

Tic-Tac-Toe Print & Play Guide

A 69 mm board and ten pieces, off three plates in about an hour.

[Three Plates](#)[No Supports](#)[Pre-Configured 3MFs](#)

Built by MakerX Designs · Virginia Beach, VA · makerxdesigns.com · © 2026

A pocket-sized tic-tac-toe set with recessed squares, so the pieces sit down in the board instead of sliding around on it. Everything prints flat and the whole game costs about half a dollar.

In the download

File	What it is
makerx-tictactoe-all.3mf	Start here. All four plates in one project — print the base you want, plus both piece plates.
makerx-tictactoe-1colorbase.3mf makerx-tictactoe-2colorbase.3mf	The board on its own, in one color or two. Same board — print <i>one</i> .
makerx-tictactoe-x-pieces.3mf makerx-tictactoe-o-pieces.3mf	Five X and five O. Print both.
makerx-tictactoe-frame.stl · -x.STL · -o.STL	The raw meshes for your own slicer. All three print flat, face down.

1 · What you are printing

The set	
Board	68.8 × 68.8 × 3.5 mm (2.7 × 2.7 × 0.14 in)
Pieces	X 19.8 mm · O 19.5 mm · both 5.0 mm thick
How many	Five of each — a game needs five and four, so you get one spare
Supports	None. Every part is a flat plate on the bed
Costs you	17.13 g PLA · 1 h 06 m · about \$0.52

2 • Slice it

- 1 Open `makerx-tictactoe-all.3mf` in Creality Print, or any slicer that imports 3MF project files.
- 2 When it asks whether to load the project's print settings, **say yes** — that is the whole point of shipping a 3MF rather than a bare mesh.
- 3 **Pick your base** — plate 1 is the one-color board, plate 2 the two-color one. Print *one*, then plate 3 (O pieces) and plate 4 (X pieces).
- 4 Using the STLs instead? Lay all three flat, face down. Nothing needs reorienting.

★ No supports, and that is not a setting you need to change

Every part here lies flat on the bed — the board is 3.5 mm thick, the pieces 5 mm. Nothing overhangs, so the slicer generates **no support material at all**, even though the profile has supports switched on. Leave it be.

3 • The profile baked into the 3MFs

Using your own instead? Match these — sliced and print-tested on a Creality Hi 2, 0.4 mm nozzle.

Quality	
Layer height	0.10 mm (0.20 first layer)
Walls	2 loops
Top / bottom	5 / 3 layers
Infill	9 % gyroid

Supports & adhesion	
Supports	None generated
Brim	Auto, 5 mm
Plate	Epoxy resin

Material	
Filament	PLA as sliced · anything you like, it is a toy
Nozzle temp	220 °C
Bed temp	60 °C

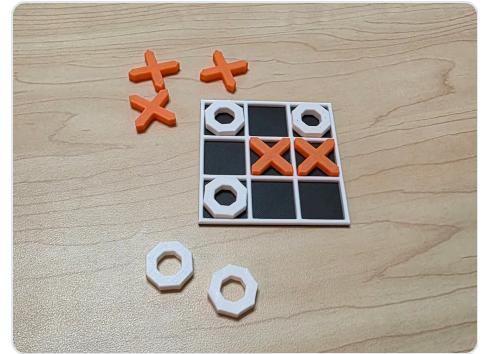
What each plate costs you	
Base, 1 color	21 m · 8.60 g
Base, 2 color	25 m · 9.48 g
O pieces	23 m · 4.26 g
X pieces	22 m · 4.27 g

4 • Before you hit print

- ☐ About 80 mm square of clear bed, brim included, and 20 g on the spool.
- ☐ You have decided **which base** you are printing.
- ☐ For the two-color base: a second color loaded and one filament change expected. It adds about **3 minutes** and 0.88 g, most of that the purge tower.
- ☐ Pieces and board in **contrasting colors** — the squares are recessed, so contrast is what makes a position readable across a table.

5 • Off the plate

- 1 Let the plate cool completely, then flex it and lift the parts off.
- 2 Peel the brim from one corner of the board and work it around the edge. The pieces have a brim too — ten small ones, so do not rush this bit.
- 3 Run a fingernail around the inside of each of the nine cells. The first layer squashes out slightly at 0.20 mm, and a lip inside a cell is what stops a piece sitting flat.
- 4 **Test-fit every piece.** Drop each X and O into a cell. They should fall in and lift out without a fight.
- 5 If one is tight, take a couple of passes off its edge with a deburring blade rather than forcing it — the piece is easier to trim than the cell.



Ten pieces and a board. The squares are recessed, so a piece drops into its cell and stays put — the reason contrasting colors matter more here than on a printed-grid board.

★ If every piece is tight, it is the first layer, not the model

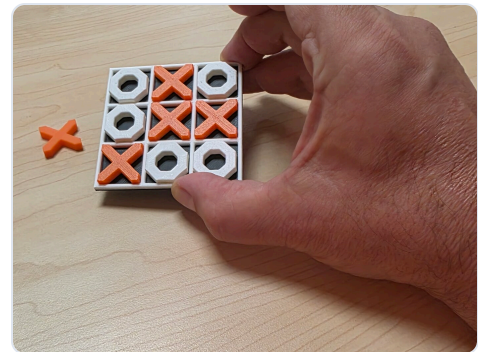
X and O are 19.8 and 19.5 mm against a 20 mm cell, so there is only a fraction of a millimeter of clearance by design. A squashed first layer eats all of it. Print the pieces again with a touch less first-layer squish before you scale anything.

6 • Play it

- 1 X goes first. Nine cells, the usual rules, and no one has ever needed instructions for this part.
- 2 You have **five of each** and a game needs at most five and four, so there is a spare in the box for the one that ends up under the sofa.
- 3 To reset, tip the board over your hand — the pieces sit in their cells, not clipped in, so they all come out at once.

7 • Honestly

- **The pieces are small.** 19.8 mm across and 5 mm thick, in ten separate parts. This is a desk toy and a travel game, **not a toy for a child under three** — every piece is a choking hazard at that age.
- **Print it in a color you can see.** The board's cells are recessed rather than printed lines, so the game reads by contrast. Orange X on a white board with dark cells is what is in the photographs and it works; white on white will not.
- **The two-color base is cosmetic.** It is the same geometry as the one-color plate. If your printer has no way to swap filament, you lose nothing but the dark cells.



Small enough to palm. The recessed cells hold a finished position while you pick the whole board up and move it.

Where precision meets the printer

Thanks for printing this one. If it got your controller off the bench and put it somewhere you can actually read it, that is exactly what it was designed to do.

For years my design world existed entirely behind a screen. As a mechanical engineer I spent countless hours building complex CAD models, but there was always a missing link — the ability to hold an idea in my hands. That changed in January 2026, when I went headfirst into 3D printing. The moment that first layer stuck to the bed, the gap between concept and reality vanished.

Coming from a background where precision is everything, tolerances aren't suggestions to me — they are a religion. I didn't want to print trinkets; I wanted to apply industrial engineering discipline to desktop manufacturing. Every wall count, every layer height and every infill percentage in this guide is a deliberate decision backed by testing. If a part can't handle the environment it was built for, it goes back to the drawing board.

Three principles behind every print

01

Functional Engineering

High-utility, real-world solutions rather than purely decorative models. If it doesn't solve a practical problem, it doesn't leave the workstation.

02

Rigorous Tolerances

Designed in professional CAD with mechanical intent — press-fits that click and assemblies that work straight off the build plate. No sanding, no filing, no guesswork.

03

Bridging the Gap

Industrial structural integrity at maker speed. Proving a desktop printer can produce parts worthy of real engineering applications is what drives every release.

The workshop

Mechanical engineering degree · SolidWorks precision modeling · two Creality Hi printers · Virginia Beach, Virginia · every design free to download.

A note on sharing

I'm thrilled when people use and share these designs. I just ask that you respect the license shown on the model listing and give the required credit, so I can keep contributing to the collective workshop.

IF THIS ONE EARNED ITS SPOT

A **Like** or a **Favorite** on the model page takes a second and genuinely helps. A **Boost** helps more than either — it is what puts a design in front of makers who would never otherwise come across it. And if you **Follow** me, new models and updates land in your feed as they are released. However you choose to support it, thank you — it is what keeps everything here free to download.

Want a bigger board, deeper cells, or your own marks in place of the X and the O? Leave a comment — the frame is a simple part and variants are easy.

Happy printing. — MakerX Designs · makerxdesigns.com · © 2026