TinkerCad: Welcome to the Wide, Wonderful World of 3D

TinkerCad is a free web-based CAD package from AutoDesk. (Thanks, AutoDesk!) It is a solid modeler, so you always have legal 3D objects suitable for 3D Printing.

You get to it at: http://www.tinkercad.com/

Logging In

Welcome back

Who you are

To use our account, enter:
Username: mjb@engr.oregonstate.edu
Password: corvallis72542

Logging In

Yes, go here!

Start Here

Our notes are available through a browser:
http://cs.oregonstate.edu/~mjb/tinkercad

The TinkerCad program is available through a browser too:
http://www.tinkercad.com

You can create your own TinkerCad account. The advantage of this is that TinkerCad will keep your 3D creations in cloud storage so you can get at it later. If you are under 18 years old, get your parents’ permission and have them help you.

To use our account, use:
User: mjb@engr.oregonstate.edu
Password: corvallis72542

The First Screen You See

Who you are

Designs this account has worked on before

Welp, don’t go here

No, not here either. Don’t ever create your own new account on anything without your parents’ permission!

Yes, go here!
First Screen You See

Click here to start something new

Moving the Scene around in 3D

If you have a mouse:
• Rotate – right mouse button
• Scale – scroll wheel
• Pan (translate) – middle mouse button

If you don’t have a mouse:
• Rotate – touch and move the blue plate, or touch and rotate this cube
• Scale – pinch on the plate, or touch the + and - buttons
• Pan (translate) – two-finger touch on the blue plate

Un-do and Re-do are Your Best Friends Ever!

Keyboard shortcuts:
• Un-do: Control-Z
• Re-do: Control-Y

Start by Placing an Object into the Scene

With your finger or the left-mouse button, drag a shape into the scene

The Small Symbols Let You do Things to the Object

This curved arrow allows you to rotate the object in the horizontal plane

Touch or left-click in the object to move it left-right and in-out.

All the white and black dots allow you to change the size of the object in one or more dimensions

The solid black triangle allows you to lift the object up in the air.
Scaled, Lifted, and Tipped

Changing the Color
With the object selected, click here and select a new color.

Combining Objects
Take 2 objects and overlap them.

Combining Objects
Select both objects (touch both, or left-click on one and then shift-left-click on the other) ...

Combining Objects
Sometimes it is Easiest to Select Multiple things by Dragging a Selection Box Around Them
Click here Then drag to here

Combining Objects
You can tell they are now one object because you see no overlapping edge lines here, and they are a single color. 3D Printers love grouped 3D shapes!
Combining Objects

An even cooler trick – while the objects are overlapped, click on just one of them and then click on Hole.

This makes that object a “negative object.”

Now select both objects again, then click on Group like you did before. This causes the Hole object to take a “3D Bite” out of the other object. You can use this to make new shapes or can even create holes through shapes.

In Engineering, this is known as Constructive Solid Geometry (CSG), or Boolean shapes. Think of it as 3D Venn Diagrams:

Union: Difference:

Changing the Name of Your Design

When you start a new design, TinkerCad gives it a funny name. This is OK, but if you want to give it a more descriptive name, click on the funny name and type in a new one:

Changing the Name

Geometric Primitives

These are the standard built-in objects that you can use:

Not Sure Where to Start?

Try One of These

3D Text!

Select and drag Text

Type your text in here
Union the Text with a Block to 3D Print a Desk Sign

Scribbling!

The screen changes to this:

Grab the blue circle and, well, scribble with it (duh)

From there on, it acts like any other 3D object

Here you are subtracting a cylinder from your 3D Scribble.

Scribbling!

Drag the Scribble icon into the scene

3D Preview

Click Done when done

Other Cool Stuff

Solid letters and numbers
Solid symbols
Solid goofy things
Shapes where you can enter information about them (includes state outlines!)
Shapes donated by other users (includes some good text-input objects)
A place to store your favorite shapes
A Shape Generator is a way of making different versions of a shape by interacting with a dialog box.

The Fidget Spinner is in here.

States and countries are in here.

The Voronoi Shape Generator is Pretty Fun Too.

State and Country Shape Generators

More Fascinating Features

Smithsonian
More Fascinating Features

- Also worth checking out!

Writing Your Design to take to another 3D Modeling Program

Select the object and click on Export, which says that you are trying to give your object away.

The most common shared file format among 3D modeling programs is an OBJ file, so then click here and tell TinkerCad where you want this file saved.

Writing Your Design to take to a 3D Printer

Select the object and click on Export, which says that you are trying to give your object away.

Most 3D Printers want an STL file, so then click here and tell TinkerCad where you want this file saved.

Thanks for Coming!