

20-Piece 3D Puzzle



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Summary

This challenging twenty-piece puzzle forms an icosahedron when assembled.



9.90 hrs



3 pcs



0.20 mm



0.40 mm



PLA



93 g



Prusa MINI /
MINI+

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This 3D puzzle forms an icosahedron when solved. It's a definite challenge, as you've got to find five pieces which fit together before you can really start making much progress. It takes me about fifteen minutes to put it together.

Printing

The **icosahedron.stl** file contains all 20 pieces in their solved positions. To print, you will need to "Split to objects" and then arrange them with the correct faces down--they are NOT reversible. I've done this in **icosahedron.3mf**. On the Prusa Mini, you can print about 7 or 8 pieces at a time, so it will take three prints.

You may need to experiment to get the pieces to fit together well. Depending on your particular printer and filament, you may need to use

XY Size Compensation (in the Expert settings on PrusaSlicer) to achieve a good fit between the pieces. Increasing the elephant foot compensation won't hurt either, in order to make sure there's no additional interference caused by elephant foot.

Begin by printing just two of the pieces. They should fit together without needing to apply much force. If they fit too tightly, decrease the XY Size Compensation. If they are too loose, increase the XY Size Compensation. With this particular puzzle, too loose of a fit can make it difficult to get the puzzle started, as it takes a minimum of 5 pieces before the puzzle will begin holding itself together.

The **gcode** and **3mf** files were made using the following settings, which worked well for me:

- Prusa Mini+
- Prusament PLA
- 0.2 mm layer height
- No supports
- 15% infill
- XY Size Compensation = -0.05 mm
- Elephant foot compensation = 0.3 mm

Model files

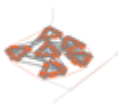


icosahedron.stl



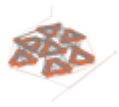
icosahedron.3mf

Print files



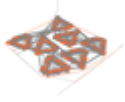
icosahedron_02mm_pla_mini_2h51m.gcode

PLA 0.40 mm 0.20 mm 2.85 hrs 27 g Prusa MINI / MINI+



icosahedron_02mm_pla_mini_3h34m.gcode

🌀 PLA 📏 0.40 mm 📐 0.20 mm ⌚ 3.56 hrs ⚖️ 33 g 🖨️ Prusa MINI / MINI+



icosahedron_02mm_pla_mini_3h29m.gcode

🌀 PLA 📏 0.40 mm 📐 0.20 mm ⌚ 3.49 hrs ⚖️ 32 g 🖨️ Prusa MINI / MINI+

[Find source .stl files on Thingiverse.com](#)

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