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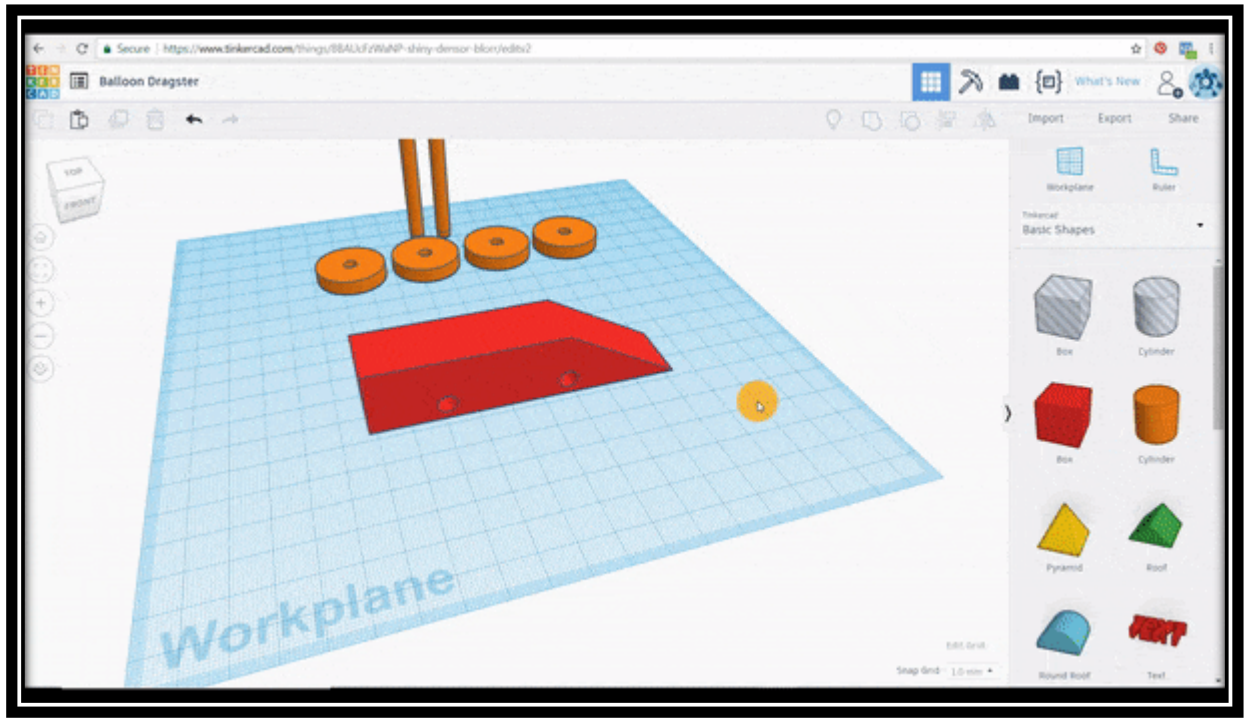
Intro to CAD and TINKERCAD

What is CAD?

CAD stands for Computer Aided Design

Computer-Aided Design (CAD) is the use of computers to aid in the creation, modification, analysis, or optimization of a design in both 3D and 2D.



What is it used for?

Architectural Design
Automotive Design
Aerospace Engineering
Electronics Design
Industrial Product Design
Fashion Design
Medical Device Design
Environmental and Civil Engineering
Game Design
Entertainment Industry

Examples of CAD Applications

AUTODESK® FUSION 360™
blender®
TINKERCAD
AUTODESK® TINKERCAD®
SOLIDWORKS
SketchUp

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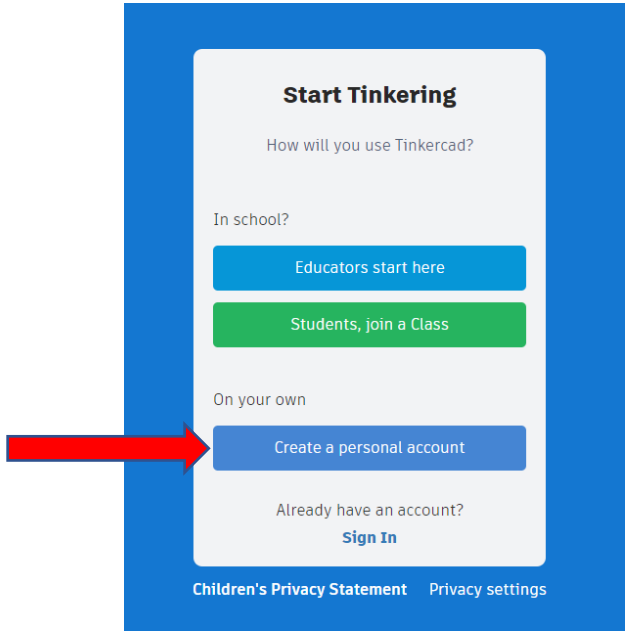
TINKERCAD

To sign up for TinkerCad navigate to

https://www.tinkercad.com/join



TinkerCad is a completely free Web-Base easy to use CAD application made by AutoDesk.

Create a personal account with your SFA email address

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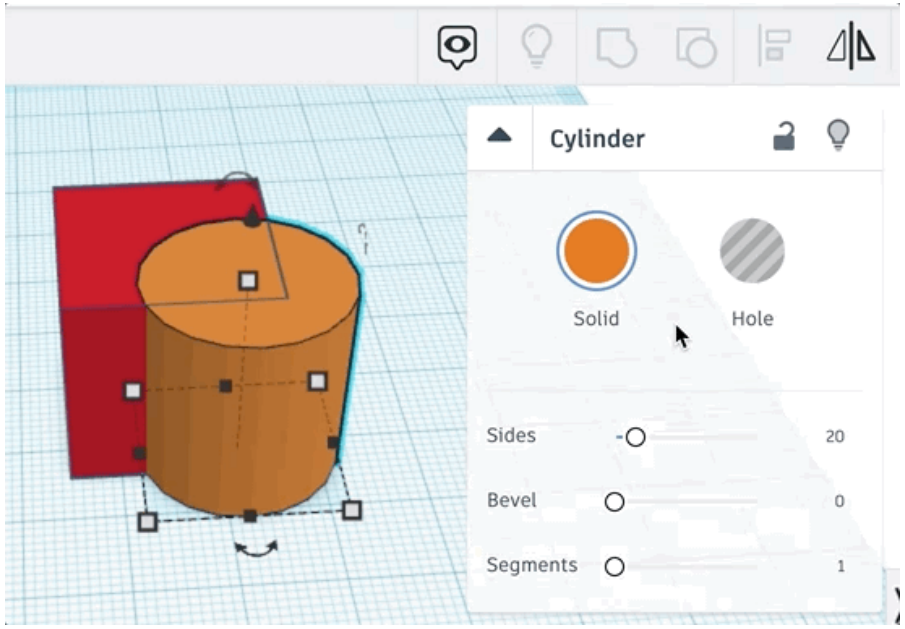
TinkerCad Tips!



AUTODESK Tinkercad

Keyboard Shortcuts

PC / MAC — Ctrl = Command and Alt = Option

VIEWING 3D SPACE

Pan	Middle mouse
Orbit	Right mouse
Zoom in or out	+ and - / or Scroll
Fit selection into view	F
Place Workplane	W (+ Shift to flip)
Place Ruler	R
Add Note	N

COMMANDS

Drop to Workplane	D
Select multiple	Shift
Select all	Ctrl + A
Copy / Paste	Ctrl + C / Ctrl + V
Drag a copy	Alt + Move shape
Duplicate & repeat	Ctrl + D
Undo action	Ctrl + Z
Redo action	Ctrl + Shift + Z / Ctrl + Y
Delete	Del

MOVE, ROTATE, AND SCALE

Move step on Workplane (X/Y axis)	Arrow keys
Move up step (Z axis)	Ctrl + ↓ / ↑
10x move step (X/Y axis)	Shift + Arrow keys
10x move step (Z axis)	Shift + Ctrl + ↓ / ↑
Rotate snap 45°	Shift + Rotate Handle
Uniform scale	Shift + Scale Handle
Scale about center	Alt + Scale Handle
Align	L
Mirror or Flip	M

SHAPES PROPERTIES

Group / Ungroup	Ctrl + G / Ctrl + Shift + G
Make a hole	H
Make a solid color	S
Make transparent	T
Lock or Unlock	Ctrl + L
Hide	Ctrl + H
Show all	Ctrl + Shift + H

www.autode.sk/tinkercad-keyboard-shortcuts

When done export as a STL/OBJ and you can 3D print the object.

Or export as SVG to laser engrave the object. (Must be 2D)