



Catapult Card

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Summary

A fully 3D printed catapult, prints flat within a card, so it fits in a C5 envelope, fairly powerful, lots of fun!



3.99 hrs



1 pcs



0.20 mm



0.40 mm



PLA



40 g



Prusa
MK3/S/S+

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Tags: [card](#) [gift](#) [fun](#) [catapult](#)

Catapult Card

A fully 3D printed catapult, prints flat within a card, so it fits in a C5 envelope, fairly powerful, lots of fun!

Why

Designed to be printed flat, including all the parts required for assembly.

It's a fun little toy, great for launching sweet wrappers or whatever else you feel like. I designed this to be fully 3D printable, and fairly powerful. I

also wanted it to fit through a standard letterbox, so I could send it to my friends in the mail as a surprise.

Ensuring the sides would be strong enough, to stay connected to the base and top support during use took a few prototypes. I settled on a push fit, bump location method to balance joint strength and printability. It requires a bit of force (or some gentle hammer taps) to push them together initially but when located the joints are nice and strong.

Note: This model works great in both PLA and PETG. However, I just printed one of these in Prusament PC-CF. It has a bit too much power, the back pins of the sides started to come loose after a few shots, but a little superglue solved this!

Printing and Assembly

I've included a Print file for this with my print settings, I've also included the PrusaSlicer Project file so you can print it however you want.

For smaller printers I've re-arranged the card, this card is 157mm * 157mm, catapult is same size as the original!

If you want to print the parts individually, or as a set without the card frame and connectors, I've added a PrusaSlicer project called 'CatapultCard_Square165_PartsOnly_PrusaSlicer.3mf', in the files section. **(Note: If you are at all worried about small parts detaching from the bed during printing, I advise printing the parts individually, the card frame helps mitigate this issue.)**

Assembly Guide

If you want a printable version of the instructions have a look in the files section, CatapultCardAssemblyGuide.pdf is what you're looking for!

Remove parts from the card. use some wire cutters, small scissors or a cutting board and a sharp knife.

Assemble the sides. The short end of the pins go into the square hole in the sides, then the springs go onto the pins. Match the direction of the springs to those shown in the drawing.

Assemble the arm, arm support and sides. Line up the arm support with the corresponding hole, and the pins on the arm with the spring holes and push together. Do the same with the opposite side.

Note: The drawing shows the pins outside of the spring holes, but after this step the pins on the catapult arm should be inside the holes at the end of each spring.

Assemble the base and sides/arm - assembly.

Line up the sides with the base. The base is flat on the bottom, on the top side there's a small depression around the holes.

Place on a flat table and tap with a hammer as indicated by the arrow in **positioning drawing 1 (below)**, on both sides until the back legs about halfway located.

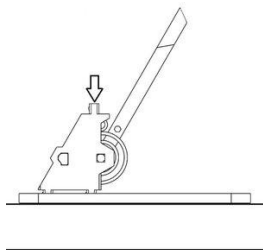
Turn the catapult over and position on the edge of a table as shown in **positioning drawing 2 (below)** and tap the base as marked by the arrow. You should locate the front pins fully, so that the ends of the pins are almost flush with the base underneath.

Next turn back over and tap the back legs all the way in, the sides should now be fully located in the base.

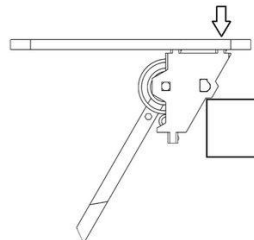
Add the top support to the main assembly to finish.

Line up the top support as shown in **positioning drawing 3 (below)**.

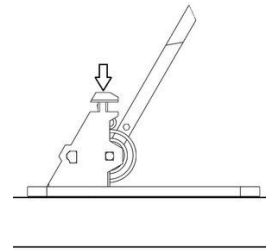
Tap the top support down to fully locate the top pins.



Drawing 1



Drawing 2



Drawing 3

Miscellaneous Thoughts

I don't advise you give this to young children, lots of small parts, ability to fire projectiles... so older kids/adults.

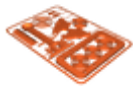
I forgot to mention the target! I had space so i added a target with a couple of feet to stand it up, hitting it is quite a challenge...

Enjoy,

Adam M

[Update - 08/02/23: Added model file for just the catapult arm and support. Print with supports set to 'For support enforcers only'.]

Model files



catapultcard_prusaslicer.3mf



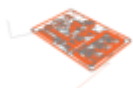
catapultcard_square165_prusaslicer.3mf



catapultcard_square165_partonly_prusaslicer.3mf

catapultcard_arm-armsupport_prusaslicer.3mf

Print files



catapultcard_02mm_pla_mk3s_4h5m.gcode

🌀 PLA 🌀 0.40 mm ≡ 0.20 mm ⌚ 3.99 hrs ⚖️ 40 g 🖨️ Prusa MK3/S/S+

Other files



catapultcardassemblyguide.pdf

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