# Tinkercad: An Overview

Tinkercad is free web-based 3D modeling platform. As one of the simplest ways to create and modify 3D objects, it is an excellent tool for anyone who wants a user-friendly interface, including those who are just beginning to learn. It's fun, easy to set up, and available on any device with an internet connection.

You will need the following to use Tinkercad:

- Any device with an internet connection - you *can* access Tinkercad on a mobile phone or tablet, but we recommend a computer with a full keyboard and mouse for ease of use.

- A free Autodesk account. You can sign up for Autodesk right on www.tinkercad.com.

Here's what you'll see when you first sign in and open a new design:
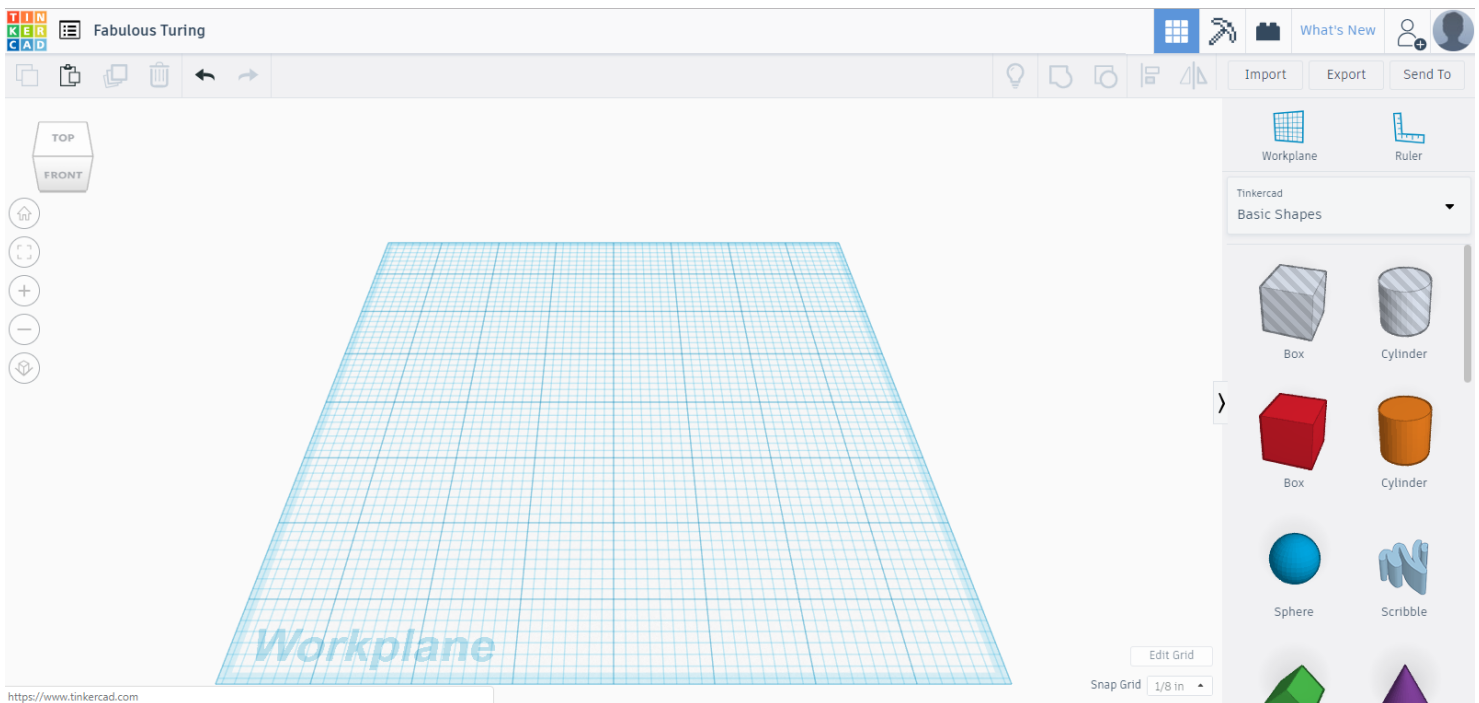


The blue grid that takes up the majority of the space is your Workplane, where you will be creating and altering 3D models. The top and side menus will help you along the way.

**Fun fact:** Tinkercad autosaves as you're working; don't worry about losing anything!

A few things you can do with the top menu: import and export files; change the name of your model; undo and redo steps; group and ungroup objects; and align objects to each other.

The left menu allows you to change the view of your workplane, while the right menu allows you to select shapes, text, and characters to add to your design.

See the next two pages for an in-depth look at what these different tools can do.

# Top Menu

**TINKERCAD** ☰ Daring Lappi-Jaban

(1) (2) (3)
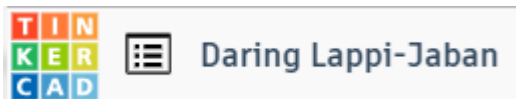
1. Return to your Tinkercad home page
2. Shows a list of all your designs
3. This is the name of your design - click to change it. Tinkercad will automatically assign a silly name when you first open a new design.

Mode:
4. Regular mode - normal shapes
5. Blocks mode - view your design in blocks (like a video game)
6. Bricks mode - view your design in bricks (like Legos)
--------------------------------------------------------------------------------------
7. Click here to see information about the latest version of Tinkercad
8. Add other users as collaborators for the current design
9. Your personal Tinkercad profile

(4) (5) (6)

What's New

(7) (8) (9)

(10) (11) (12) (13)

You must have an object selected to use the following:
10. Copy / paste
11. Duplicate object
12. Delete object
13. Undo / redo (you can also undo with ctrl + z)

14. Show all - unhide all objects (to see how to hide objects, see page 4 under Shapes & Grid)
15. Group / ungroup - use these tools to merge shapes together or bring them back to their original states
16. Align - select multiple shapes to use this; align the shapes to each other using the dots that appear on the workplane
17. Flip shapes using the arrows that appear on the workplane
18. Import files - STL (3D) and SVG (2D) are the most common
19. Export your design to your computer or a thumb drive
20. Download a picture of your design, share it with 3D communities around the web, or invite people to view it with a link

(14) (15) (16) (17)

Import    Export    Send To

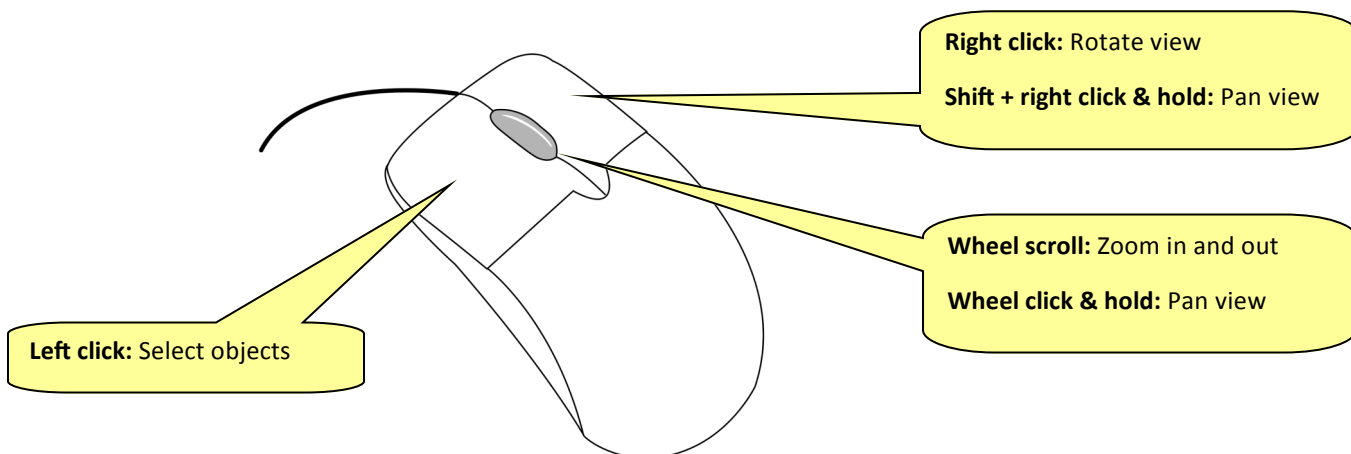(18) (19) (20)

# Side Menus

**1** TOP FRONT

**2**

**3**

**4**

**5**
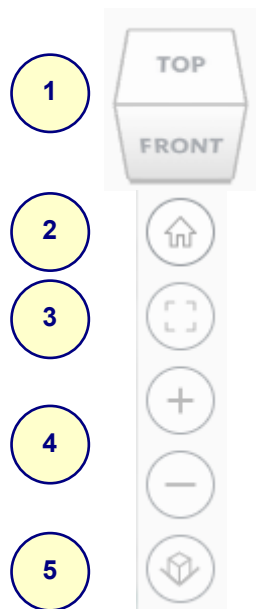
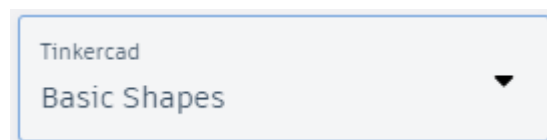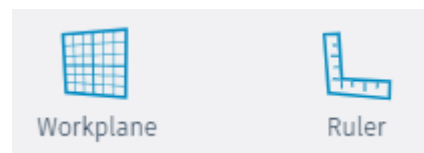The **left menu** allows you to change your view of the workplane:

1. Click on the side you want to view
2. Return to home view
3. Zoom in on the selected object
4. Zoom in and out - you can also do this by scrolling the mouse wheel
5. Switch between an orthographic and perspective view. Human eyes are more accustomed to perspective views (that's how we see things), but the orthographic view gives you a flat viewpoint that can help with a straight, undistorted view of your object (especially from the side).

You can also change the view by using the mouse buttons:

**Right click:** Rotate view

**Shift + right click & hold:** Pan view

**Wheel scroll:** Zoom in and out

**Wheel click & hold:** Pan view
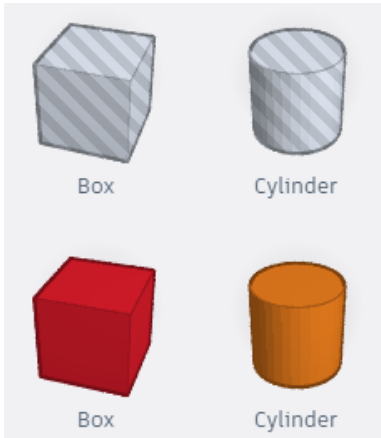
**Left click:** Select objects

The **right menu** allows you to change the workplane and add a ruler for easy measurements. It is also where you choose which shapes you will work with for your model.

6. Use this tool to add another workplane to any side of an object. When you add a workplane, new shapes will snap to that workplane instead of the one this is laying flat. This means you can easily add shapes on a new axis. Confusing? Give it a try!
7. Adds a ruler to the workplane
8. This dropdown menu allows you to choose from a wide variety of shapes, text, numbers, and characters. Go into the different menus and see what's available!

Workplane          Ruler

**6**          **7**

Tinkercad

Basic Shapes

**8**

# Shapes & Grid

Box   Cylinder

Box   Cylinder

To add a shape to the workplane:

- Click on the shape under the dropdown menu
- Click on the workplane where you want to place the shape
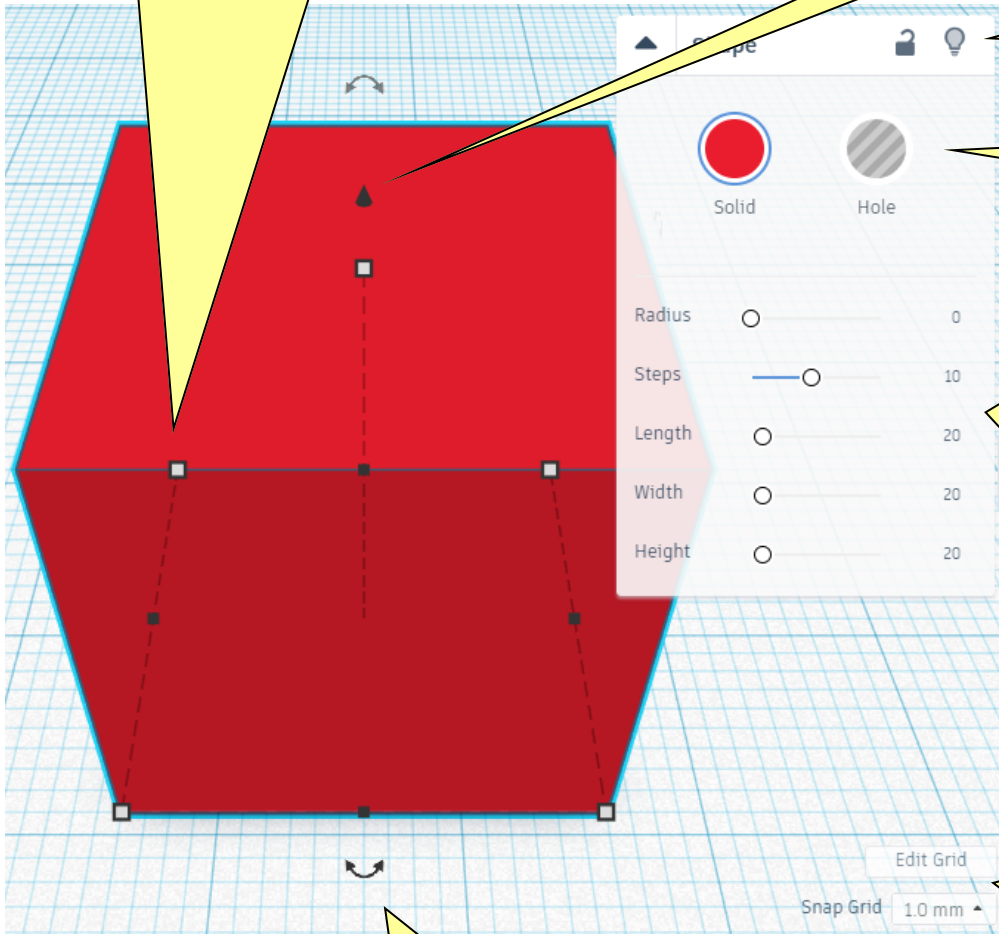- The grey striped shapes will add a hole instead of a solid object

Use the black and white squares to adjust the object's length, width, and height. Click on the white squares to get exact measurements that you can change.

Use the cone on top to lower or raise the object

Lock or hide the selected object

Change the shape between a solid object and a hole

Solid   Hole

Radius    0
Steps     10
Length    20
Width     20
Height    20

These settings will change depending on the shape (and some shapes don't have any). To change the way the object looks, move the bars left and right or change the numbers on the side. You can do a lot with these settings!

Edit Grid
Snap Grid  1.0 mm

Click "edit grid" to change between millimeters and inches. Change the Snap Grid to get more precise measurements by making the number smaller.

Use these bent arrows to rotate the object

# Moving Objects / Shortcuts

**Moving object(s)**

| | |
|---|---|
| `↑` / `→` / `←` / `↓` | **Move** object(s) along X/Y |
| `ctrl` + `↑` / `↓` | **Move** object(s) along Z |
| `Shift` + `↑` / `→` / `←` / `↓` | **×10 Nudge** along X/Y |
| `ctrl` + `Shift` + `↑` / `↓` | **×10 Nudge** along Z |

**Keyboard + mouse shortcuts (press and hold kbd btn, then move mouse)**

| | |
|---|---|
| `Alt` + left mouse button | **Duplicate** object(s) |
| `Shift` + left mouse button | **Select** multiple object(s) |
| `Shift` + hold while roating | **45° roation** |
| `Alt` + hold *side handle* | **Scale (1D)** |
| `Alt` + hold *corner handle* | **Scale (2D)** |
| `Shift` + hold *corner handle* | **Scale (3D)** |
| `Shift` + `Alt` + hold *corner handle* | **Scale (3D)** |
| `Shift` + `Alt` + hold *top handle* | **Scale (3D)** |
| `Shift` + right mouse button | **Pan view** |

## More Shortcuts

**General shortcuts**

| | |
|---|---|
| `ctrl` + `C` | **Copy** object(s) |
| `ctrl` + `V` | **Paste** object(s) |
| `ctrl` + `Z` | **Undo** action(s) |
| `ctrl` + `Shift` + `Z` | **Re-do** action(s) |
| `ctrl` + `G` | **Group** object(s) |
| `ctrl` + `shift` + `G` | **Un-group** object(s) |
| `ctrl` + `D` | **Duplicate** in-place |
| `ctrl` + `L` | **Lock** object(s) |
| `ctrl` + `A` | **Select** all object(s) |
| `Del` | **Delete** object(s) |
| `W` | **Workplane** toggle |
| `R` | **Ruler** toggle |
| `F` | **Fit view** to selected object(s) |
| `D` | **Drops** object(s) to work plane |