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# 2d component

## Assembly of Tapestry

The final step of my 2D project was the assembly of my embroidered tapestry. I ordered the wooden tapestry frames on Etsy during the last week of March. Since my tapestry is about 12.5-inches wide, I ordered 14-inch frames in the aged oak color. I thought this stain option would be the perfect color for my embroidery – not too dark to contradict the already established color palette, but also not too light to blend in too much. My Etsy package took a few days to arrive, but once it did, I worked on attaching the sewn tapestry to the frame pieces. I fed the twine through the top piece of the frame, then magnetized the top frame and the bottom frame. I have a Command hook above my bed at my apartment, so I hung the tapestry (with the frames) on this wall to see how it looks in context.





## Reflection

I'm very pleased with the final output of my embroidered tapestry. There are some minor errors with some skewed fabric edges or wiggly sewn lines. But this was my first time sewing and using a sewing machine, so I'm pleased regardless of these small errors. Overall, I believe the color palette between the embroidery thread, the patterned fabric, and the wood frame works really well together. The quality of my embroidery is pretty good too considering I had never embroidered letterforms before. I'm also satisfied with my exploration of typography in this project. In addition to using letterforms I constructed, I also experimented with the height of these letterforms in the composition. The result is a quote about strength and fragility composed of letterforms of various heights which creates a dynamic typography layout. Not only am I pleased with the output, but I thoroughly enjoyed the process of creating it.

# 3d component

## **Inspiration + Ideation**

The first step for approaching my 3D project – my pop-up typography book – was collecting some ideas for pop-up techniques and organizing my thoughts. I approached this by first searching for some inspiration for fun ways to play with typography through paper folding and scoring. I turned to Pinterest to see what my possibilities included and sift through pop-up methods that I believed were achievable with these three key factors in mind: (1) my very beginner skill level, (2) the tools and materials available in class, and (3) the time constraint of the semester. I found some potential techniques that seemed promising, so I moved forward into the planning process.

Before making any hand-drawn sketches, I had three logistical decisions to make about my book: (1) the page / spread size, (2) the text content that would be experimented with and displayed, and (3) the color palette of the typography. I focused first on addressing the page / spread size question. Since I had purchased 12x12-inch patterned cardstock, I knew that I was constrained to this size. So, 12-inches became the width of my spreads. To make the most use of my patterned cardstock, I decided it would be best to try and get

two spreads per 12x12-inch sheet of cardstock. So, 6-inches seemed like the best option for the height of each spread, making each individual page size 6x6-inches. Not only did this seem to be the best choice given my paper constraints, but it also seemed to be the best overall size – not too large and not too small. I had grown concerned that if I attempted an 8.5x11-inch book, that I would be overwhelmed working on that scale. Plus, the square size made the numbers easier to think through when planning the cuts and the folds of the paper. The size limitation of the Cricut was also a factor, since the Cricut can only handle materials that are 12-inches wide.

The next logistical step I had to figure out was the content of the typography in the book. Initially, I had planned to do an alphabet pop-up book, but I shifted my focus to thinking about pop-up with words more so than letterforms. So, the best option was one of the quotes that served as the foundation for my letterform construction. I toyed with the idea of choosing a different quote than the one I used for my embroidery project to add some variety. But since I was already comfortable with that quote, I thought about how it would be interesting to visually see how the letterforms can be treated in two different mediums – embroidery and pop-up. Therefore, I decided to stick with the quote “Your fragility is also your strength” for my 3D project.

The last logistical decision I needed to make dealt with the color palette of my printed letterforms. I knew I wanted my pop-up book to be cohesive, but I also wanted the typography to have enough contrast to stand out from the patterned cardstock. So, I opted to work with a color palette that compliments the cardstock with similar hues. This required completing a series of test prints to find the best color match to the patterned cardstock. My first attempt at a color match was unsuccessful. For this attempt, I uploaded the Michaels product photo of the patterned cardstock to Colors.com to see if this software could generate a close color palette. I printed these colors on cardstock, using them for my first round of test cuts on the Cricut. While I failed to document the printed letterforms next to the patterned cardstock from my first test cut, I mean it when I say this method of color matching was a failure.

So, I turned to a different approach – color selecting manually in Adobe Illustrator. My second round of color tests went better than the first round, but still not great. I overestimated how much the paper would decrease the intensity of the ink color, so many of the swatches were still too intense compared to the patterned cardstock. I marked the colors that needed to be completely adjusted and returned to my Illustrator test file to make some changes. The third round of test prints were not nearly as bad, and I was able to get closer matches for most of the colors. I was really struggling with the deep blue and pink, so I made some more notes on that color test and returned to Illustrator. I focused on neutralizing the blues and pinks because those colors were being printed at too high intensity which was counteracting the dull ink on the patterned cardstock. The result of the fourth round of test prints was much stronger, and I felt comfortable moving forward with those swatches into further test cuts on the Cricut.



Color Test #2

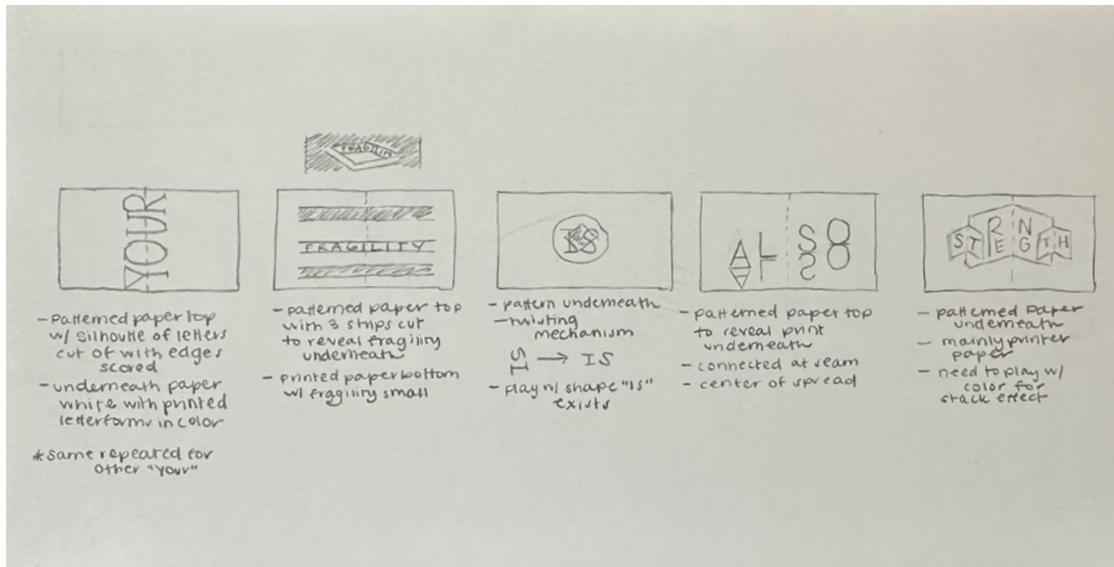


Color Test #3



Color Test #4

At this point in time, I had gathered my inspiration and cleared up some logistical decisions; so, it was time to start creating some hand-drawn sketches. I began by planning out the layouts of each spread, with each word in the quote “Your fragility is also your strength” on separate spreads. I brainstormed which pop-up techniques would be best for each word, noting that underneath my sketches.



I found an example of this perspective technique which folded the letters in the middle of the spread, with the top half of the letters on the left page and the bottom half of the letters on the right page. I thought this technique could result in an interesting illusion, so I sketched out a plan to use this technique for the YOUR spreads. Another technique I found played with the concept of revealing text through the act of pop-up. I decided this would pair nicely with the FRAGILITY spread because of the meaning of the word. The word FRAGILITY would be visible from certain perspectives when the page is opened but concealed by others. At the start of the semester, I discovered the twisting mechanism of pop-up, which is used to rotate letters or figures into the correct orientation when the page is opened. I thought this may be a fun method to use for IS. I found another technique on Pinterest where the letters are semi-cut out of paper to create this visual of positive and negative space. I decided this would be interesting to try for the ALSO spread. The last word is STRENGTH, and since the FRAGILITY spread had clear purpose behind its technique, I also wanted this spread to have intentional use of pop-up. I found a Pinterest project that played with this stacked notion of pop-up, playing with color to emphasize letters. I thought this resembled STRENGTH because it took up a great deal of space, so I decided to use this technique for the final spread of the pop-up book.



YOUR



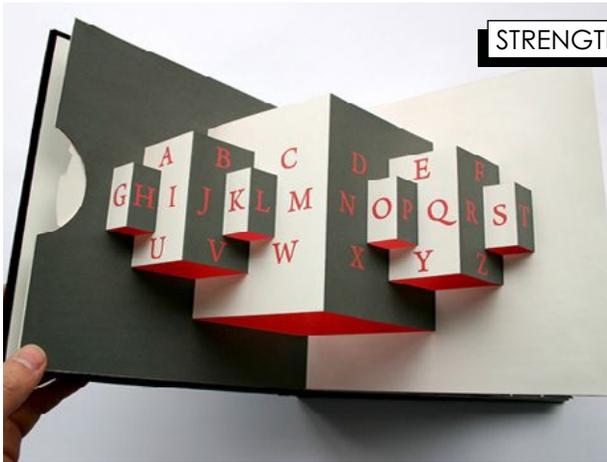
FRAGILITY



IS



ALSO



STRENGTH

## Research + Findings

With the ideation complete, it was time to conduct some research into the Cricut machine and into the pop-up techniques to better prepare for the production of my pop-up book. I had previous experience with a Cricut machine, but only the Cricut Explore. Once I established that the Cricut in the CVA was a Cricut Maker 3, I began researching the capabilities of this machine.

I found a blog by [Lotti Brown Designs](#) that discussed how to score using the Cricut with both a scoring stylus and a scoring wheel. I learned quickly that the Cricut Maker is the best option of Cricut machines for my project because it is the only machine that has compatibility with the scoring wheel. While the scoring stylus is a good alternative, the scoring wheel applies more pressure, making it easier to fold the creased lines. Lotti Brown Designs mentioned needing the QuickSwap Housing tool to apply the scoring wheel. (I took a mental note of this and will return to this during my section on Test Cuts.)

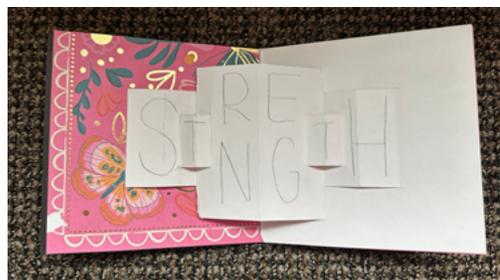
I knew it would be easier for me to design my spreads in Illustrator first and then bring those files into the Cricut Design Space. I searched for a few video tutorials that addressed how to do this. The first one I found – [How to Make SVG Files for Cricut in Illustrator](#) – provided a very solid tutorial. The key takeaways from watching her tutorial included: (1) using at least 2-point size strokes for the crease lines, (2) making the crease lines compound paths to keep them all as one layer for the machine to process, and (3) avoiding strokes for the actual design as the machine can have a difficult time reading those. The second tutorial I found – [Uploading SVG Files with Score Lines](#) – focused more on the instructions of Design Space. This paired well with the previous tutorial which focused more on the Illustrator aspect. She discussed uploading the SVG file into the Design Space and ungrouping the layers to isolate the fold lines from printed image and from the cut lines. She also explained how to change the operation to SCORE the lines that need to be scored as opposed to CUT. She ended the tutorial with the helpful reminder of regrouping or attaching all layers together once the operations have been established so that everything is sent to the Cricut machine at the same time as one composition.

I was curious about tutorials that focused on cutting cardstock with the Cricut, so I did some research and found one video tutorial – [How to Cut Cardstock with Intricate Designs](#). While the product Angie was cutting in this video tutorial does not relate to my project, she did cover some key tips in using the Cricut to cut cardstock. The first suggestion was using the Light Grip cutting mat (which is light blue in color). She also advised using the weeding hook to double check that the cuts were made all the way through the paper before removing the mat from the Cricut machine. Angie suggested flipping the mat over to peel the paper away, focusing more on pulling the mat back while the paper stays flat to reduce warping. She also suggested using the spatula to start removing a corner of the cardstock, so the paper doesn't bend or peel.

In addition to the Cricut resources, I also found a video tutorial about the twisting mechanism: [Pop-Up Tutorial 17 – Twisting Mechanism](#). The man providing the tutorial has an entire channel that shows how to create various pop-up techniques. I followed this tutorial about the twisting mechanism for a rough draft of the IS spread, trying to get a general understanding of the technique before moving into Illustrator. I just used a straight edge, a utility knife, a cutting mat, and double-sided tape to test this mechanism out.

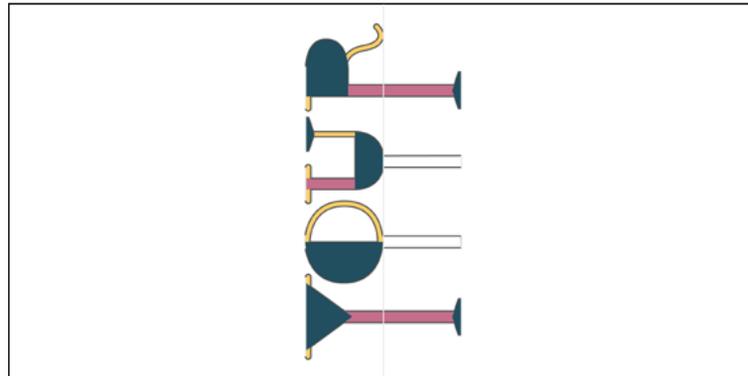
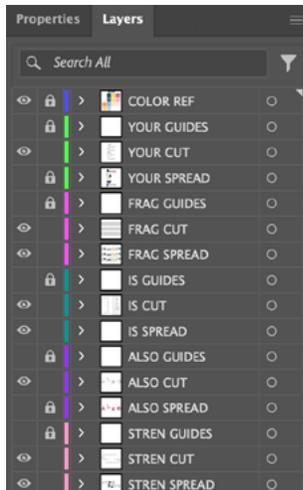


In addition to creating a rough draft or prototype for the IS spread, I also created test cuts (by hand) for the FRAGILITY spread and the STRENGTH spread. I wanted to test the concept behind those pop-up techniques before constructing them in Illustrator to send to the Cricut. The FRAGILITY spread was easy enough to accomplish, as it just required a simple cutting of some lines and creasing to create the pop-up “tents”. The STRENGTH spread was a bit trickier, and my prototype definitely was a failure. Since I was cutting it by hand, I misunderstood the measurements of the technique, so it did not function accurately as a pop-up with this test cut. But I was able to understand what I interpreted incorrectly and adjust this for the Cricut.



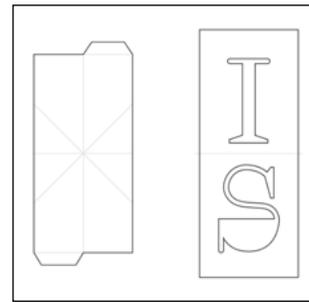
## Digital Layout

After conducting research into pop-up techniques and the Cricut Maker 3, it was time to start creating my spreads in Illustrator. I set five artboards to 12-inches in width by 6-inches in height. I knew it would be important to keep my layers organized since I would have assets that would only need cut and scored on the Cricut and assets that would need to be printed. For this reason, I created three layers for each spread: (1) the guides layer, (2) the Cricut layer, and (3) the print layer. Each spread contained a crease line at 6-inches where the page fold would be (this was placed on the Cricut layer).



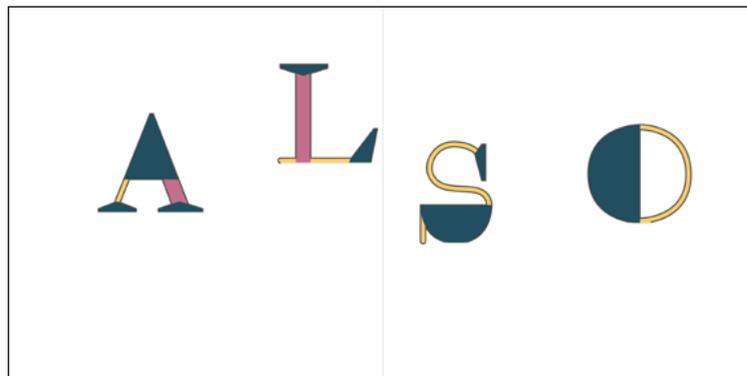
I started working on the YOUR spread first. I imported my letterforms onto the artboard, rotating them sideways to follow the seam of the page. I took inspiration from the treatment of type in my embroidery and used the long legs for the base of the Y and the R to have YOUR split the spread nicely. This allowed for me to “break” the letters in a clean way while still being legible. Once I had the letterforms how I liked, I copied and pasted them in place. Then I used the pathfinder tool to create one shape outline so I could easily add a stroke line for the cut. With the scissors tool, I cut away segments from this stroke where I wanted the creases to be. Since the word YOUR is repeated, I decided to copy the same technique for the second one.

I followed similar work patterns for the other spreads. For the FRAGILITY spread, I started by adding my letterforms to the artboard, making three copies and placing them at the 1.5-inch, 3-inch, and 4.5-inch point of the y-axis. I created a 1-inch margin for where the cuts would be above and below the words, allowing for plenty of room for error since the height of my letterforms was 0.6735-inches. I knew I wanted to add more cut lines over each of the three words after conducting my hand cut test. I thought this would be a neat way to provide more of a visual of the words while still concealing them. So, I added three cut lines for each FRAGILITY, all at 0.25-inches in height. I grouped my cut lines in my Cricut layer as well as the crease lines so I could easily switch the operation tool in Design Space later.



There was not a whole lot of tactical work to think through for the digital layout of the IS layer. Since I already knew the measurements of the cuts from my hand cut test, I just recreated each layer piece in Illustrator, starting first with the twisting mechanism. I added the cut outline with the crease lines, joining the lines as often as possible to make it easier on the Cricut. I did the same with the piece that would contain the word IS. I added the cut outline of that shape with the crease line in the middle. I was given the idea during our in-progress critique to cut the letterforms out of this spread so that you could see the twisting mechanism more. I liked the idea, so I prepared my digital spread with this in mind.

Moving on to the ALSO layer, I brought my letterforms onto the artboard, spacing them out so the visual typography of this spread would be less condensed than my other spreads. Again, I created copies of the letterforms, used the pathfinder to make the cut outlines, and the scissors to separate the crease lines from the cuts.



Finally, I tackled the STRENGTH layer. This was the most complicated technique to wrap my mind around because it involved very precise math and measurements. Even after my first round of hand cut tests, I had to conduct two more test iterations before fully grasping the implementation of this technique. After my second round, it hit me that I needed to have the measurements of each section of this pop-up be half of the previous one. So, the largest section of the pop-up needed to be 6-inches, with the next section being 3-inches, and the final section being 1.5-inches. Once I figured this out, creating the digital layout was easy. I just had to ensure the lengths of my cut and crease lines were accurate so the spread would fold nicely once sent to the Cricut. I played with the height of the letterforms for this spread, increasing them as the sections increased in surface area.



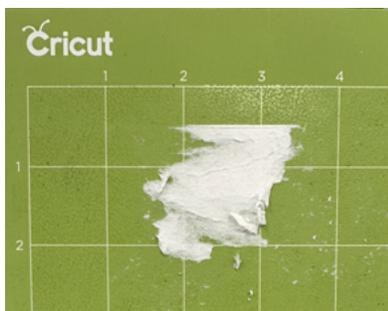
## **Test Cuts**

### *First Round*

I did my first test cut using the Cricut early on during my research, even before I did test cuts by hand, to understand how each pop-up technique worked in a technical sense. This first round with the Cricut was viewed just as getting acclimated to the machine and ensuring I knew how it worked. So, I created a quick iteration of my YOUR spread in Illustrator with some cut and crease lines. I knew that this first round would be unsuccessful, but I wanted to prioritize my understanding of the Cricut more than making progress on my pop-up book at this point in the process.

I printed my practice YOUR spread on tabloid cardstock and trimmed it down to 12x6-inches before moving onto the Cricut. Then, I uploaded an SVG of my cut and crease lines for the YOUR spread to the Cricut Design Space software. I switched the operation for my crease lines to scoring. I grouped everything together as the video tutorials instructed. I knew I would need to swap the tools out in order to achieve the desired scoring. I did not realize that I needed the QuickSwap Housing tool to attach the scoring wheel to (I realized this only after returning to my resources and research.) So, I just went ahead and cut the lines for my practice spread, knowing only cut marks would be made.

This first test cut with the Cricut was a complete failure. Besides the fact that I did not achieve any scoring, the green cutting mat (the Standard Grip) was too sticky or strong for the cardstock. The paper peeled away in pieces, with much of it sticking to the cutting mat. The larger fragments that I was able to remove from the mat curled up which is not ideal for my final book. I attempted to hand-align the printed letterforms on the cutting mat to the digital placement in the Design Space software. This was a failure too, so the cutting of the letters ended up being misaligned with the printed letterforms. Additionally, the thin yellow lines of my letterforms were too thin, causing the letterforms to tear at those meeting points. Finally, I did not properly prepare my Illustrator file with the cut and crease lines either, so the Cricut cut out the entirety of my letterforms when I wanted the furthest left and furthest right sides of the letterforms to be scored only (which would have meant they just remained unaltered without the scoring wheel).



I reflected on my failures after this first test cut, creating plans for what to improve or change for the next round of tests. This included locating the QuickSwap Housing tool so I could actually score the lines I need to fold. Knowing I would need to replace the tool tips on this accessory, I researched a video tutorial on how to swap out the tips on the QuickSwap Housing tool: [How to Change Tips on the Cricut Scoring Wheel](#). Another change included ordering the blue cutting mat (the Light Grip) as [Angie Holden's tutorial](#) suggested. This would ensure that my cut paper could be more easily removed from the mat without tearing or curling. I also planned to increase the stroke size for the thin lines of my letterforms. I decided I would have to sacrifice some of the frailty of those lines so that the Cricut would have an easier time cutting the letterforms and so that there would be less of a chance of those lines ripping post-production.



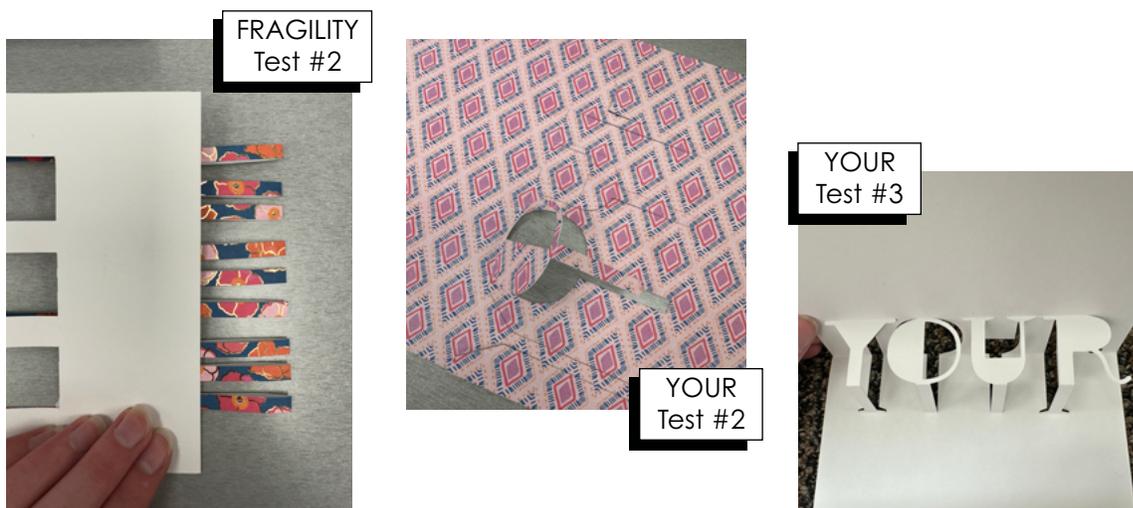
QuickSwap  
with Scoring  
Wheel

I also decided to rethink how I want the layer structure of my spreads to be since manual alignment may be problematic and unavoidable for many spreads. So, I returned to some of my sketches to think about alternative ways to layer the two pieces of paper to remove some of that human error. My initial solution was having more spreads with the patterned cardstock as the top layer with the printed letterforms as the bottom layer. Once I started thinking about my spreads this way, I realized I wanted just the FRAGILITY and STRENGTH spreads to include inked letterforms for two reasons: (1) this reduced the error in hand aligning the printed letterforms with the Cricut or underneath cut paper and (2) it better aligned with the message of FRAGILITY and STRENGTH being the emphasis behind my letterforms. I decided the YOUR, IS, and ALSO spreads would include cut patterned paper for the top layer paired with patterned paper for the bottom layer, creating the silhouette of the letterforms without any ink. So, I returned to my Illustrator file, created a copy for a new version (so as not to override my previous work), and adjusted my layers for those spreads to only contain the Cricut layers (no print layers).

## Second + Third Round

My second and third round of test cuts follow more of a trial-and-error method. Once I knew my file structure and the Cricut were working well together, I sent my FRAGILITY, YOUR, and ALSO spreads to the Cricut to see how they work post-production. I ran into some minor issues, but all easily fixable and a result of my error (not the Cricut's).

The FRAGILITY cut layer – when folded and closed – extended too far past the edges of the page. It was protruding 1.5-inches too far past the page, so I returned to my Illustrator to decrease the width of my cut margins by 0.75-inches on each side. This measured 6-inches wide, which I should have known if I paid close enough attention to my hand cut tests. This was a quick adjustment to make before moving to the final production of this spread.



The YOUR cut layer went well, except that I missed a cut line that overlapped a crease line, so the Cricut cut the bottom of my O and there was no paper for it to stay attached to. Since this spread already needed tweaking to correct this mistake, I also decided to widen the bases of the letterforms just so they were a little less fragile. The third test cut for the YOUR spread (completed on plain white paper) went smoothly, so I saved that file version for the official production.

The ALSO cut round went the best. Everything was cut as intended and scored as instructed, so there was little I had to revise from this test. However, I noticed the A and the L were a little tougher to move around compared to the S and O, so I went back to my file and shortened the crease lines for those bases so more of the paper would be cut, giving it more flexibility.

Before doing any official cutting on the Cricut for the STRENGTH spread, I wanted to do a few more test cuts with just plain cardstock. The second test cut for this spread was also done by hand and successful! I used a ruler and utility knife to figure out the lengths of the cuts and where to place the creases. Once I figured this math out by hand, I adjusted my Illustrator file and completed a third test cut using the Cricut to double check that everything was set up correctly. It was, so that concluded my test cuts for the STRENGTH spread. With all the spreads figured out, it was time to move on to the official pop-up production.



ALSO  
Test #2



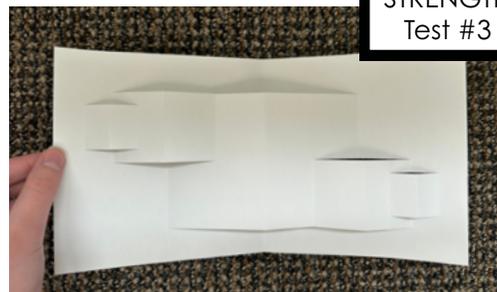
ALSO  
Test #2



STRENGTH  
Test #2



STRENGTH  
Test #2



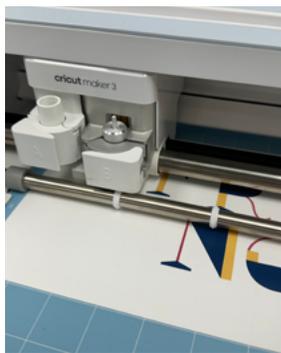
STRENGTH  
Test #3

## Pop-Up Production

Once my test cuts were complete, I began planning which patterned cardstock to use for each spread. I did not necessarily have a specific process for this, but I started with selecting paper for the FRAGILITY and STRENGTH spreads. I knew I wanted these to have more intense patterns, so that is what I focused on finding from my cardstock pack. I then moved to the ALSO spread. Again, I knew I wanted a bold pattern for the top layer. I found that top layer first and then flipped through my pack until I found a secondary pattern that went well underneath that pattern. I followed this same mentality for the YOUR spreads; except I liked the idea of having inverse color layers for these spreads so there would be some variety or contrast between the two YOUR spreads. There were some repeat patterns, just in different colors, so I found a pink and a blue pattern that matched and decided to have these be the top layers for those spreads. Then, I went back through to find a more subtle pattern that contrasted well with the top layer. This meant that for the spread I used the pink top layer for, I would use a blue bottom layer; and for the spread I used the blue top layer for, I would use a pink bottom layer. Lastly, I needed to find two patterned papers for the IS spread: one pattern for the word and twisting mechanism, another pattern for the base layer. I found a more chaotic pattern for the base and paired a more subtle, single-color pattern for the top layer.

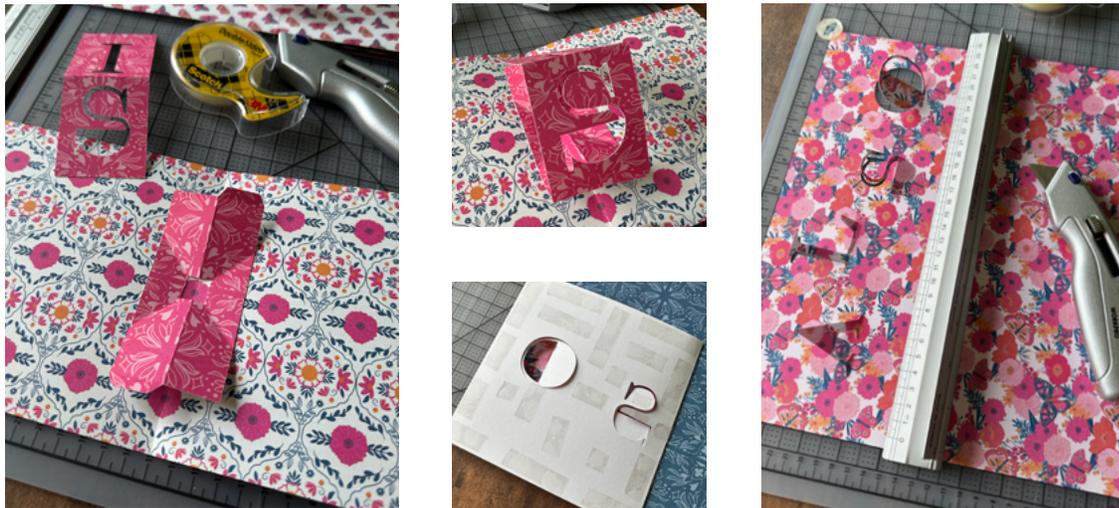


With my paper selections / pairings made, and my digital files revised and ready to be cut, it was time to start officially cutting and scoring the spreads of my pop-up book. I sent my FRAGILITY file through the Cricut first, knowing that my revised measurements would mathematically work once cut. I went through each spread – FRAGILITY, ALSO, IS, YOURS (x2), and STRENGTH – with my designated paper choice. The process for each included (1) aligning and laying the cardstock on the cutting mat, (2) preparing the Design Space file and connecting my computer to the Cricut, (3) ensuring the scoring wheel was placed in the Cricut, (4) sending the cutting mat through to be scored, (5) switching the scoring wheel out for the knife, (6) sending the cutting mat through to be cut, and (7) carefully removing the cut / scored cardstock from the mat. To prevent folding or rolling of the paper, I flipped the cutting mat over and peeled the mat away from the paper at an angle. This process, and my revised files, all worked great during my official Cricut cutting day.



However, after placing the printed FRAGILITY and STRENGTH pages next to their patterned paper, I realized I did not like how the color of ink looked with those spreads. Initially, I made all printed text the same three colors; and these colors were not necessarily part of each of the pattern pages. So, after deciding what pattern would be used for the FRAGILITY and STRENGTH pages, I returned to my Illustrator to adjust those colors to better match. This did not take long as, I previously conducted a color test – it just required swapping some of the initial colors I used to better align with the colors in the patterns.

Once every spread was printed, cut, and creased; it was time to trim down the spreads, fold the creased lines, and tape the two layers together. I started first with the IS, ALSO, and YOUR spreads. The IS page required a little more effort than just folding the crease lines. I referred to the tutorial video I watched to ensure that I was folding the twisting mechanism correctly. Once the twisting mechanism was all folded and secured to the spread, I taped the piece with the IS to the two tabs. I opened and closed the page a few times, ensuring the mechanism was working as expected. There was a slight hiccup with the bottom of the S. Since I cut the letters out of the paper, the twisting was a little too much weight for the S to support itself, so I solved this problem by adding a small support “bar” to the back of the S for some extra help when opening and closing the page.



The ALSO spread was simple. I just trimmed it down to the 12x6-inch size and folded the crease lines for each letter and for the spine. Then, I located the patterned paper that I paired for this spread. I covered one half of the cut spread with double-sided tape. I lined those edges up to the bottom layer of paper and slowly pressed them together. Then, I covered the other half of the cut spread with tape and did the same thing. I decided that this method of adhering one page at a time for each spread would help reduce errors for bubbles and misalignments.

Then, I moved onto the YOUR spreads. The paper cuts were quite thin for this spread, so I took my time folding the creases after I trimmed the pages down to the appropriate size. I followed the same process for taping the top/cut layer to the bottom/plain layer of patterned cardstock. These spreads had more cuts than the other spreads, so I had to be very careful placing my tape.



I ended with the FRAGILITY and STRENGTH spreads since I decided to do a reprint with a closer color match to the pattern pairings. The FRAGILITY print was simple. I printed on 11x17-inch tabloid paper, using crop marks to trim the page down to 12x6-inches. The Cricut cut for the top layer for this spread was also easy. At this point, I figured out the hiccups with my file structure, so all I had to do was attach the paper to the cutting mat and send it through the Cricut machine. I followed the same process for taping this spread together as I did for the other ones.

The STRENGTH spread production also went very smoothly. The print was fairly simple. I had to pay a little more attention to the crop marks for this page because of the order of the layers. The FRAGILITY print was the bottom layer; but the STRENGTH print was the top layer, so I had to be sure that no trim marks were visible. Once I had the printed layer trimmed, I placed it onto the cutting mat and sent it through the Cricut. I was the most careful folding this pop-up technique because of the intricacy of the crease lines with the cut lines. But once I got the creases all folded, I just pressed it down using the weight of some heavy books to further set the folds and then moved onto attaching the print layer to the patterned paper using the same tape technique. At this point, all my spreads were assembled, and I was ready to move onto the book binding process, which includes the cover.

## **Book Binding + Cover**

### *Research + Findings*

I started this process with a heavy amount of research and YouTube tutorials. I had no experience with book binding or with creating my own book cover, so I turned to YouTube to find some video tutorials to help get me started. I found four videos that showed (1) the process of binding book pages, (2) the process of creating a hardcover, (3) the process of assembling these together, and (4) the process of creating a bookcloth.

The first video I watched was [DIY Paperback to Hardcover](#). This tutorial provided me with the most amount of information about creating a cover. It first begins with the process of adding end pages to the front and back of the textblock (all the interior pages of the book). Then, she moves into reinforcing the textblock spine with paper or fabric. The next set of steps include measuring to create the cover out of cardboard. She provides some suggestions for determining the measurements of each piece of the cover – there are three pieces: the front cover, the back cover, and the spine. Then, she moves into adhering the fabric to the cardboard cover, including advice on how to fold the fabric over to the underside of the covers. Finally, she discusses how to attach the end pages with the front and back covers, including recommendations on drying time in a weighted press.

The next video I found was a close extension of the previous tutorial. [How NOT to Make a Hardcover from Scratch](#) uses the same steps from the previous video, just focusing more on the errors that she made that restricted the mobility of the final book. She discusses using thinner cardboard than she used in her previous tutorial, recommending a 1-2 mm thick cardboard instead of the 3 mm thick. She also gives some suggestions for if you choose to add a paper connector to attach the spine to the front and back covers (in addition to the fabric connecting the three pieces). The biggest 'NO' she provides is making sure to not put the glue all the way to the spine when adhering the end page to the cover; she suggests leaving a 1 cm margin from the spine to ensure the book moves freely.

I also discovered a video tutorial by the same channel – Extra Cozy DIY – that focuses more on designing the book cover and not just constructing it. [DIY Aesthetic Book Covers](#) provides great instruction if deciding to paint the linen fabric book cover. She uses acrylic paint, mixing her desired color. She also uses transfer paper to add any text to her fabric cover.

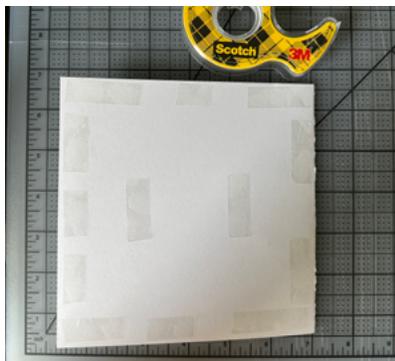
The last video tutorial I found focused on creating a bookcloth which is best for making a hardcover out of fabric. This aspect of making the cover was not covered in the previous tutorial videos. I found [How I Make Bookcloth from Any Fabric](#) on YouTube. It is a short video that describes this woman's process for creating her fabric book covers, using linen fabric. She first cuts the fabric to the size of the cover, leaving 1-inch margins for the covers and the spine. Then, she irons on Heat n Bond to the fabric to add extra stiffness to the fabric and to prevent glue from seeping through it onto the cardboard which could cause warping.

### *Assembling the Textblock*

The assembly of the textblock was simple. Since all of my spreads connected to each other like an accordion, I just went one-by-one taping the adjacent pages together. I started by connecting the STRENGTH and YOUR pages at the end of the quote, triple checking that the text was facing right side up. I added

double sided tape to the back of the right page of the YOUR spread and then carefully aligned the edges of that with the back of the left page of the STRENGTH spread, pressing down after ensuring proper alignment. I followed this same process, working backwards through the quote, adhering the back of the left page of the YOUR spread to the back of the right page of the ALSO spread, then the back of the left page of the ALSO spread to the back of the right page of the IS spread, and so on and so forth.

I opted not to add the fabric or paper spine reinforcement that was suggested in the YouTube tutorials. I felt like this would limit the mobility of my pages and was not necessary given the way I adhered the spreads together to create the textblock. Once this was completed, I placed my textblock under my make-shift weight system to ensure the security of the tape.



### *Constructing the Cover*

I began the process of constructing my cover by measuring the size of my textblock. The length and height of my textblock was 6x6-inches. The width of the textblock measured at 0.5-inch. Following the tutorials, I traced the front and back cover pieces at 6-inches wide and 6.22-inches tall onto the 2mm thick cardboard I gathered for the cover (adding extra to the height for some overhang). I traced the spine at 0.5-inches wide and 6.22-inches tall. I cut these pieces out of the cardboard and set them to the side.



The next step of constructing the cover was attaching the three pieces (the spine, the front, and the back) together. To do this, I grabbed an extra piece of cardstock and glued the middle of it down to the entirety of the spine. I made creases on either side of the spine to create hinges. I trimmed the corners of these flaps upwards, creating 45-degree angles and then glued the remaining flaps to the undersides of the covers, creating a spine support for my cover. I let this glue dry for about 30 minutes while I began making my bookcloth.

After watching my YouTube tutorials, I decided I wanted to create a fabric book cover to wrap over the hardcover shell I made. I cut a piece of white linen fabric (leftover from of my embroidery project) that was about 1-inch wider on all sides compared to my cardboard cover. To stiffen this fabric up so I could better adhere it to the cardboard, I applied Heat n Bond Extra Bold to the backside of the fabric using an iron. This was suggested in one of the YouTube videos I watched, and it was extremely helpful in adding some durability to the fabric.

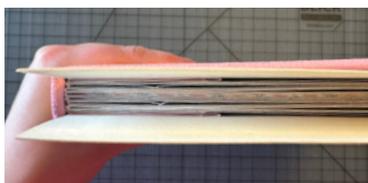


The next step in constructing my book cover was attaching the linen bookcloth to the cardboard shell of my cover. To do this, I placed the fabric upside down with the cardboard piece on top. I lifted one of the cardboard covers up, applying Tacky Glue over the entirety of the piece, and placed back down onto the fabric, securing it. Then, I moved onto the spine, lifting that up, applying glue to the spine, and placing it back on the fabric to adhere them together. With this, I had to ensure excess fabric was pushed into the hinges to increase the mobility of the cover. I followed the same steps to adhere the last piece of fabric to the back cover. I let this dry for about 30 minutes before moving onto gluing the fabric edges to the underside of the cover. To do this, I cut excess fabric off on the four corners, trimming at about 45-degrees. I started with the bottom edge, applying glue to the fabric and then lifting the cover up and under to adhere the edge to the cardboard. I followed this technique for the remaining three edges. Then, I let this dry for another 30-minutes; however, this time, I placed the textblock (with two protectant pieces of paper for the top and bottom of the textblock) within the cover so that it would dry in its intended shape, and to reduce any warping of the cardboard pieces.



Once my cover was constructed and dry, I moved onto painting the fabric. I mixed a pink paint color using acrylic paint. I applied this paint to the cover, ensuring the paint was reaching the hinges. Once this coat dried for 20-minutes, I flipped the cover over and painted about 75% of the edges on the underside of the cover. I set aside my cover overnight to ensure the paint was completely dry and the glue was all set before moving forward in the assembly process.

The next day, I began the process of assembling the complete pop-up book. This is where everything got a little bit complicated. I would have been able to glue the front and back end-pages to the backsides of the front and back covers and that would have been the end of the assembly process. But since I needed the spreads of my pop-up book to lay completely flat, this would not achieve what I wanted for my book. So, I had to do some rethinking about how to connect my textblock to my cover. After inspecting the movement of my textblock and cover together, I realized I needed a support piece that would add mobility to the movement of my spreads as I opened my book. I folded some extra scraps of paper to get a better idea of what this support piece should look like. I knew it should be a folded accordion piece, but I was not sure if the folds should be the same size or not. While I was solving this issue, I was also thinking through options for covering up the undersides of the front and back cover. This led me to experiment with a piece of scrap cardstock at 12x6-inch size: 6-inches covered the backside of the cover, and I played around with different sizes of folds to create the accordion piece. I first tried creating folds that were the same size – this did not give the mobility I was looking for. Then, I tried with folds that tiered inwards, getting smaller as they go up – this was much better. I opened and closed the book a few times with this scrap piece just lightly taped to the cover and my textblock to see if this would work. I did not account for two folds I needed that would ensure the book would close flat and also allow it to open flat too.



Once I figured out where these went, I began working on cutting and folding a fresh piece of cardstock to glue into the book as accordion end-pages. There were three main folds: (1) at the 6-inch mark, (2) at the 2-inch mark from the interior crease, and (3) at the 1.75-inch mark at the interior crease. At the 2-inch mark crease, I also had to add a 0.25-inch crease on both sides to give this end-page the mobility to close completely and open completely. Once this front and back end-page was created, I started double-sided taping the smaller tabs to the ends of the textblock. Then, I added glue to the 6x6-inch section of these end-pages and pressed down into the covers. I let this glue dry for about 20 minutes before working on hiding this accordion tab. To hide it, I cut a 6x6-inch piece of the same patterned cardstock and double-sided tapped it to my textblock.

I folded my book up and placed it under a handmade book press (a heavy box with books) to ensure the glue, tape, and all the folds were set in place. While this was an unanticipated hiccup in the assembly of my book, the solution works even better than I expected it to. The only thing I would change is how I treated the interior side of the spine on the cover. If I had known it would have been slightly visible, I would have added fabric along the entire interior spine and painted it the same color as the cover.

### *Cover Design*

I really liked the idea of connecting the two words STRENGTH and FRAGILITY to show that they are independent and interdependent at the same time. RESILIENT was the best I could think of as the word that signals their interdependence. Before I knew that I would be creating a fabric hardcover to bind my book, I had contemplated the idea of cutting out two separate layers for STRENGTH and FRAGILITY, highlighting the letters from both words that spell RESILIENT. The overlay of these two layers would together spell RESILIENT, but as you moved through the cover to the interior of the book, you would see the two separate layers. There were two problems with this: (1) there was not a second E to fully spell RESILIENT and (2) the frailty of the paper cut letters would likely cause tearing if not adhered on the cover. I shifted this idea to just focus on the cover design existing on a single layer, glued directly to the fabric cover.

I knew I still wanted to highlight those three words, emphasizing the overlap in the letters in RESILIENT with the letters in STRENGTH and FRAGILITY. I decided to have the central focus of the cover be the word RESILIENT with the other two words as supporting words. I ended with two cover options with the same treatment of typography and paper, but with different placements of the supporting words. RESILIENT in the center of the cover with the height of the R, I, and T extended to mimic the treatment of typography in my embroidery. The remaining letters in this word being the normal height I created for them. With these varying heights, I played around with the placement of the E, S, L, and N to nestle within the taller letters. I also knew I wanted to treat the overlapping letters in RESILIENT and STRENGTH (S, R, E, N) differently than the rest of the word; the same for FRAGILITY (I, L, T). So, I decided to create these letters using negative space by cutting these letterforms out of a square piece of paper. To further draw on the connection between shared letters, I decided to match up the patterned cardstock; the R in RESILIENT and the R in STRENGTH created out of the same paper, the I in RESILIENT and the I in FRAGILITY cut out of the same paper, etc.



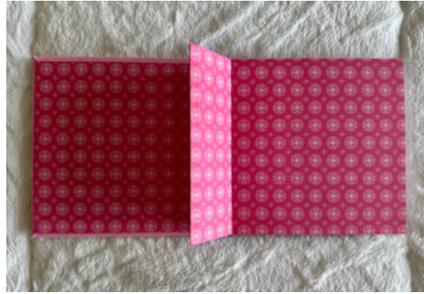
Option #1



Option #2



I prepared this cover design in Illustrator, setting the cut lines for the letters so the Cricut would know what to cut. I exported an SVG and brought that into Design Space to cut with the machine. I sent each group of letters – 8 in total – to the Cricut. One for the R's, one for the E's, one for the S's, one for the I's, one for the L's, one for the N's, one for the T's, and one for the remaining letters that are not present in RESILIENT. Once these were cut, I began placing them onto the cover of my book just to get an idea of the composition for the cover design. I had narrowed my options down to two potential designs before leaving Illustrator, so I placed the cut letters on the cover to replicate these options to officially decide which design to glue down. I asked my tablemates for their opinions, which favored option 2. I was also leaning toward this option but wanted additional verification from my peers. Then, I got to work gluing down each letter with Gorilla Glue. I started with RESILIENT because it was the most central of the three words. Once that was placed, I moved onto STRENGTH and ended with gluing the letters for FRAGILITY. Once again, I placed my cover under my handmade book press to fully set the glue. I let it dry for about one hour under this press, and then examined my book, which was officially complete.



## Reflection

I'm very happy with the final product of my pop-up book. I paid close attention to the craftsmanship of my book, and I believe that it shows. While my pop-up book is clearly handmade, I did not want it to be obvious based on the quality of the construction of my book that it was assembled by hand. This was my first experience with pop-up techniques, so I'm pretty impressed with what I accomplished. I do believe there were more intense pop-up techniques I would have liked to experiment with based on some of the research and inspiration I gathered; but given the time constraint of this project, I opted to prioritize simple and clean techniques, and I believe this works well. This was also my first time book binding, which was intimidating given how quickly my project could have gone awry since the pop-up techniques were finished at this point in the project timeline. However, I conducted extensive research and watched many tutorials multiple times to ensure that this would not happen. It turns out that book binding is a craft I thoroughly enjoy. I first entered this project intimidated by the end goal, but in the end, I'm very proud of the final product and had a fun time exploring new techniques to create it.

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**Bitter Melon Bindery.** “How I Make Bookcloth from Any Fabric.” YouTube, 2022, [www.youtube.com/watch?v=bDWSCmMK5bw](https://www.youtube.com/watch?v=bDWSCmMK5bw). Accessed 16 Apr. 2025.

After watching some of the other hardcover tutorials that adhered fabric to cardboard to create the cover, I realized I did not know how to prepare my fabric for this. I found this tutorial which simply instructs how to use Heat n Bond to stiffen any cotton or linen fabric, so it is more durable for a book cover.

**Brown, Lotti.** “How to Score on Your Cricut Cutting Machine.” Lotti Brown Designs, <https://www.lottibrowndesigns.com/how-to-score-on-cricut.html>. Accessed 03 Apr. 2025.

This blog post by Lotti Brown Designs discusses how to score on the Cricut machine. She covers the difference between the scoring wheel and the scoring stylus, and which tool works best for each of the Cricut machines. She also explains how to set up the Design Space to accomplish both scoring and cutting.

**Chaiv. “Cricut Design Space: Uploading SVG Files with Score Lines and Dashed Cut Lines.”** YouTube, 2023, <https://www.youtube.com/watch?app=desktop&v=Y9xQIB9CIAs>. Accessed 07 Apr. 2025.

This tutorial by Chaiv shows two ways to achieve fold lines with the Cricut – using score lines or dashed cut lines. I followed the tutorial focusing on the score lines because I had access to the scoring tool. Chaiv shows how to upload SVGs to Design Space and how to switch the operation from basic cut to score.

**Extra Cozy DIY. “DIY Aesthetic Book Covers.”** YouTube, 2023, [www.youtube.com/watch?v=hU4Avn4tbT8](http://www.youtube.com/watch?v=hU4Avn4tbT8). Accessed 17 Apr. 2025.

I discovered this tutorial through watching another video, and I was particularly interested in learning the techniques for painting a linen fabric book cover. The remaining elements of the tutorial were interesting to watch, but did not necessarily pertain to my project.

**Extra Cozy DIY. “DIY Paperback to Hardcover.”** YouTube, 2022, [www.youtube.com/watch?v=eDpDgBHmLSs](http://www.youtube.com/watch?v=eDpDgBHmLSs). Accessed 15 Apr. 2025.

This YouTube video is a very detailed tutorial on creating a hardcover for a paperback book. It goes step-by-step over preparing each piece of the book – the textblock (interior pages), the cover, and assembling them together for the final product. The durations for drying are included, along with the materials needed to achieve the hardcover.

**Extra Cozy DIY. “How NOT to Make a Hardcover from Scratch.”** YouTube, 2025, [www.youtube.com/watch?v=jwCZi81LJYY](http://www.youtube.com/watch?v=jwCZi81LJYY). Accessed 15 Apr. 2025.

This tutorial by Extra Cozy DIY essentially covers all the steps from another resource video I found. However, this video focuses on highlighting what not to do when creating your hardcover – including gluing the cover too close to the spine on the end page. She also focuses more closely on measuring the hinge appropriately for the book measurement.

**Holden, Angie. "How To Cut Cardstock with Intricate Designs on a Cricut Machine." YouTube, 2024, [www.youtube.com/watch?app=desktop&v=EaJE0t5QZA0&t=126](https://www.youtube.com/watch?app=desktop&v=EaJE0t5QZA0&t=126). Accessed 05 Apr. 2025.**

This tutorial by Angie Holden walks through the steps of cutting cardstock with intricate designs. She discusses which tools to use and in what situations, specifically focusing on the cutting mat, the weeding hook, and the spatula. She also shows the technique of peeling the mat away from the paper with the mat upside down. In addition to this information, Angie covers what knife settings to use for a variety of paper weights and textures.

**Johnson, Sarah. "How to Make SVG Files for Cricut in Illustrator + How to Use Them in Design Space." YouTube, 2019, [www.youtube.com/watch?v=rGKavl7PNxg&t=600s](https://www.youtube.com/watch?v=rGKavl7PNxg&t=600s). Accessed 05 Apr. 2025.**

This Adobe Illustrator tutorial shows how to create an SVG file in Illustrator that is compatible with Design Space and with the Cricut. She begins with creating the artboard and setting up the Illustrator file, then moves to how to create the fold lines. She also goes into detail about exporting the SVG file.

**Taylor, Becca. "How to Change Tips on the Cricut Scoring Wheel." YouTube, 2019, [www.youtube.com/watch?v=wzasH8apY3Y](https://www.youtube.com/watch?v=wzasH8apY3Y). Accessed 02 Apr. 2025.**

This tutorial video by Master Procraftinator shows how to change scoring wheel tips on the QuickSwap Housing tool. It also explains the difference between the single score line tip and the double score line tip. This tutorial was used as instructions for how to use the scoring tool on the Cricut to make crease lines for my pop-up book.

**The Pop-Up Channel. "Pop-Up Tutorial 17 – Twisting Mechanism." YouTube, 2016, [www.youtube.com/watch?v=zpSFpcLLxFU](https://www.youtube.com/watch?v=zpSFpcLLxFU). Accessed 05 Apr. 2025.**

This pop-up tutorial from The Pop-Up Channel explains how to make twisting pop-up action as the page opens and closes. Duncan shows a variety of twisting mechanisms, from simple to complex, along with a step-by-step breakdown for how to create this mechanism.