



Cardboard Dice Tower



by ehlastpo

Introduction:

In this instructable you will create a cardboard dice tower so that you can take the human error out of your dice rolls.

Learning Objective:

After completing this lesson, students will be able to create a dice tower out of cardboard. And be able to take the skills learned and tools used forward to be used on other projects.

Target Audience:

This project is great for students in 4th to 8th grades but certainly is not limited to that age group.

Standards:

1. Design in Technology and Engineering Education :

- Students are encouraged to see this instructable more as guidelines than concrete instructions. You should feel free to change the design and customize the concept as you see fit.

Practices:

1. Creativity:

- Students will be able to learn new ways that cardboard can be used and folded in order to create a completely different product, which can enhance their creative thinking ability.

2. Making and Doing:

- By following step by step instructions, students must fold cardboard, use tools, and assemble materials by themselves in order to build the final product.

Contexts:

1. Material Conversion and Processing:

- Students will learn how Cardboard can be cut and folded into different sizes. They will also learn the flexibility of materials in design.

Supplies:

For the dice tower you will need a few things

1. Good sized piece of cardboard (2' by 1' does great)
2. Exacto knife

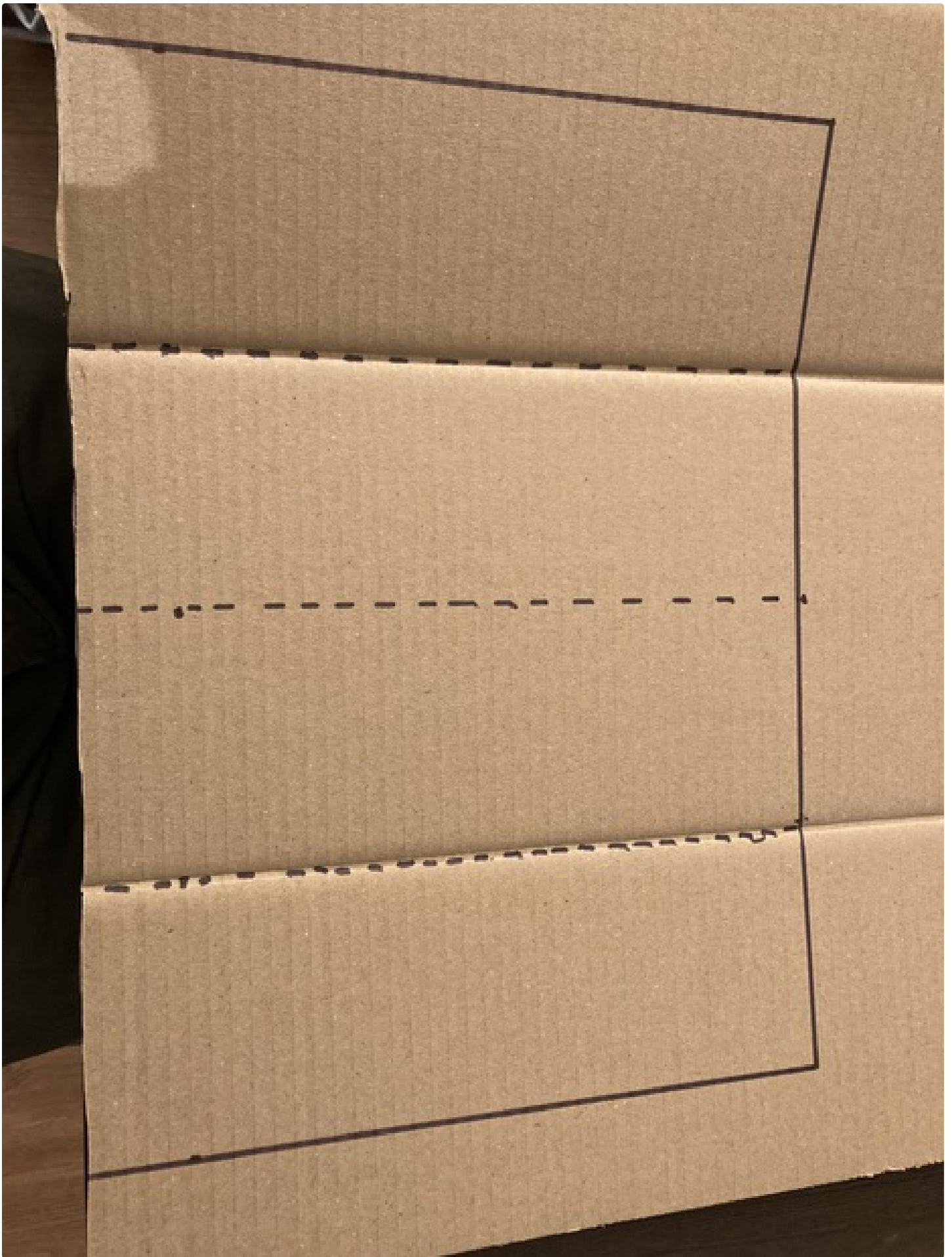
3. Ruler
4. Sharpie
5. hot glue gun
6. Cutting mat or other surface you don't care about



Step 1: Tower Outline

First thing we need to do is measure out four equal rectangles onto our cardboard blank. I ended up with four 10" by 3.5" rectangles, this was the right size for me but you may want to play with the size a little bit. As you can see in the photos some of the lines are dotted and some are solid lines, this is to differentiate lines that we will score from lines that we will cut all the way through. So from now on when you see a dotted line that means just score one side of the cardboard because that line will become a joint, and if you see a solid line you should cut all the way through. Your exterior lines of your four rectangles should be solid lines and the interior lines should be dotted. Once you have marked up your blank go ahead and make the appropriate cuts.







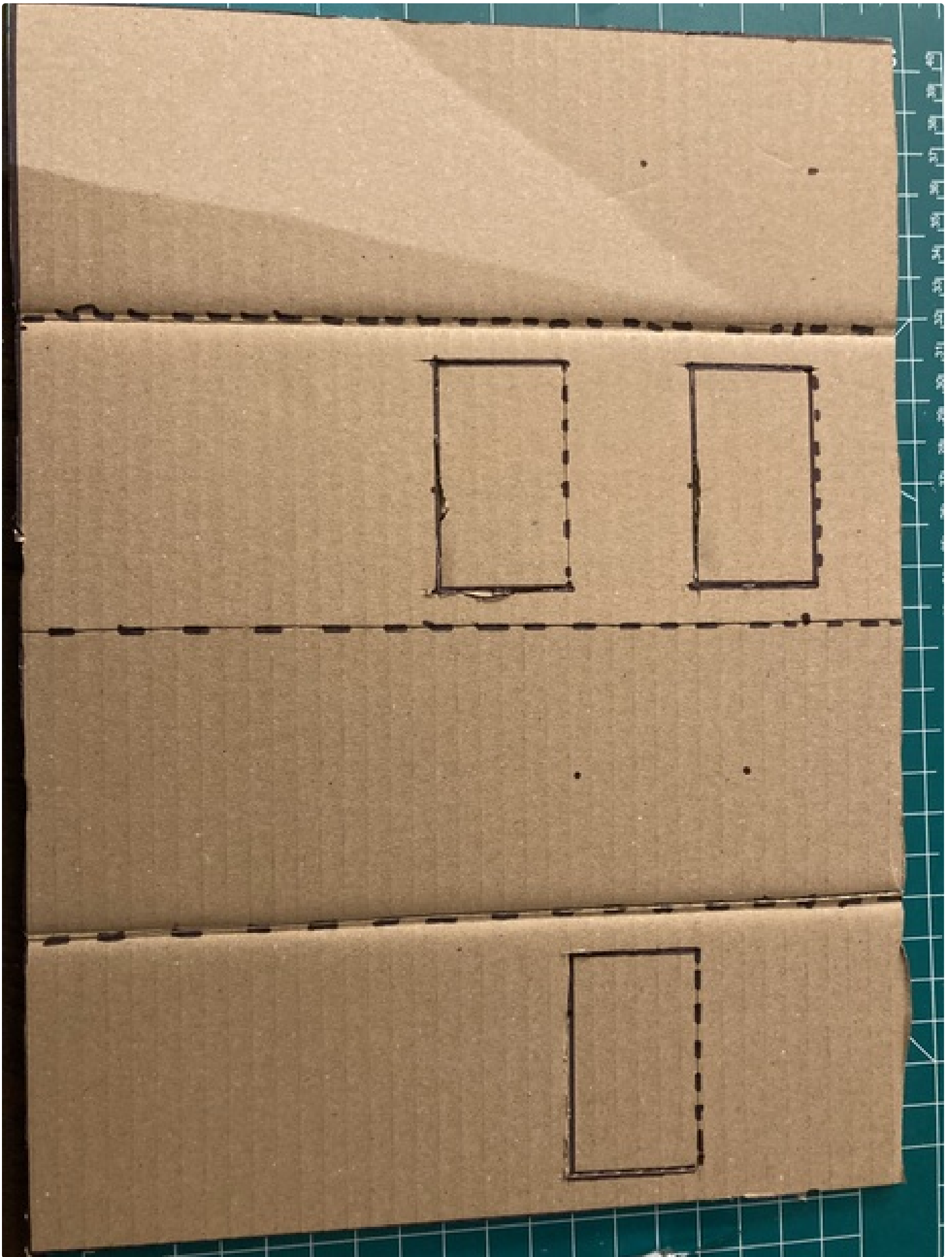
Step 2: Check Joints

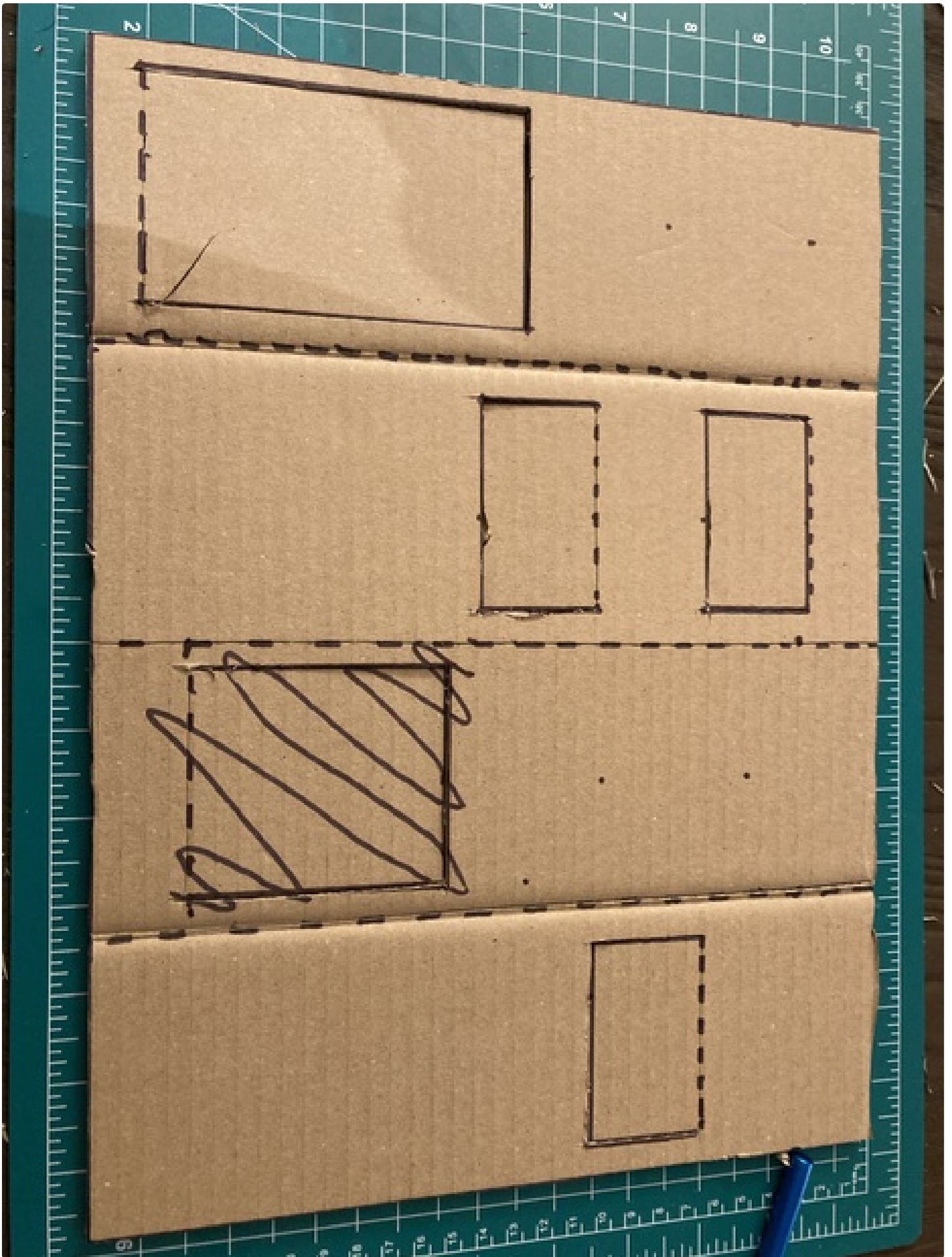
Once you have made your first cuts, bend the cardboard along the score marks, so that the uncut side faces inwards.



Step 3: Adding Rolling Flaps

Once you are sure the joints from the last step are good go ahead and lay the cardboard back down and mark out the rectangles that will become your flaps. You will need to make the top of your flap rectangles a dotted line and make sure that you are marking the flaps on the out side of the tower so that they will fold in. You will want some number of rolling flaps(I went with 3) and one exit flap. The rolling flaps should be on sides that end up opposite to one another and the flaps should alternate so the dice hits each one. The size of your flaps depend on the size of your tower so if you look at the example and make a similar size, though I would recommend making yours a little longer than mine. After you have made the rolling flaps, make a much bigger flap up side down on one of the other sides this will become your exit for the dice. Once you've made your cuts go ahead and press them in so you end up with flaps on the inside of the tower.



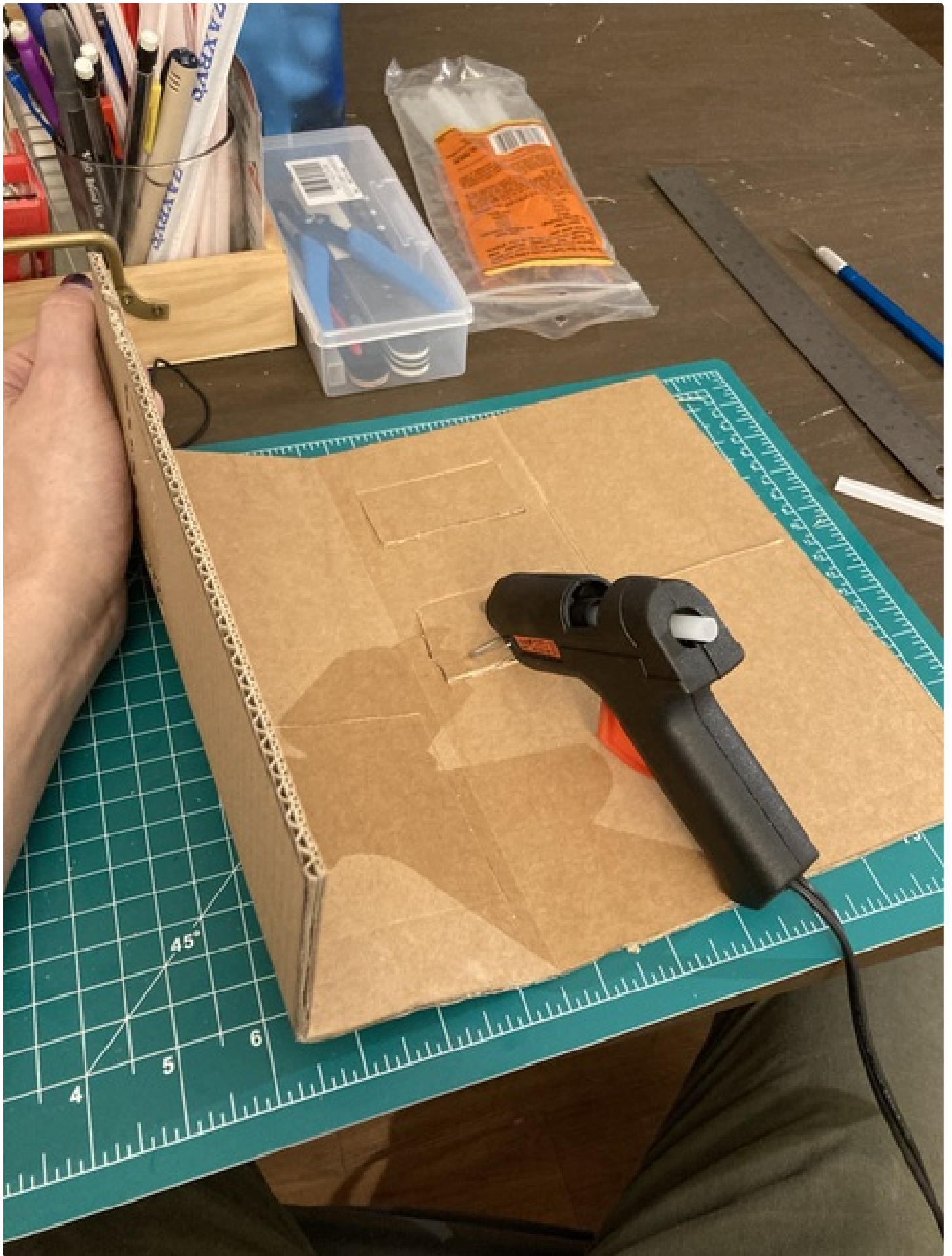






Step 4: Glue!

Using a whole bunch of hot glue start assembling the tower, fold the blank up into its tower form and glue the two open edges together. Move the flaps to the desired angle, and then glue the joint to keep the flap at the right angle.





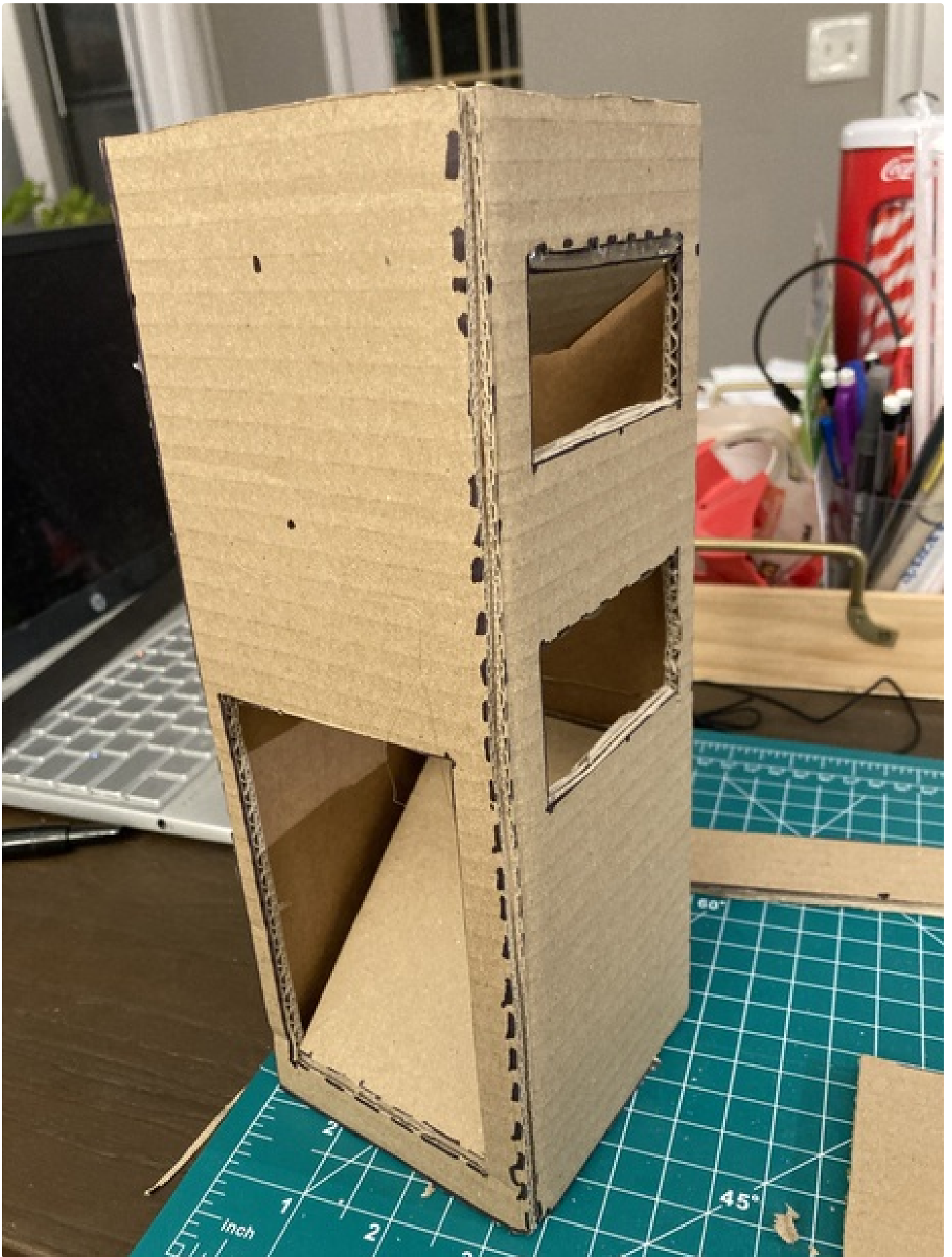






Step 5: Decorate and Admire

Go ahead and roll some dice through your brand new tower and maybe add some customizations!







Not sure how far the dice run away when going thru the tower, but you could add a tray at the bottom to contain them.

But nice work!



Nice idea to add rolling flaps by using side walls!



This was an easy and useful project!



Thanks for sharing :)