

Cardapult, Quicker and Easier Method

by **clide** on April 20, 2009

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intro: Cardapult, Quicker and Easier Method

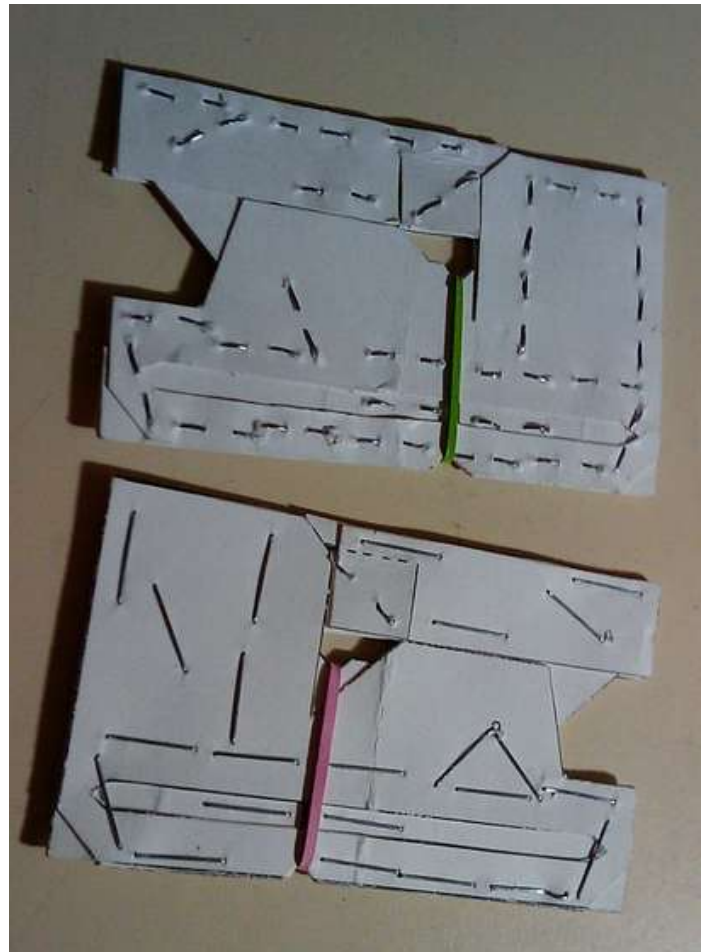
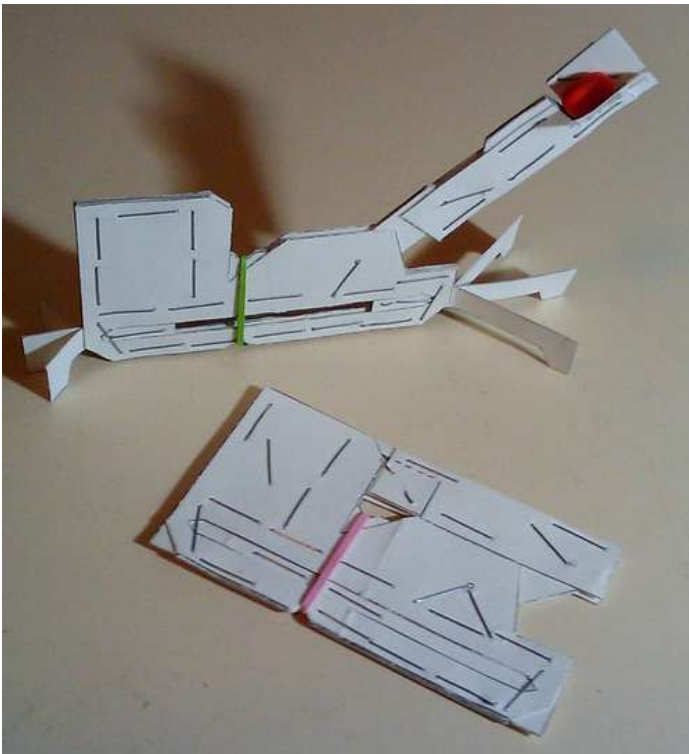
A lot of people have been making my [business card catapult](#) as just a fun little toy to play with and don't really need it to look clean and pretty. It can also sometimes be difficult to glue the cards together well enough that they don't fall apart. For this reason I have made a simplified construction method that needs less tools and time. This method also makes the card a little more durable and forgiving to abuse. The downside is that it is not as attractive as the original method.

This one can easily be made in less than an hour. For the assembly video below it took about 40 minutes, and I was taking my time to make sure and explain everything and get it right. So 30 minutes would be possible even for a first time build.

Here is a video explaining the assembly



It isn't really demonstrated much in action in that video, but it is pretty much the same as the [original card](#) in function.



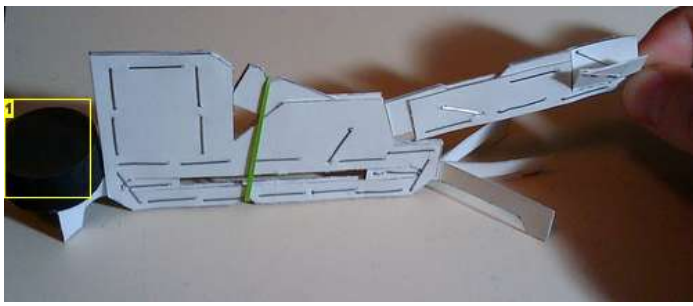


Image Notes

- 1. Weight. Card is not heavy enough to be fired without being held down.

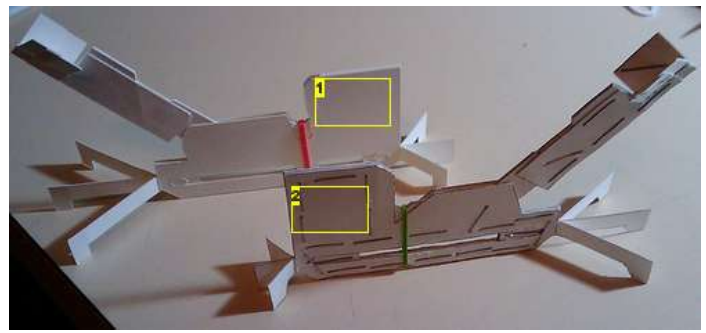


Image Notes

- 1. Original
- 2. Quick

step 1: Tools and Supplies

You only need a few things to make this.

Cardstock (the thicker the better, I use 0.012" thick and wouldn't suggest anything below that)

Printer

Scissors

Stapler with staples

Small rubber band

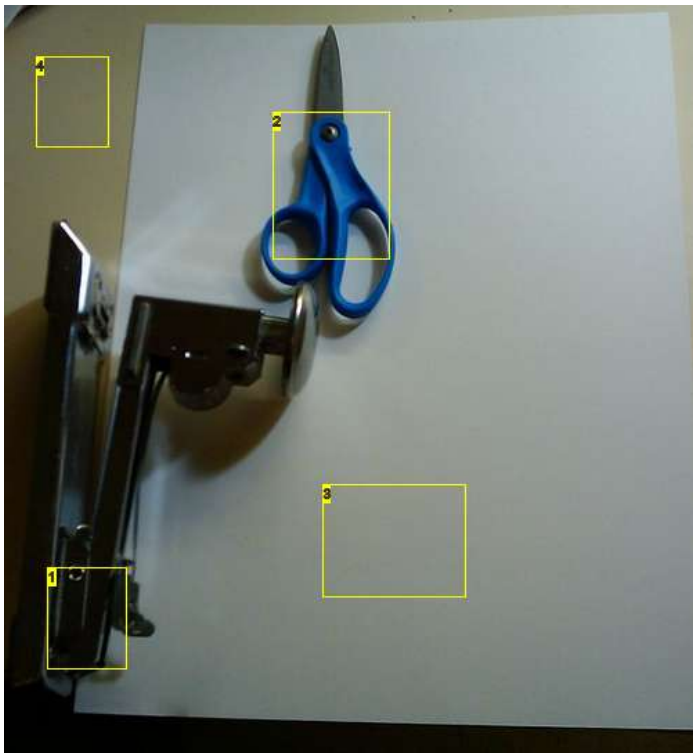


Image Notes

- 1. Stapler
- 2. Scissors
- 3. Cardstock
- 4. Rubber band and printer not shown

step 2: Print out the pattern

This pattern has been simplified in many ways to make it easier to cut by hand with a pair of scissors.

Make sure the page is not being scaled when you print it if you want business card size parts.

The pattern used for the one I built in this Instructable had a dashed line on the upper arm. I've removed that for clarification that nothing needs to be cut there.

quick.pdf is just the normal pattern and quickfilled.pdf has all the scrap pieces filled in with a gray color to make it easy to identify which parts you don't need.

Since Instructables now requires a Pro account to download files, I've uploaded them to my site so you can still download them for free. [Download here](#)

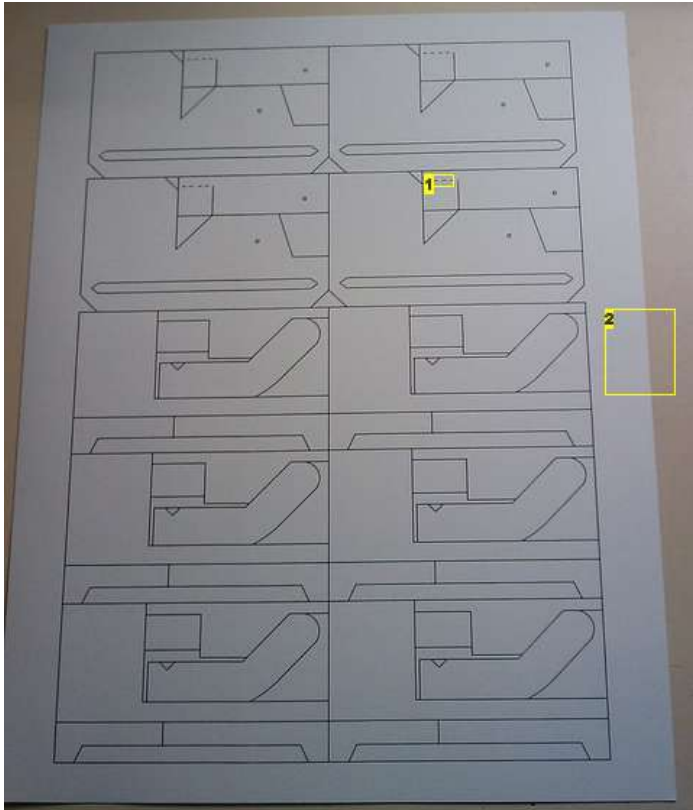


Image Notes

1. Dashed line removed from pattern. Pretend this isn't here.
2. Thick cardstock

File Downloads



[quick.pdf](#) ((612x792) 3 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'quick.pdf']



[quick.svg](#) ((765x990) 76 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'quick.svg']



[quickfilled.pdf](#) ((612x792) 7 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'quickfilled.pdf']

step 3: Cut out Parts

Cut along every line in the pattern except for the small circles which are just to mark key staple locations.

The only cut that may be tricky is the slot along the bottom of the outside face. For this one you can bend the card in half longways and make two snips along the lines to get a cut started.

The template has the parts for two cards, so you only need to cut out half if you are just making one.

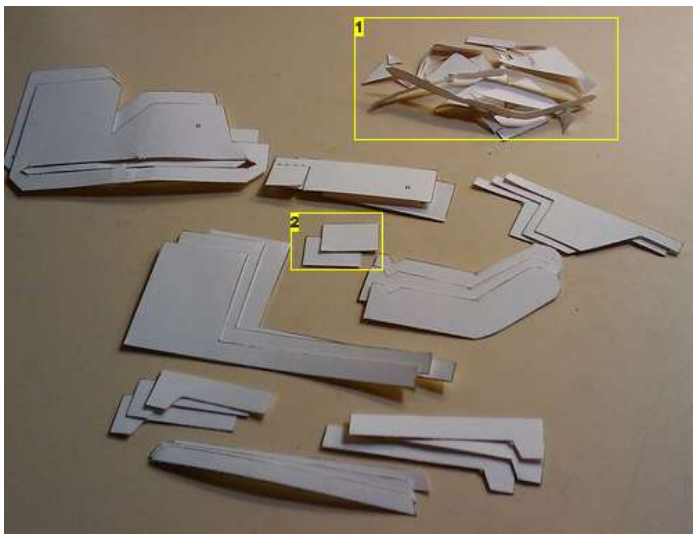


Image Notes

- 1. Trash
- 2. 3 on template, only need 2 per card

step 4: Staple in the large L piece

Put the three layers of the large L shape piece between the two outside layers and align the corners.

It is a little difficult to line up all the parts and hold them in place for stapling. If you are having problems then some double sided tape could be used to help hold the layers together for stapling.

You can add staples anywhere that there are 5 layers. I would just add 3 or 4 at the extremities for now and add reinforcements after the card is completely assembled.

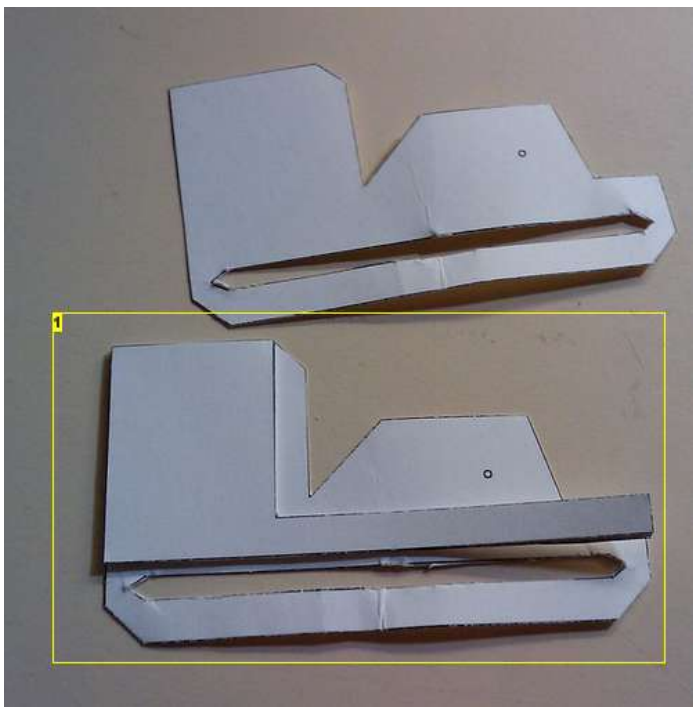


Image Notes

- 1. Showing the approximate location. Add the other outside face before stapling

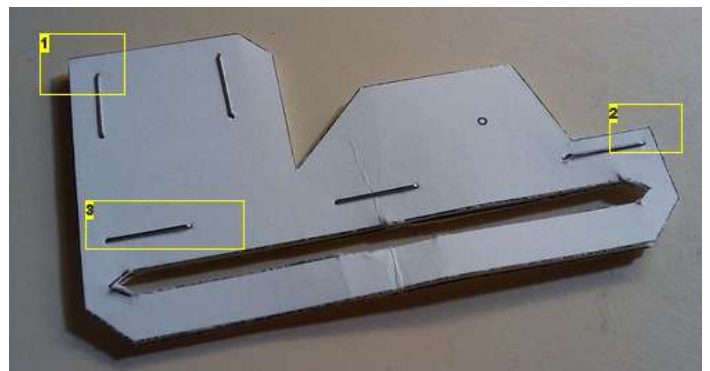


Image Notes

- 1. Inside and outside faces should be aligned in this corner
- 2. Inside and outside faces should be aligned in this corner
- 3. Staples can be added anywhere there are 5 layers

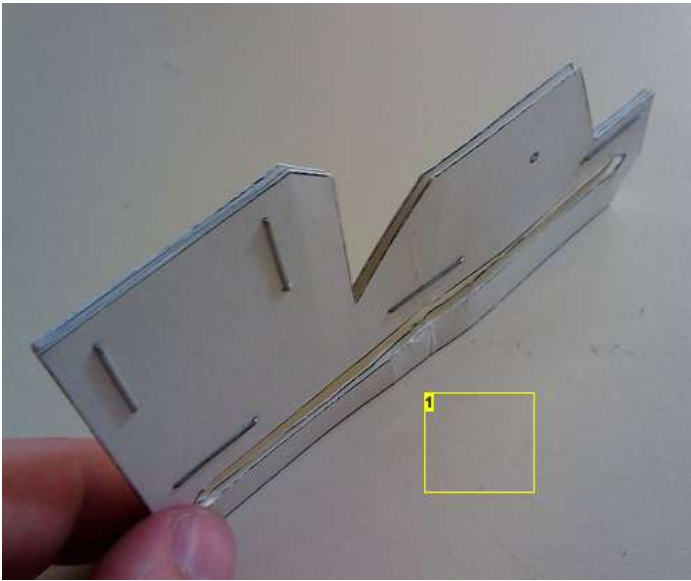


Image Notes
1. Another view

step 5: Staple the long skinny piece

The three long skinny pieces get stapled between the outside faces along the bottom of the card.

It may help to move these pieces just a hair below the edge of the outside faces to make sure there is room for the legs.

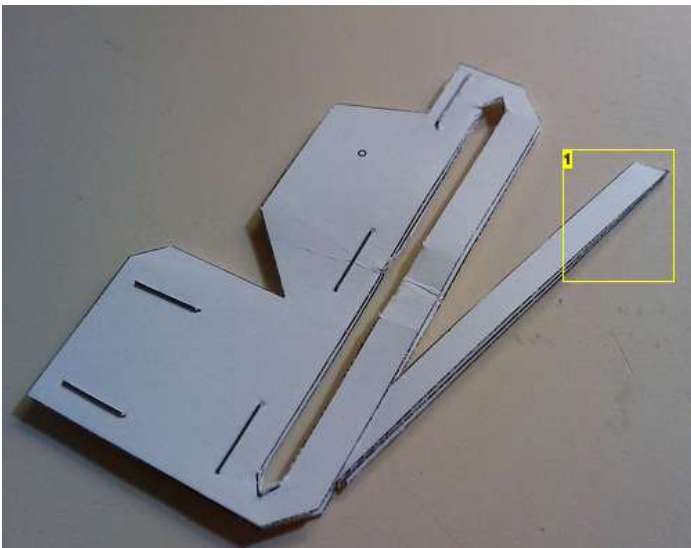


Image Notes
1. Slide these 3 layers into the bottom of the card

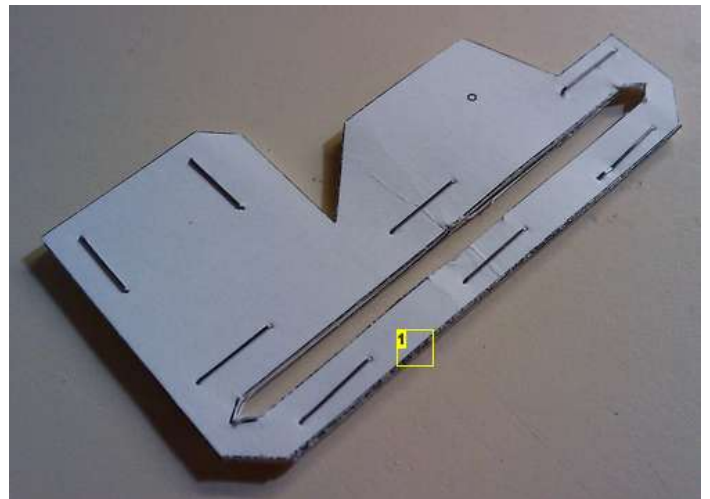


Image Notes
1. Align along bottom edge and staple

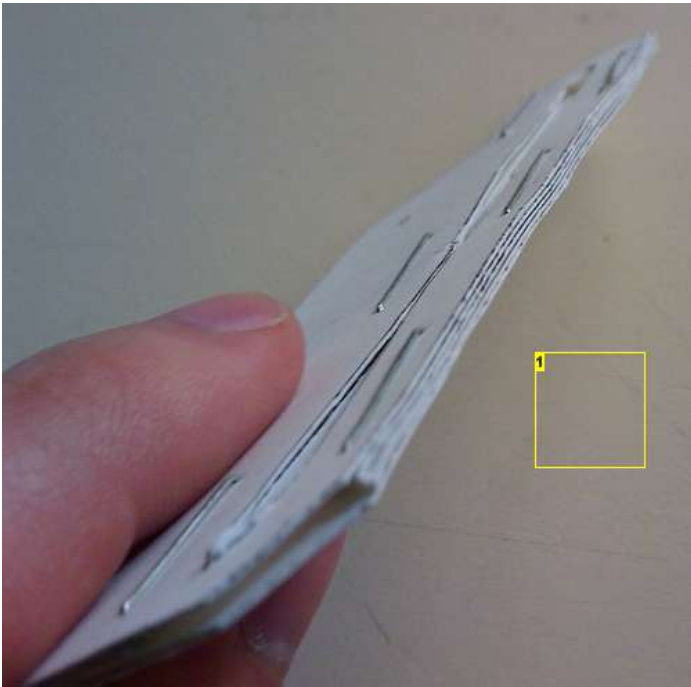


Image Notes
1. Another view

step 6: Staple the top arm together

Now three layers odd shaped piece with long skinny strips extending to the side gets stapled to the outside face rectangle.

Line up the parts on the corner opposite the flap and all along the top edge.

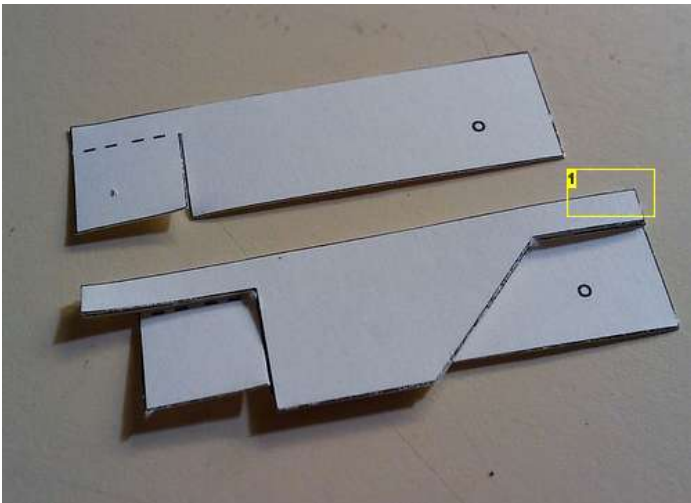


Image Notes
1. Align in this corner. Add the other outside layer before stapling

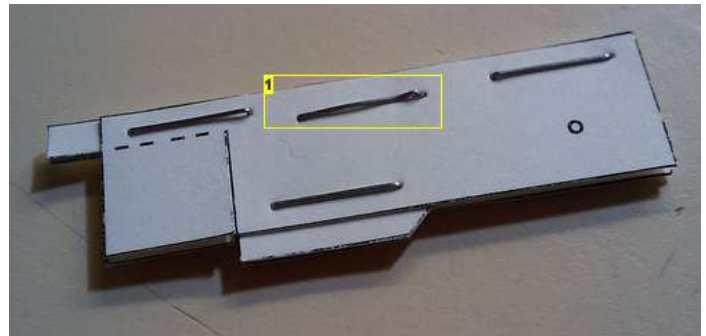


Image Notes
1. Staple through areas with 5 layers

step 7: Add the small rectangles to the flaps

Now bend back one of the flaps at a time and staple one of the small rectangles to each flap. If you are using standard size staples then they need to be at an angle across the flap to fit.

You will end up with a small rectangle that is not used. This can be discarded.

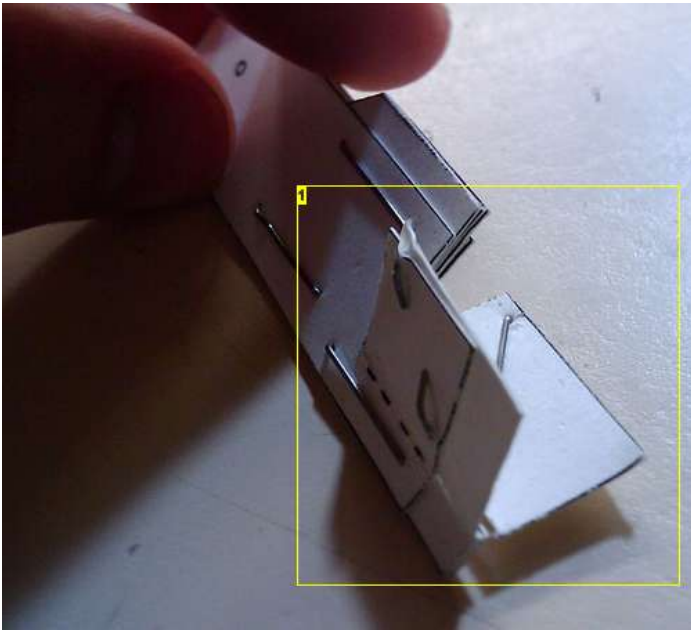
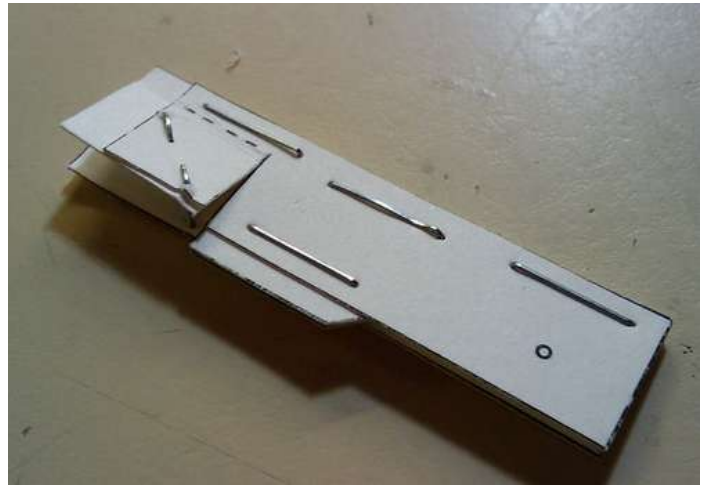


Image Notes

1. Staple flaps with a staple going at an angle across the flap.



step 8: Staple the lower arm to the upper arm

Unlike the other version of the cardapult that only uses two layers for the lower arm, this one uses all three. Line these up and slide them into the upper arm. They need to be parallel to the angled cut and up against the top of the slot.

Once they are in place you need to place one end of a staple as close as possible to the center of the circle marked on the face of the card. The other end of the staple needs to be off to the side of the lower arm so that it can pivot around the staple.

Make sure the arm can pivot properly before moving on to the next step.

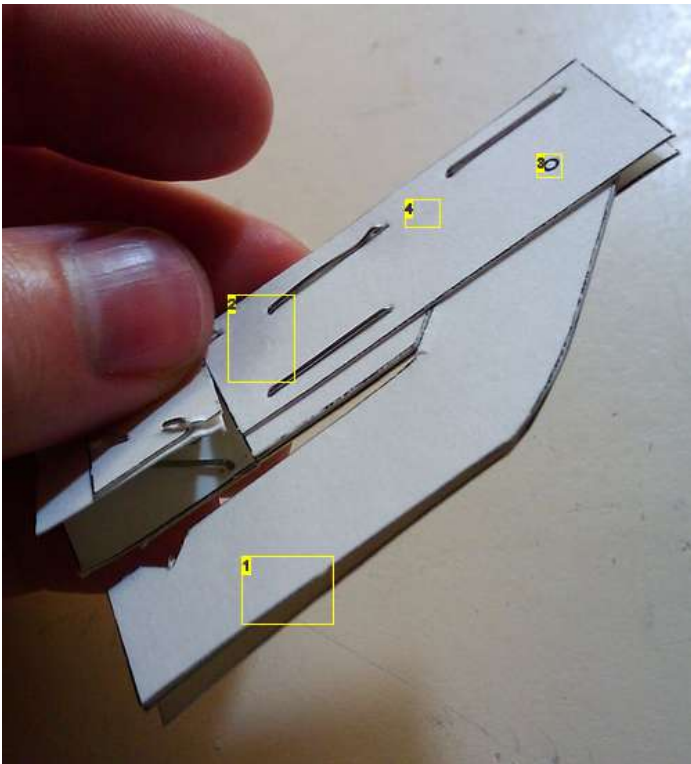


Image Notes

1. Lower arm. 3 Layers
2. Upper arm
3. One edge of the staple here
4. Other edge of staple somewhere over here

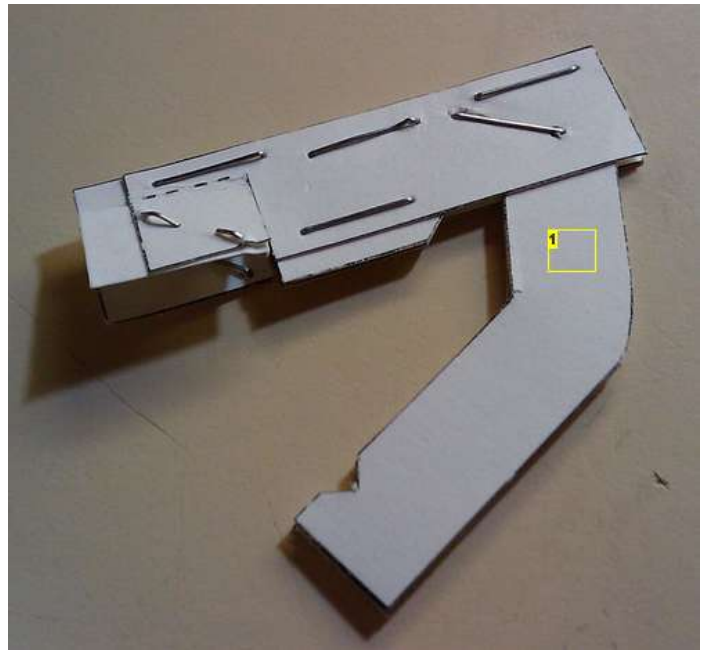


Image Notes

1. Make sure this can still pivot

step 9: Staple legs together

The legs can be stapled together outside of the card. Put a single staple on the inside portion of the legs.

Slide them into the card and make bends so that they can fold out when extended.



Image Notes

1. 3 layers, staple the ends

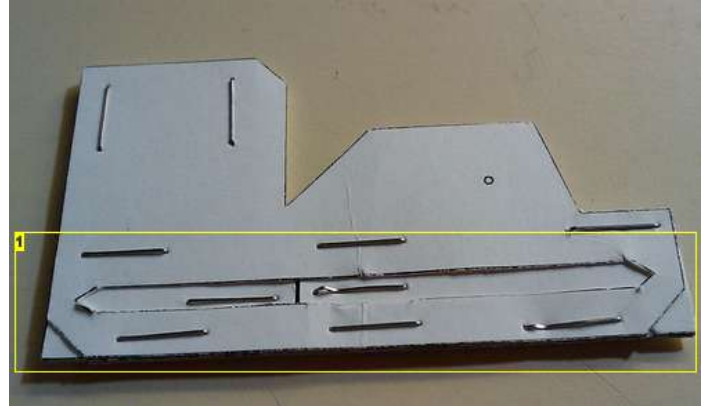


Image Notes

1. Slide legs into card

step 10: Staple the arm assembly to the other assembly

Slide the lower part of the arm assembly into the large assembly made in steps 4 and 5.

The lower arm should be resting against the large L piece and the outside face of the upper arm should be aligned with the outside face of the other assembly.

Again place one edge of a staple through the hole marked on the outside face with the other edge of the staple through the skinny part of the large L piece. Make sure the arm can pivot.

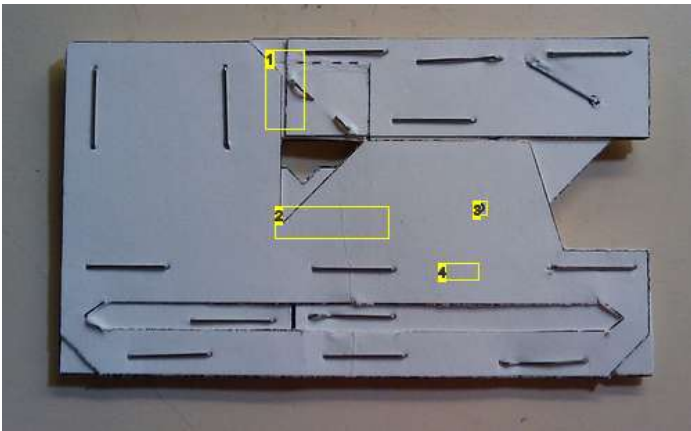


Image Notes

1. Align here
2. Arm should be all the way down
3. One edge of a staple here
4. Other edge of a staple on the large L piece

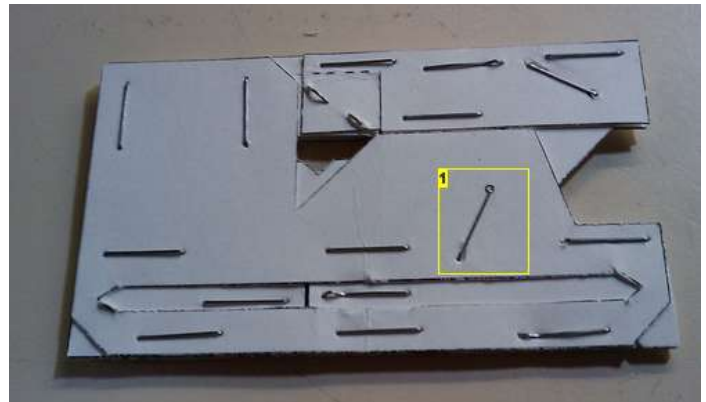


Image Notes

1. Stapled

step 11: Add rubber band

Cut a small V notch on the bottom of the card directly below the V-notch on the arm. Add a small rubber band and test out the card.

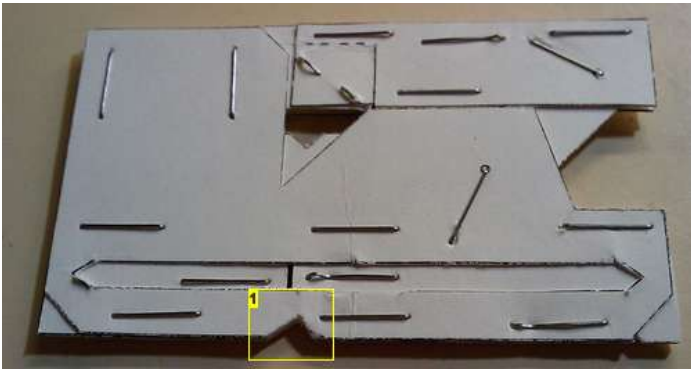


Image Notes
1. Cut V notch

step 12: Add reinforcement

Add as many staples as you like in places that won't interfere with the card's movement.

You can also use pliers to press the ends of the staples flat against the card. This makes it feel better and may help a little with strength.

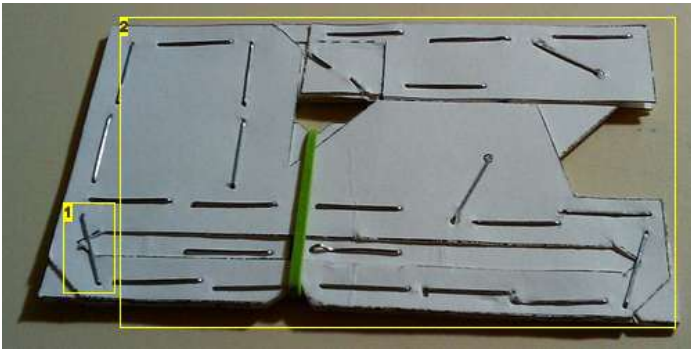


Image Notes
1. Spans across the large L and the bottom skinny piece. Helps hold legs in.
2. Staples can be added anywhere that wont interfere with card movement

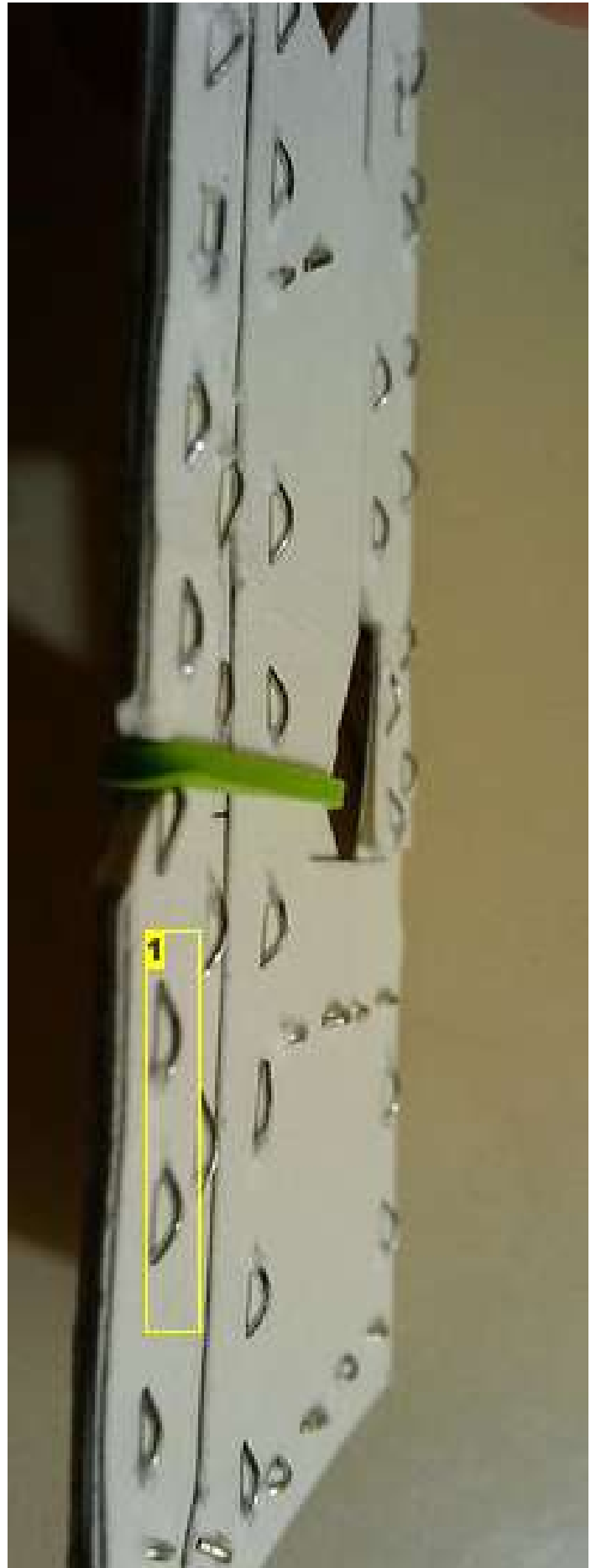
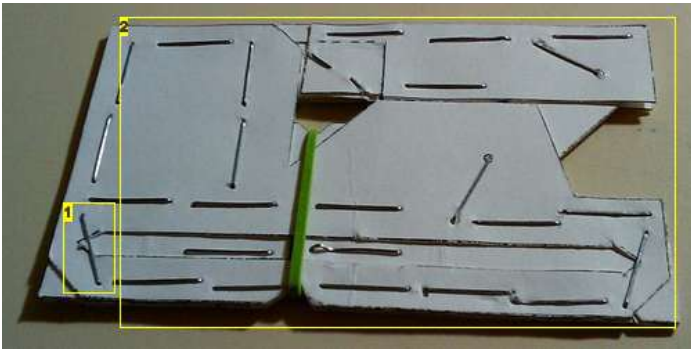


Image Notes

1. These can be bent down with pliers





Image Notes

1. After being bent down

step 13: Final thoughts

The weight added by the staples does cut down on the power some.

Even with lots of staples this card is limited to about the same range as the glued card. However this one just starts getting floppy and hard to use with too strong of rubber bands where the glued card will break. I think if staples were added to a glued card then it would probably make a stronger card that could use stronger rubber bands and shoot farther, but I haven't tried it.

My staples were mainly just added as strength was needed. If the pattern was more planned out and consistent then it may be possible to make a more visually appealing card with this method. If anybody comes up with cool staple patterns I would love to see them.

I think this would also look pretty cool done with rivets and a more durable material like plastic or metal.

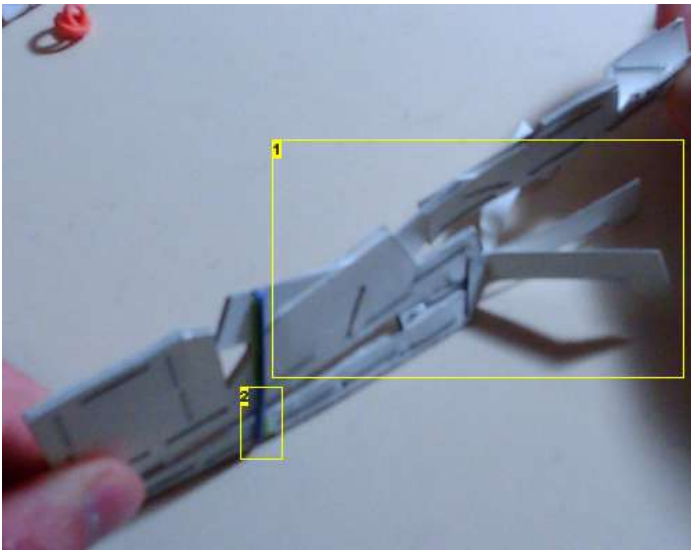


Image Notes

1. Overloaded. Card becomes wobbly
2. Two rubber bands

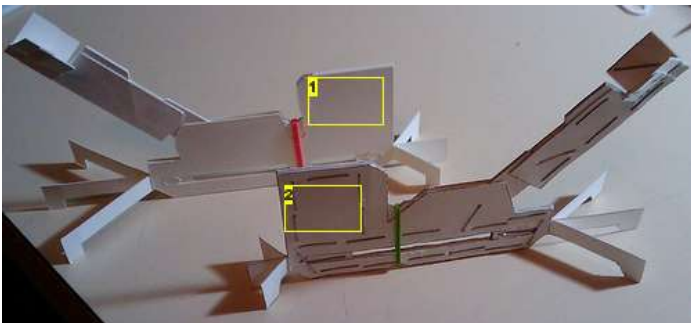
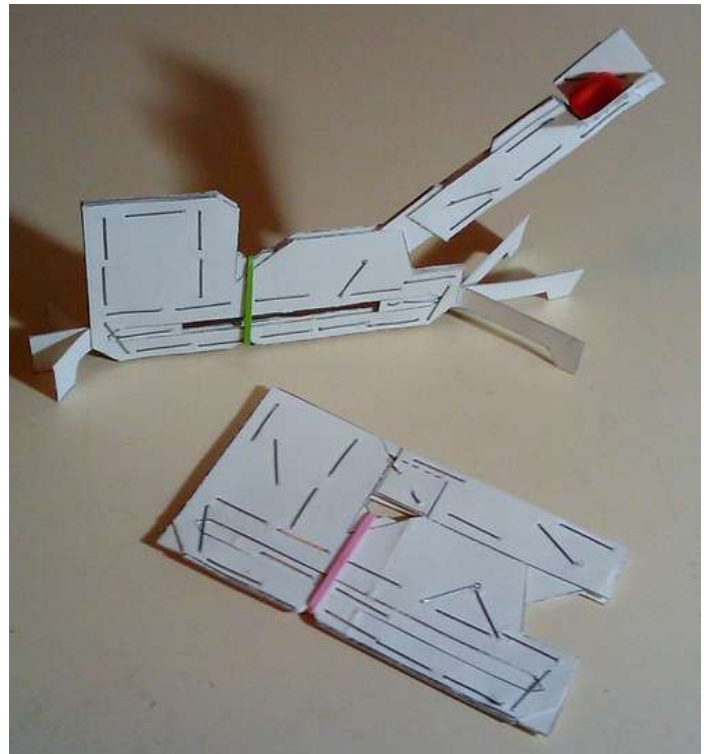


Image Notes

1. Original
2. Quick

