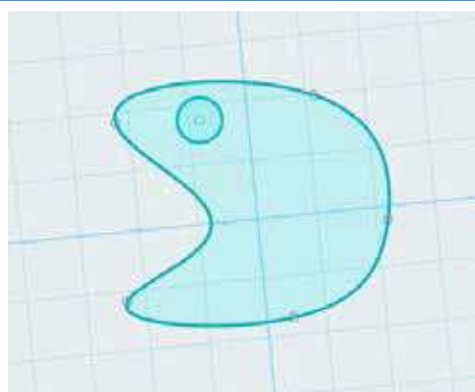Shapes allow you to cobine fundimental forms to create an object.

Edging (Radius/Chamfer)

With shapes and objects that have edges, you can round of (radius) or cut off (chamfer) the corners. This especially helps if you are trying to design somthing with smooth edges such as for handels.
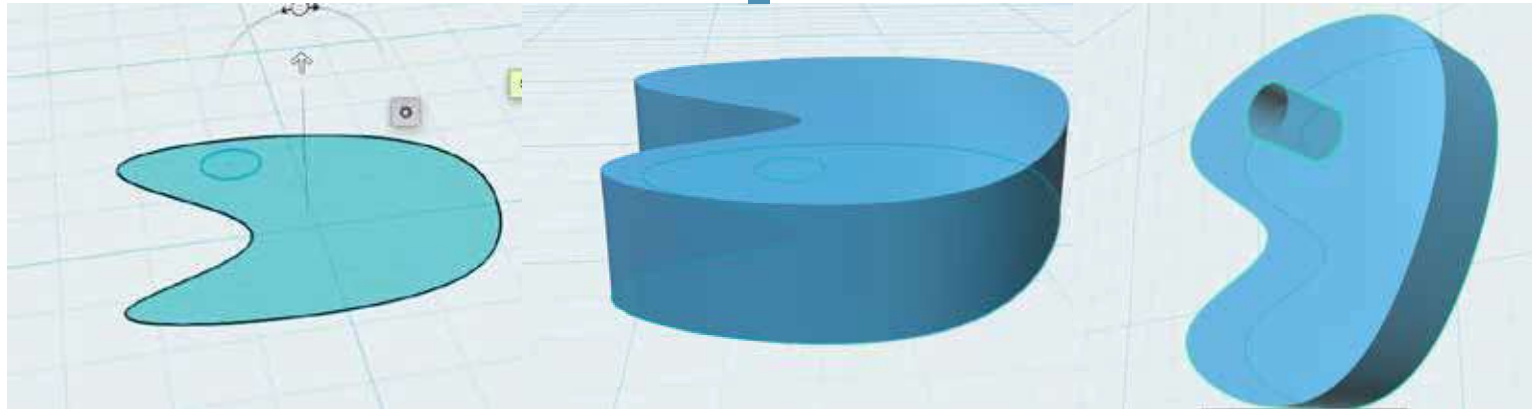

Sketch (Polyline/Spline)

For non geomentric or curved shapes, the pen tool will allow you to create the outline and surface that can then be extruded or lofted.

2D to 3D (Extruding)

When you take a surface and extrude in a direction, it will continue the surface and give it an edge based on the shape
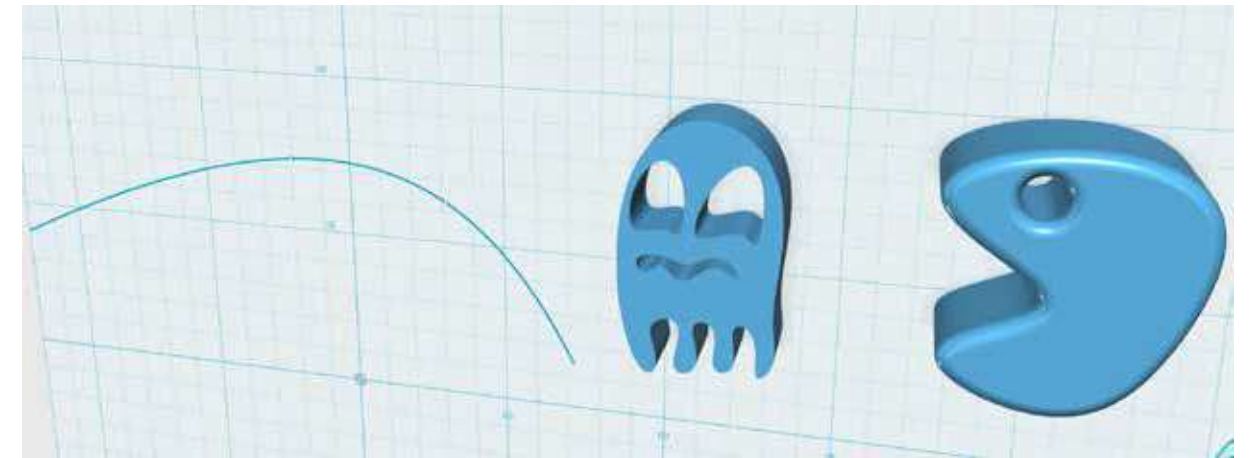
Extruding two shape(subtraction)

When you extrude a 2D shape within another 3D shape, the result with be a difference subtraction of the two areas.
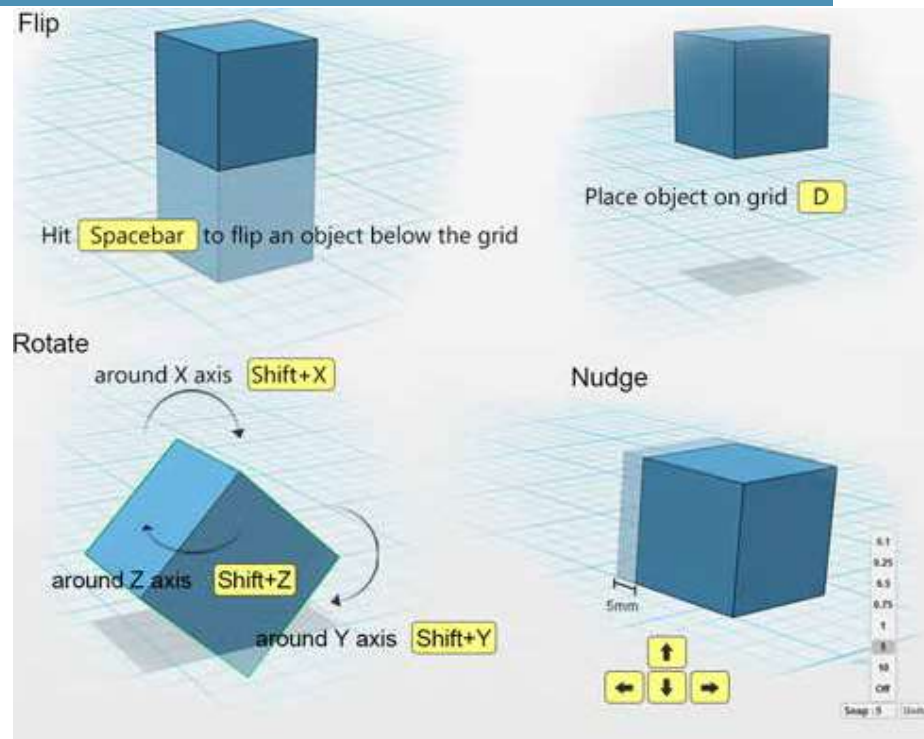

Path (Array)

Array allow you to mirror or replicate several objects made that you want along an axis (polar array) or a line (path array).

Object on plane (Grabbing)

Designing in any CAD software you have to keep in mind that you have an X,Y,and Z axis. When you grab an object you can reorient it based off its relitive position to the plane and the view. Also, key comands help speed up orientation based off what axis you are orienting around.
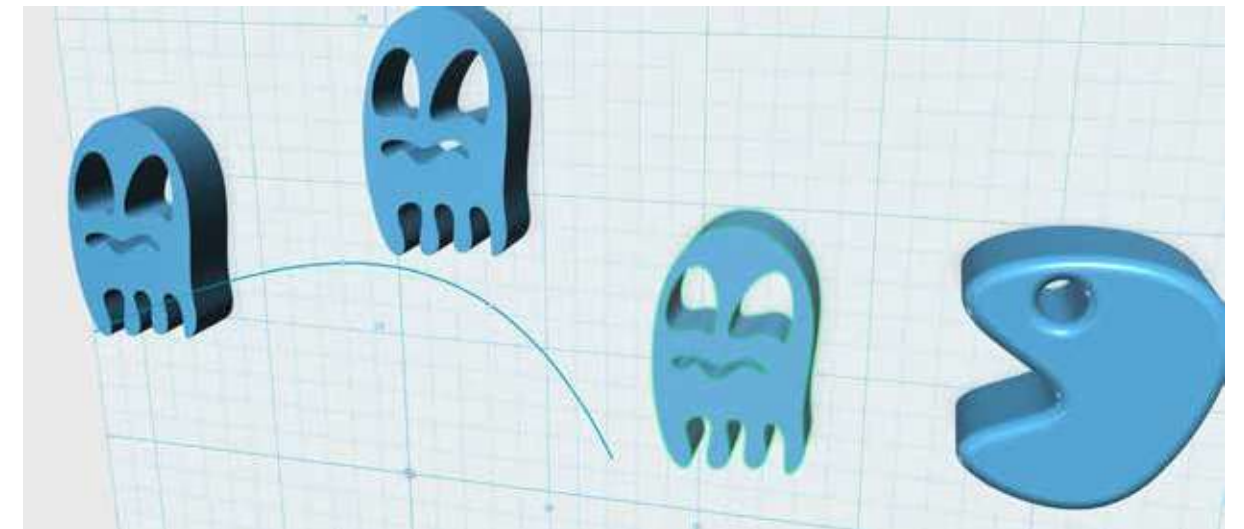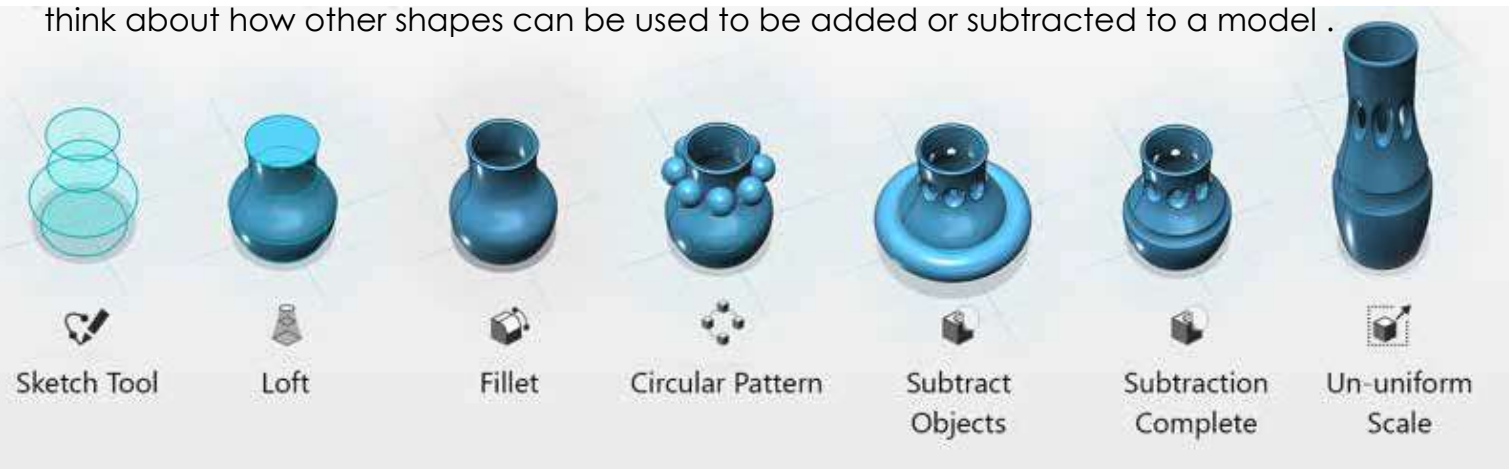
View cube

Flip

Hit Spacebar to flip an object below the grid

Place object on grid D

Rotate

around X axis Shift+X

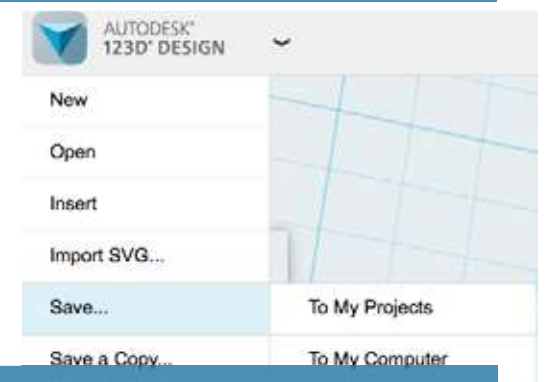around Z axis Shift+Z

around Y axis Shift+Y

Nudge

5mm

Working with 3D objects

Bringing a sketched 2D design to a 3D form can be done in a veritey of ways. Remember to think about how other shapes can be used to be added or subtracted to a model .

Sketch Tool | Loft | Fillet | Circular Pattern | Subtract Objects | Subtraction Complete | Un-uniform Scale

Saving

To save the model you have been working on. Use the 123D Autodesk dropdown menu and select **Save > To My Computer.** This creates a .123dx file that can be used to work on the project later

AUTODESK 123D° DESIGN

New
Open
Insert
Import SVG...
Save... → To My Projects
Save a Copy... → To My Computer

Exporting

To create a model file to 3D print, from the 123D Autodesk dropdown menu select **Export > STL**.

Export... | STL
Send To... | SAT
3D Print | Create 2D Layout