



Assemble Your FlipBookKit!

by **FlipBookKit** on February 7, 2015

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Author: FlipBookKit FlipBookKits

FlipBookKit is from kinetic artists, Mark Rosen and Wendy Marvel. They create moving art that tells stories and tickles our sense of nostalgia. In late 2011, their series of motorized flipbooks based on the motion studies of Eadweard Muybridge began touring with galleries, art shows and at special events internationally. FlipBookKits are a whole new (olde) format for motion art. We have built this system with the intention of creating a reliable, beautiful and configurable way to build and display motion art. We're looking forward to many years of great artwork from the flipbookkit community.

Intro: Assemble Your FlipBookKit!

You've most likely seen flip books before. You may have even made a little hand-drawn thumb flip book of your own. A couple years ago, Mark Rosen and Wendy Marvel created FlipBookKit, these cool kits that assemble into a looping mechanical flipbook box. They come with a default set of animated cards with Eadweard Muybridge's galloping horse (I do not envy that man learning to spell his name as a kid), but you can also make your own animation, which I'll show in an upcoming tutorial.

There are instructions in the box, but this instructable and video are here so you can get a few additional tips and tricks. And in the video you can find some advice for adults who are helping kids assemble a FlipBookKit, as that is a whole different animal than an adult assembling it on their own.



Step 1: Materials and Tools

A FlipBookKit set, which includes:

- Box
- Set of Cards
- Bag of Spindle parts
- Bag of rivets and piece of double sided tape

Optional (but Super Helpful) Tools:

- Light-colored marker - such as a silver Sharpie, or white out, or a paint pen, or any other implement that can make a visible mark on black plastic
- Pencil or chopstick
- Quarter, Key, or Spoon
- Key or Popsicle stick
- Pliers



Image Notes

1. flip cards



2. box

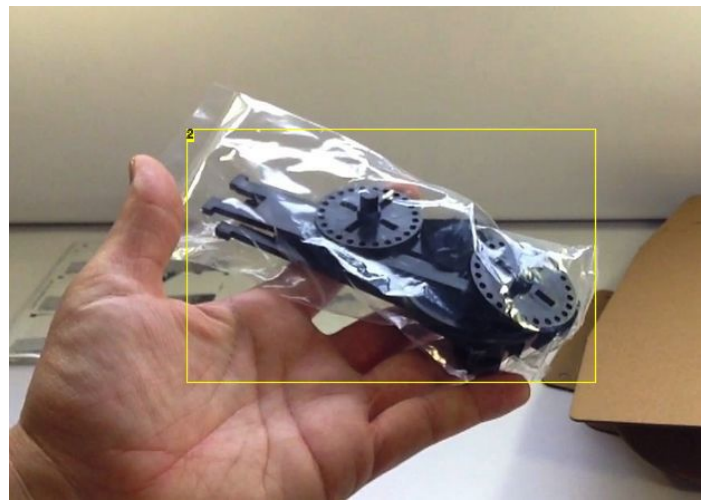


Image Notes

- 1. spindle parts bag
- 2. spindle parts bag



Image Notes

- 1. rivets (and double sided tape square)
- 2. rivets (and double sided tape square)

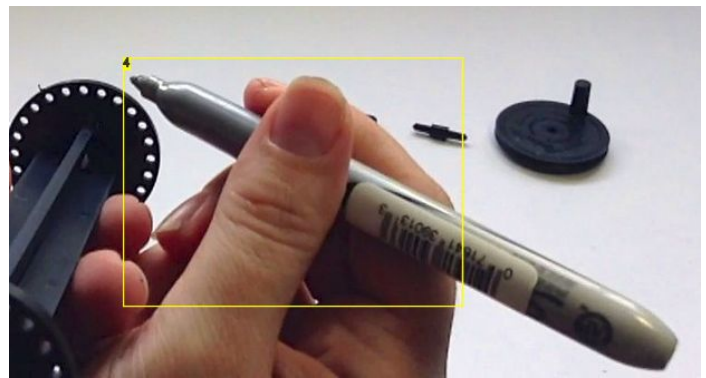


Image Notes

- 1. silver sharpie, which will make a mark on black plastic. gold also works, but most typical sharpies do not.
- 2. silver sharpie, which will make a mark on black plastic. gold also works, but most typical sharpies do not.
- 3. silver sharpie, which will make a mark on black plastic. gold also works, but most typical sharpies do not.
- 4. silver sharpie, which will make a mark on black plastic. gold also works, but most typical sharpies do not.

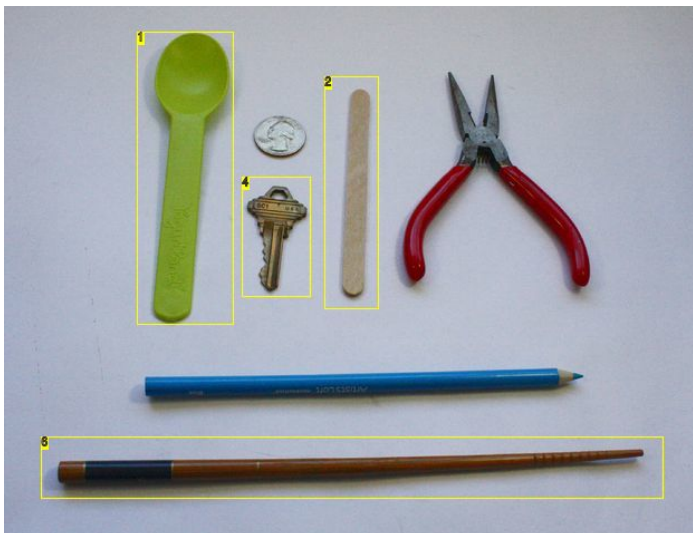


Image Notes

- 1. spoon - this one's plastic, but any sort is fine
- 2. popsicle stick
- 3. a key is great because it works as a tool for multiple steps

4. a key is great because it works as a tool for multiple steps
5. chopstick
6. chopstick

Step 2: Assembling the Box

In the pictures above, you can see the two parts of the rivets: one side has a smooth-sided, open shank, the other side has a smaller, bumpy-sided shank.

With the logo on the bottom side, fold the narrow flaps flat over. Insert the smooth-sided part of the rivet into one of the holes, which will go through two layers of cardboard, then place the smaller, bumpy-sided part into the other side and squeeze the two sides together.

It is possible to pop the rivets together with just your hands, but there are a few simple tools to make the process easier, such as a quarter, a spoon, or the head of a key.

Follow the pictures above to check out the rest of the folding process. The tapered, triangular ends get folded in over the rectangular flaps to hold them in place. Note that when you put in rivets, they will always go through at least two pieces of cardboard, and often three. This is the point of the rivets, after all, to keep the box's shape.

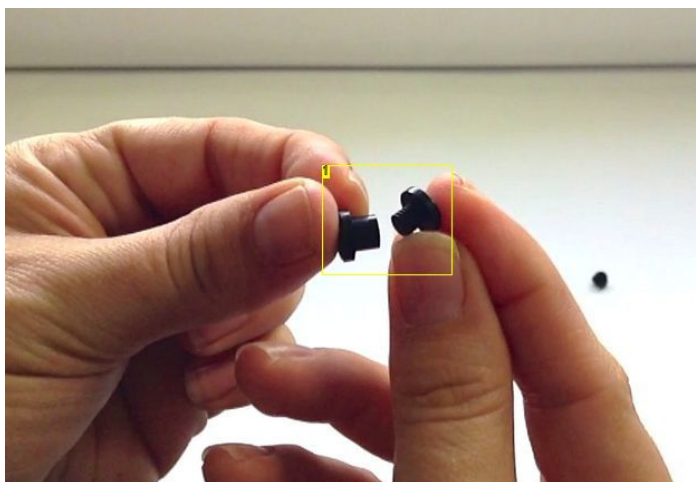
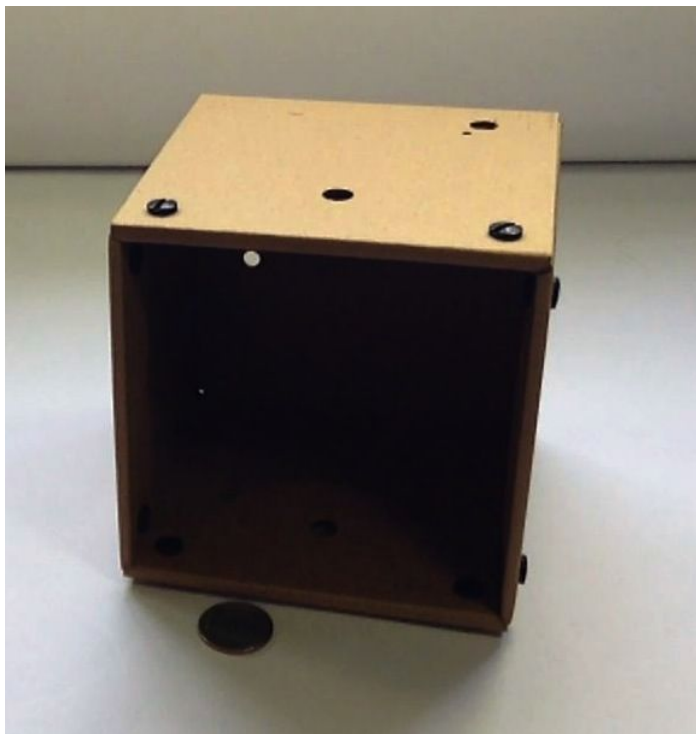


Image Notes

1. smaller, bumpy side goes into wider, smooth side with the hole in the center

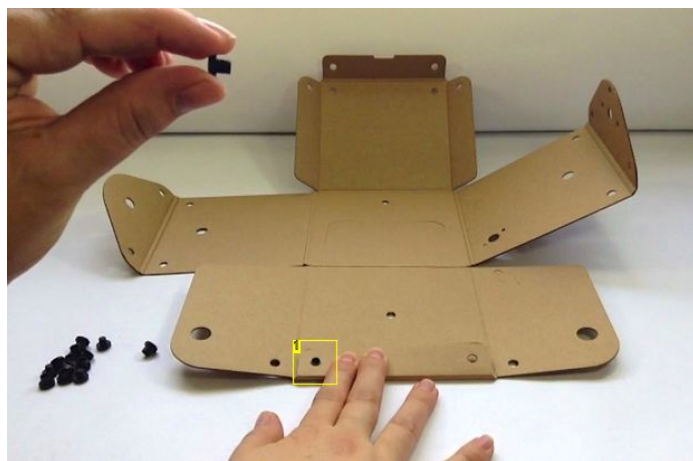


Image Notes

1. first, insert the bigger, smoother side from the bottom/outside of the box.

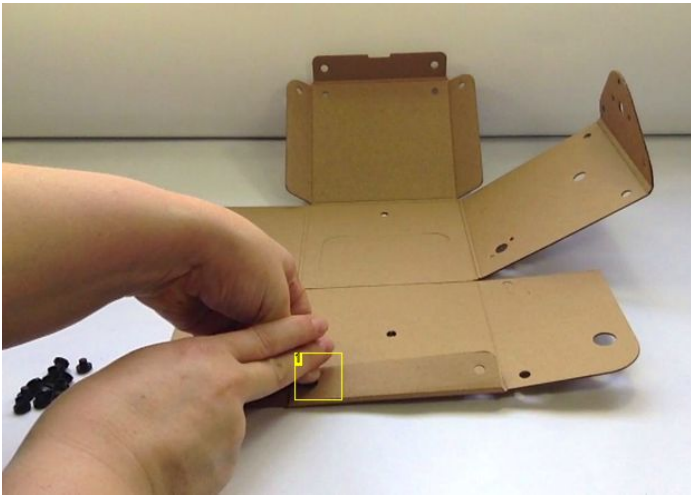


Image Notes

1. Insert the smaller, bumpy-sided half from the top side and press hard to attach them. Using two hands is helpful.

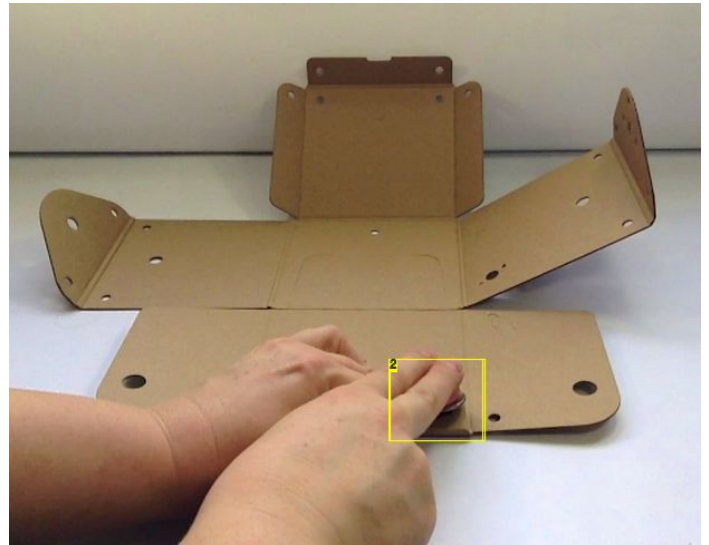


Image Notes

1. Placing a coin on top of the rivet to help push down can make things easier, especially for small hands.
2. Placing a coin on top of the rivet to help push down can make things easier, especially for small hands.

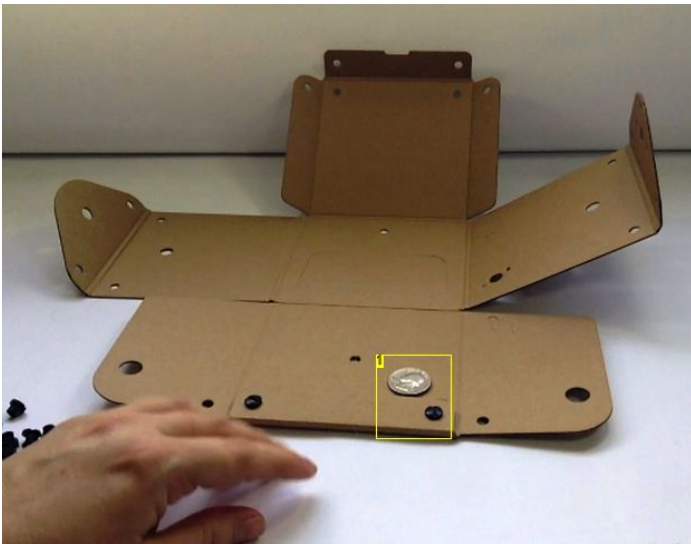


Image Notes

1. See, it worked!

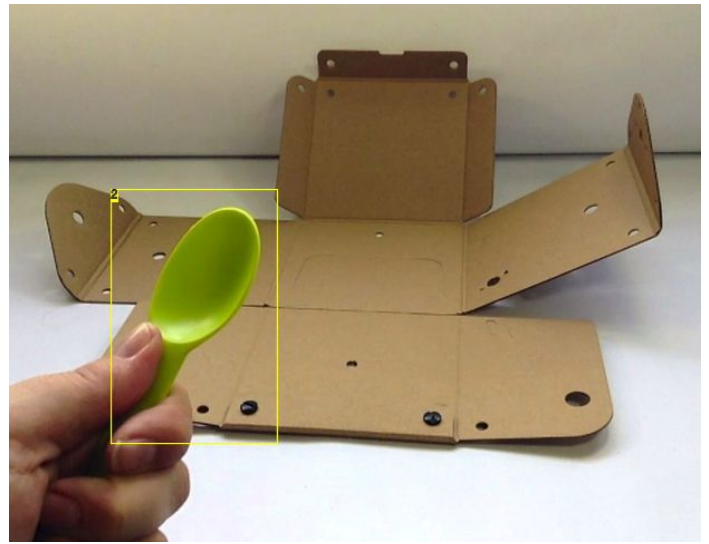
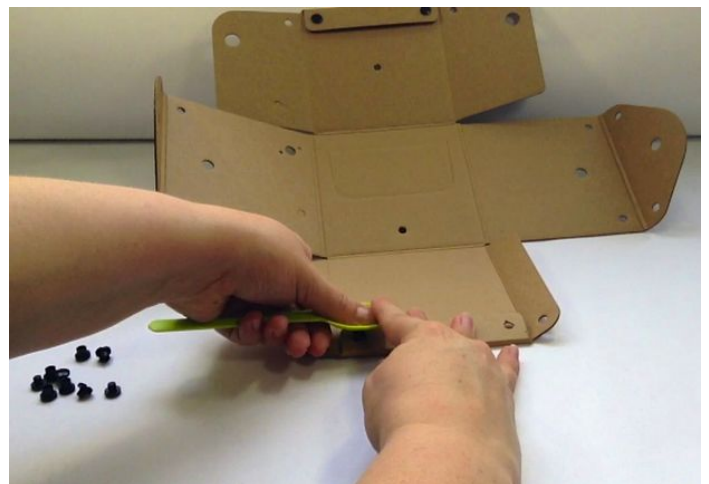


Image Notes

1. The bowl of a spoon is another option for pressing down on the rivets.
2. The bowl of a spoon is another option for pressing down on the rivets.



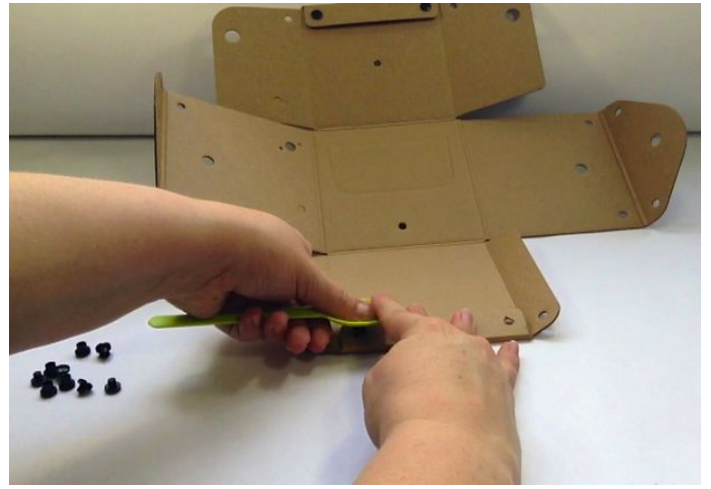
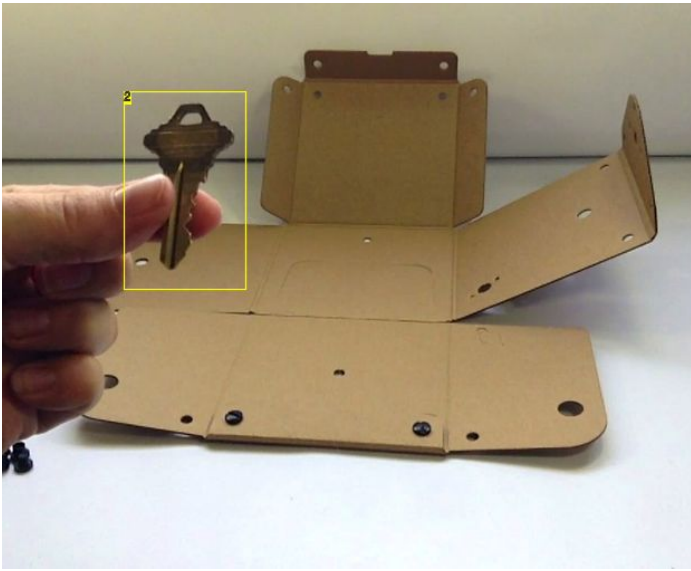


Image Notes

1. A key is another option. (A key doubles as a tool when punching out the cards as well)
2. A key is another option. (A key doubles as a tool when punching out the cards as well)

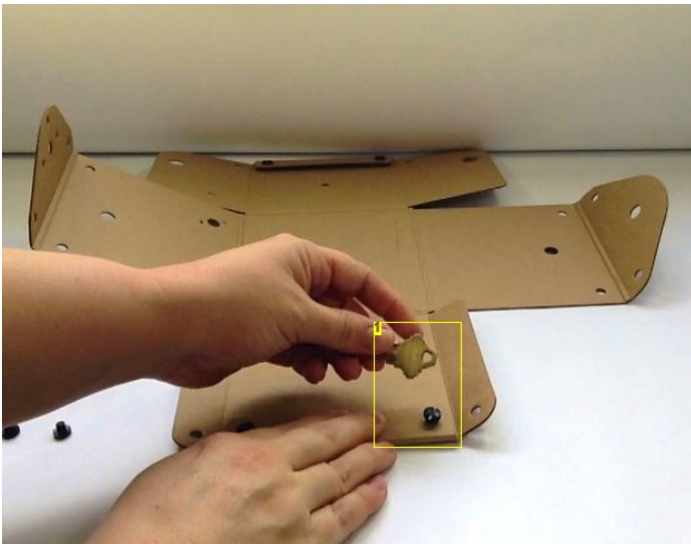


Image Notes

1. Press with your thumb on the big side of the key.

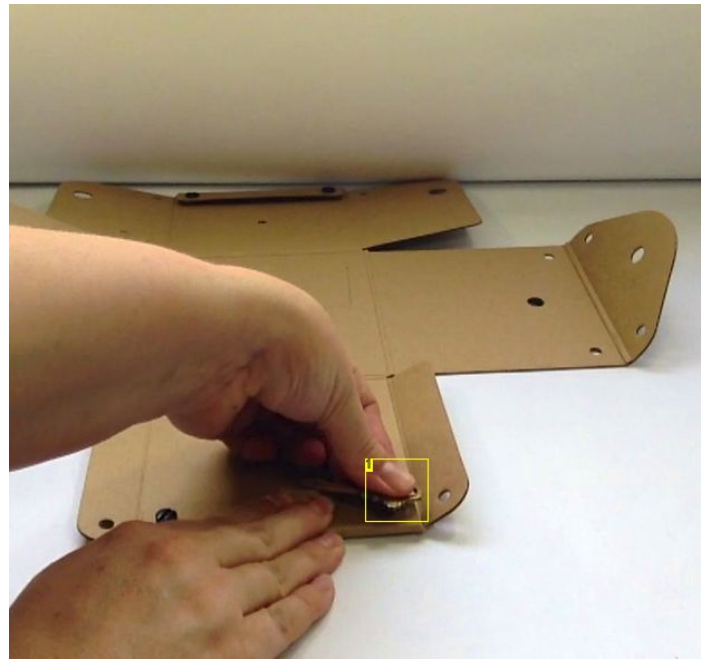
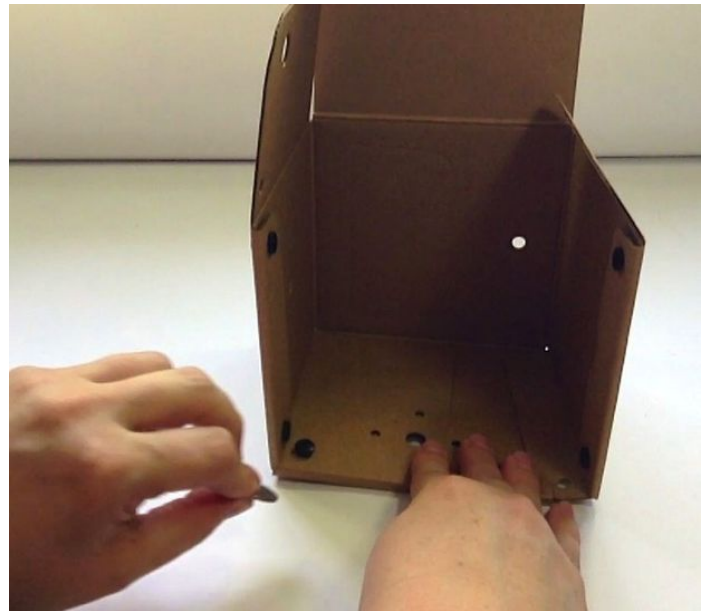
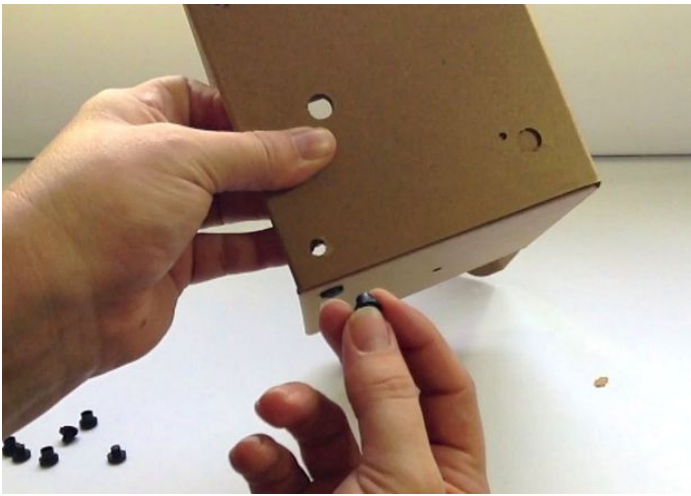
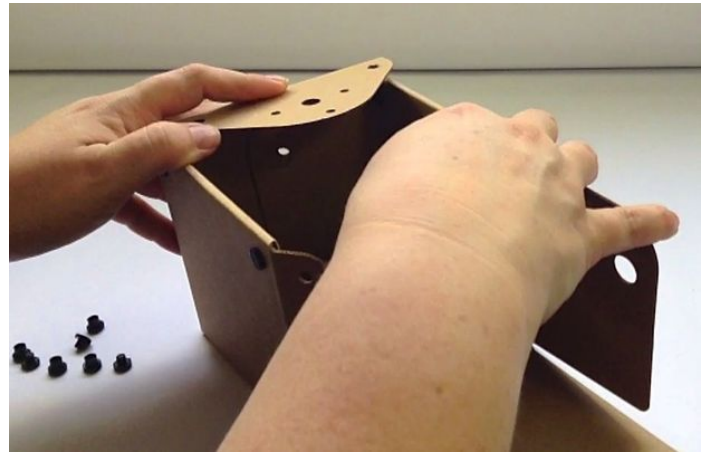
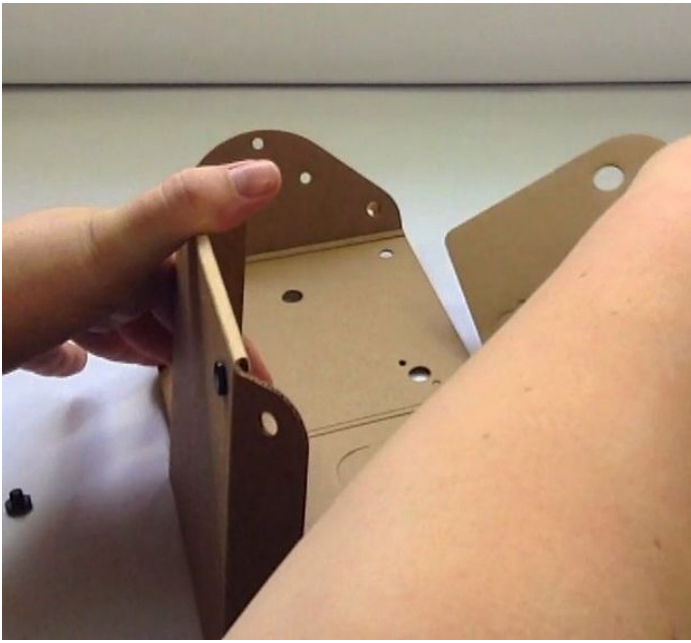
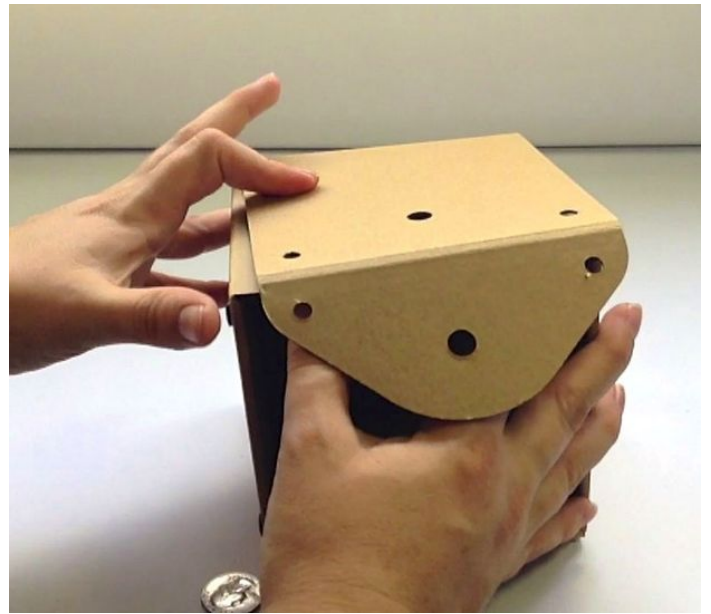
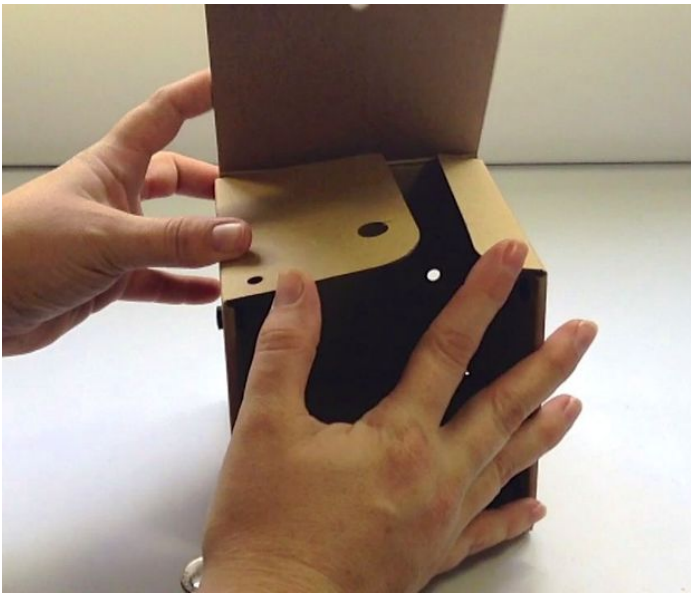
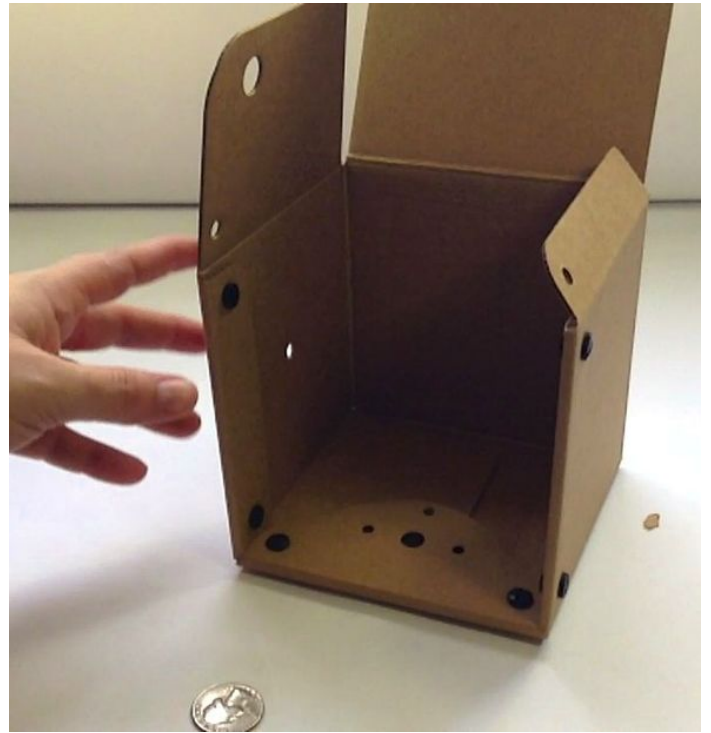
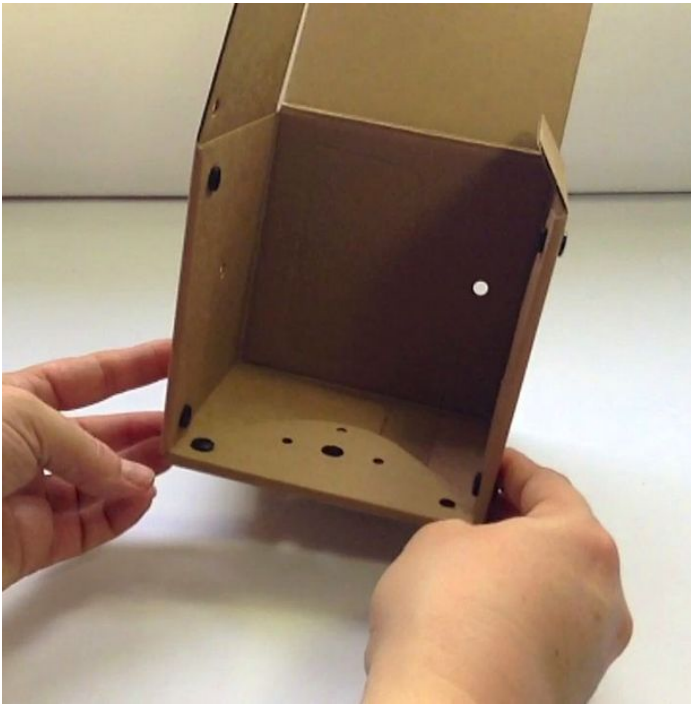
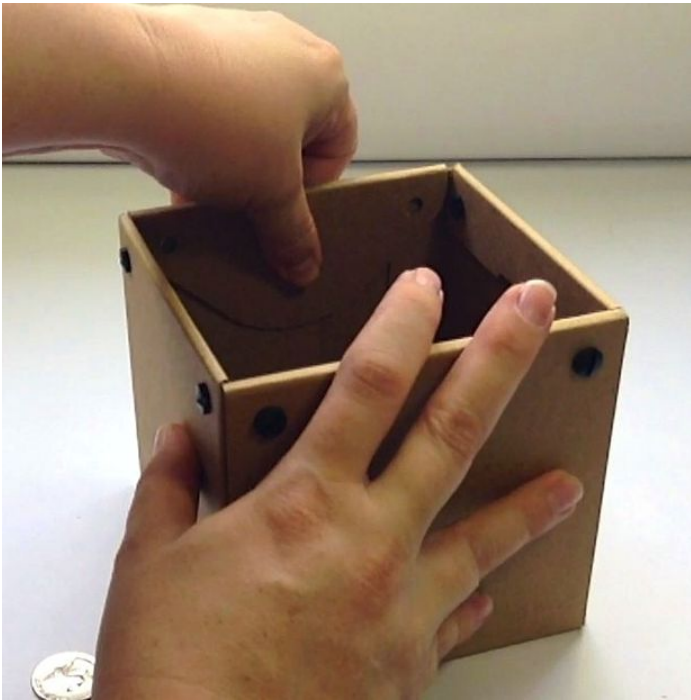


Image Notes

1. Push!







Step 3: Adding the Flipper

The flipper and page catch make the animation on the cards clearer, and go into that little dip on one of the narrow flaps we folded earlier.

One has two bumps on the back, the other has two holes. It is theoretically possible to attach these two pieces with your hands, if you have really strong hands. If you have trouble, you can use pliers.

If you have small kids around who like to put things in their mouths, the page catch is a potential choking hazard should it pop off. As it turns out, it makes things work a little better, but isn't strictly necessary (flipper yes; page catch, no), so you can leave it out if you want, or you can add a couple drops of super glue to help solidify it.

Expose one side of the double-sided tape square and attach it to the smooth back of the flipper (see pictures). Then you can remove the other side and slide it beneath that narrow flap with the dip. Try to avoid making contact with the sticky side until it's all the way into place. Tape has this tendency to stick to things, and it'll stick sooner than you want it to if you aren't careful.

Press on the narrow flap to adhere it well.



Image Notes

1. We need a thumb to help flip through a book.

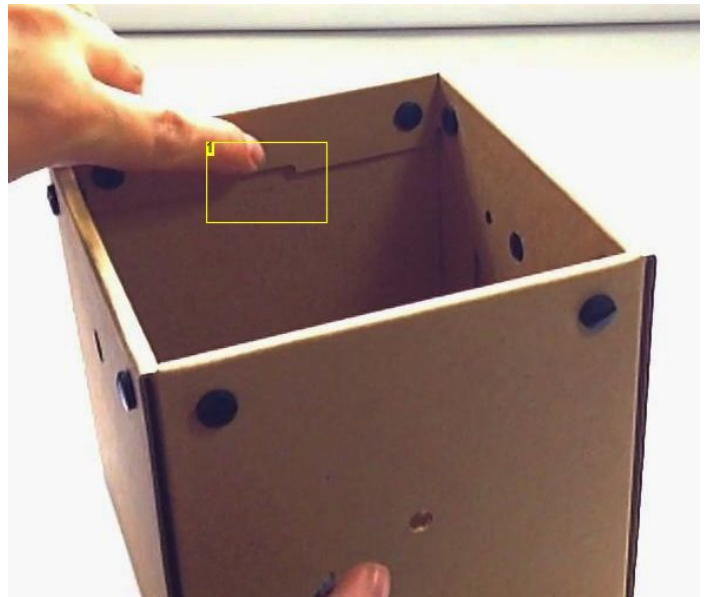


Image Notes

1. Locate the dip in one of the narrow flaps. This is where the flipper will go.

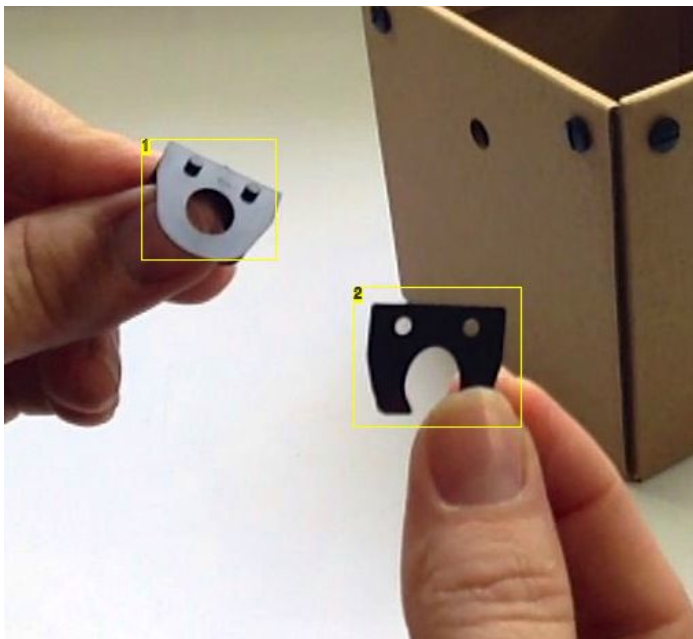


Image Notes

1. The back of the flipper has two bumps.
2. The page catch has two matching holes.

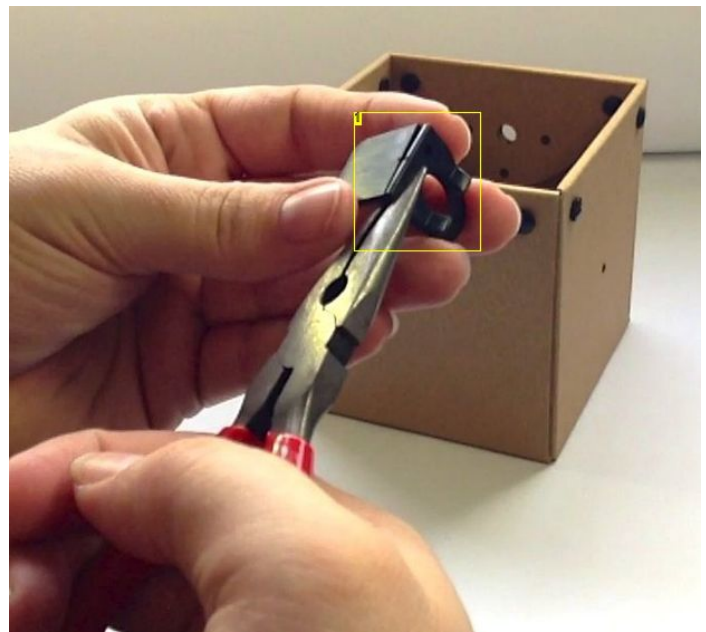


Image Notes

1. Pliers are a big help in snapping these together.

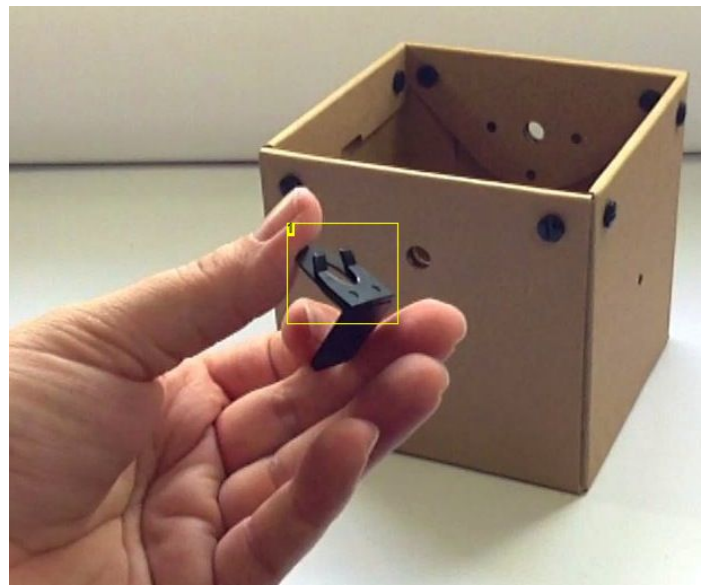
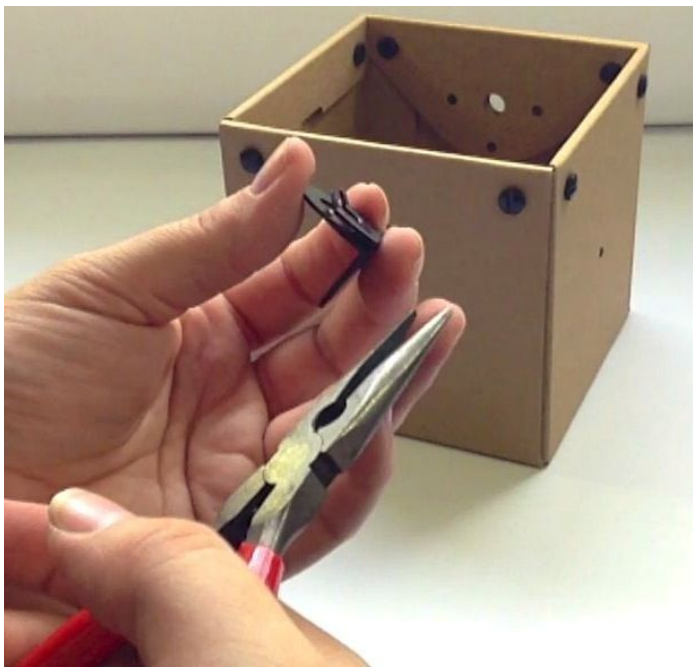


Image Notes

1. Page catch is attached with the ends poking away from the flipper.

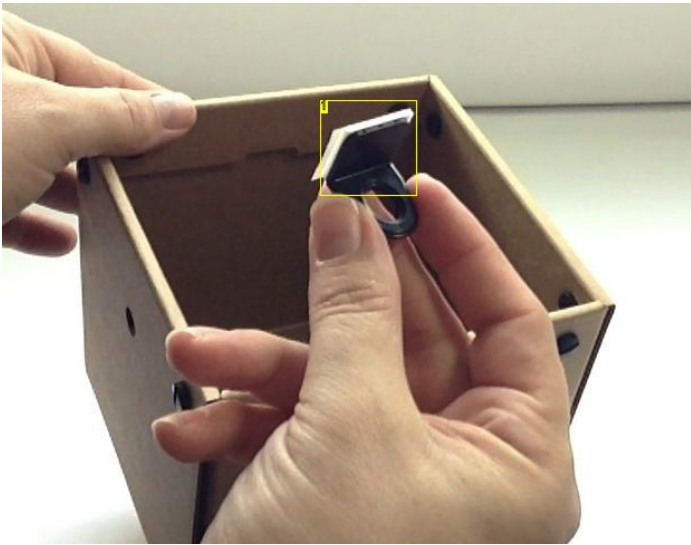


Image Notes

1. Attach double sided tape square to smooth side of the flipper.

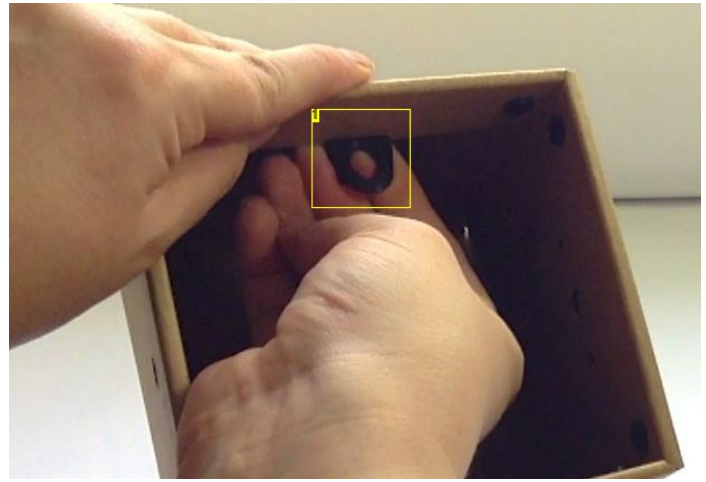
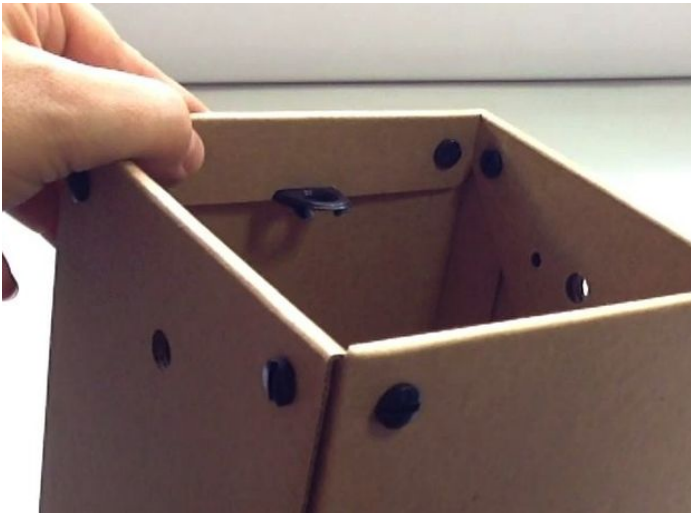


Image Notes

1. Flipper with tape fits right into that dip.



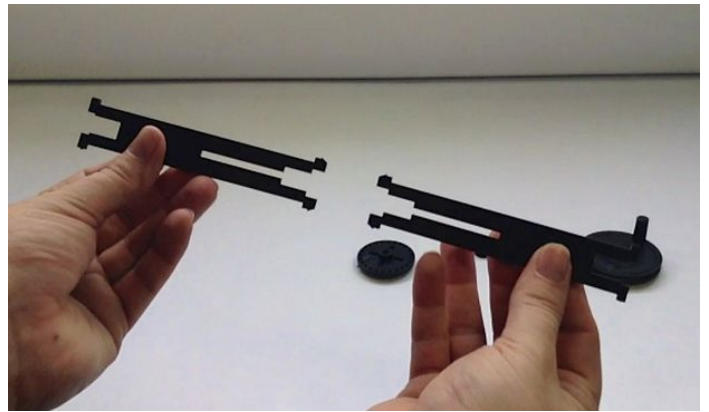
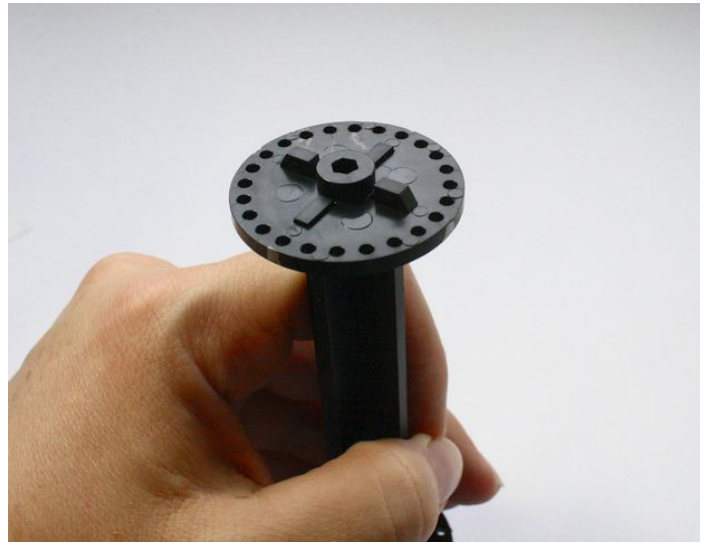
Step 4: Assembling the Spindle

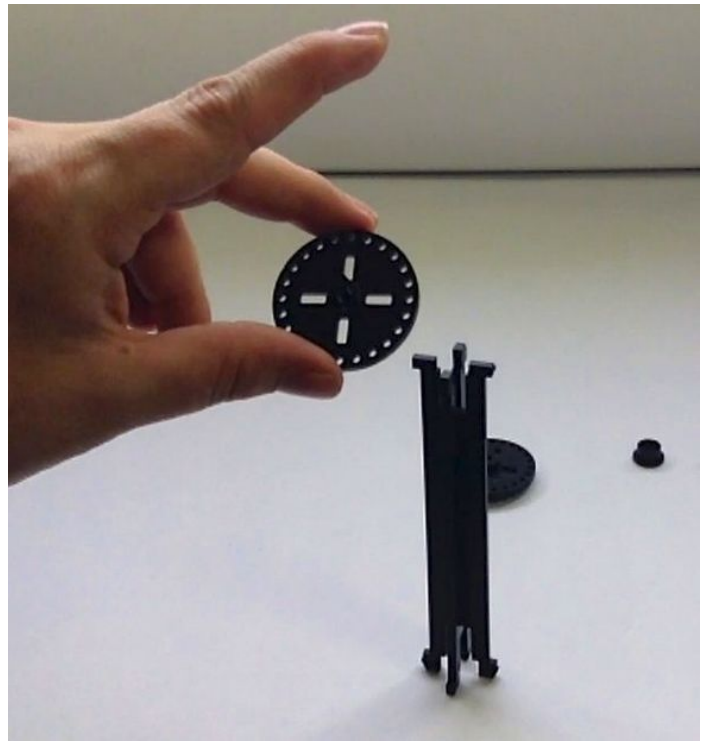
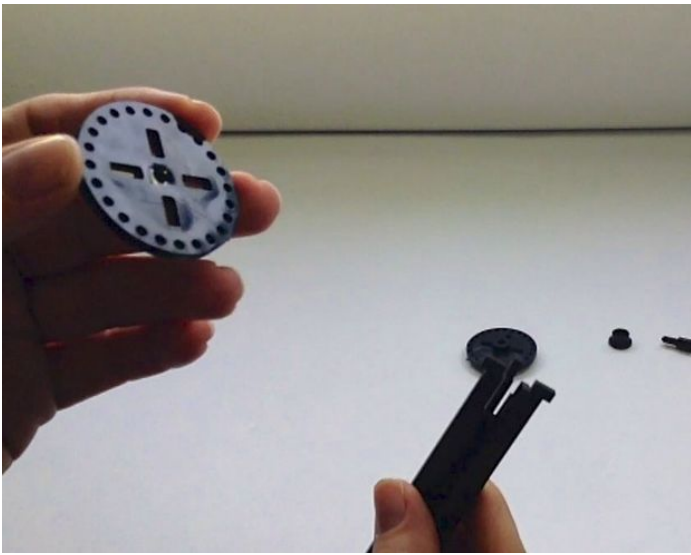
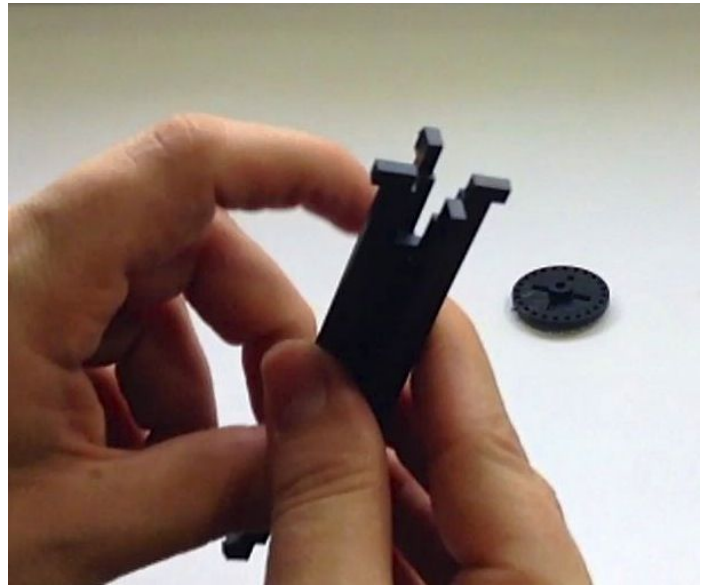
First, take the two H sections, hold them with the long legs pointing together, rotate one of them 90 degrees and then you can slide the slots together until they're the length of a single piece.

The spindle discs are attached to either end of this, with feet going into the rectangular holes. All of the feet from the H sections need to go in, but only two of them will snap all the way through. Make sure that the axle disc has the flat end on the inside, and make sure that the other disc has the narrow hub going inside (each side has a different size). It's easiest to secure these parts by standing the H sections on the table and gently rocking the disc over the rectangles until they're in place.

You'll notice that the spindle discs have a lot of holes in them. When you insert the cards, it's important for each one to be placed with either ends in the hole exactly across from it. A little trick to make this easier is to make marks at equal points around the disc, using a silver sharpie or similar marking tool. If you follow the edges of the H sections, you can make a mark over the hole that's directly at the end of either side. This will give you a nice, easily visible reference guide.

Finally, insert the axle pin into the little hex hole on the back side of the crank wheel. Placing the axle pin on the table and pressing down on the crank wheel makes it easier to get it all the way in.





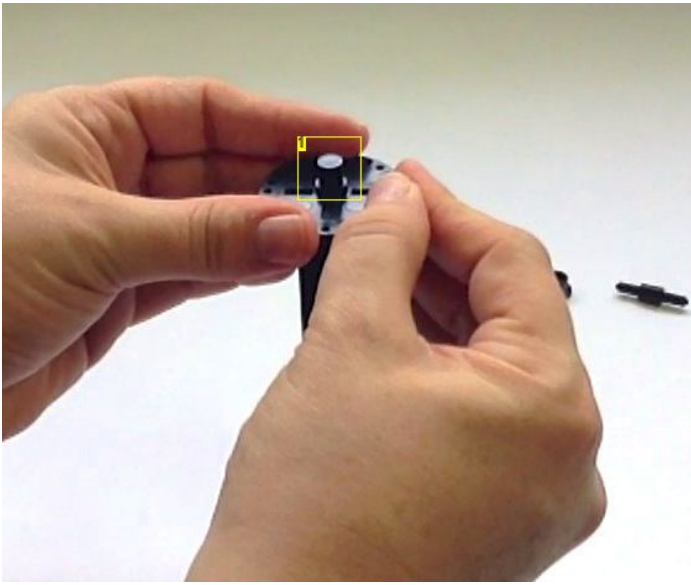


Image Notes
1. Axle side up

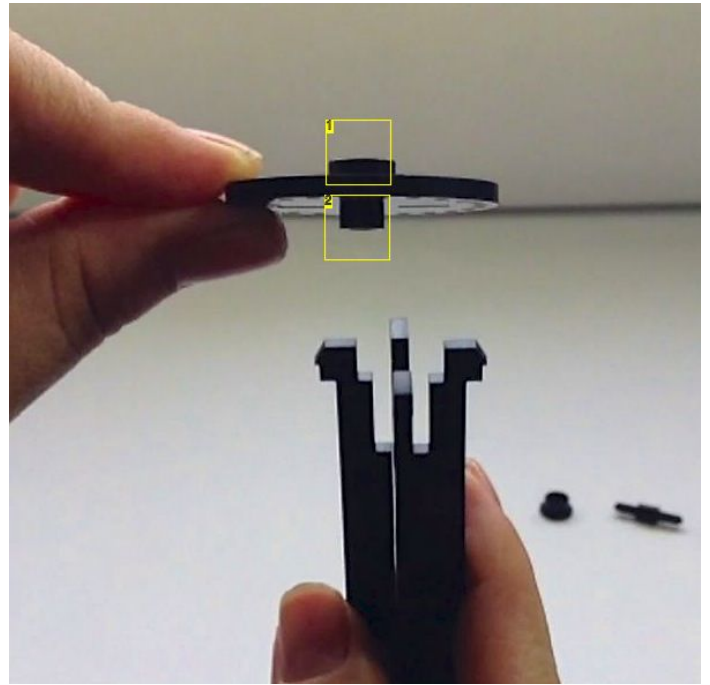


Image Notes
1. The top has a wider hub...
2. ...and the bottom has a narrow one.

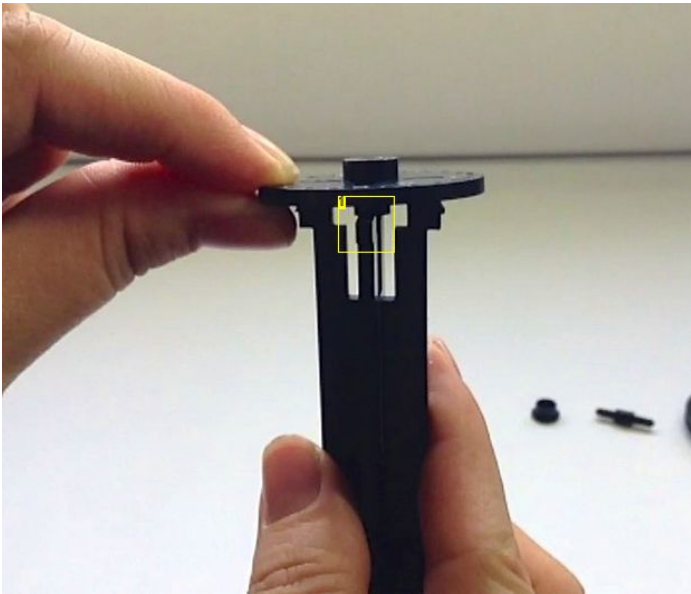
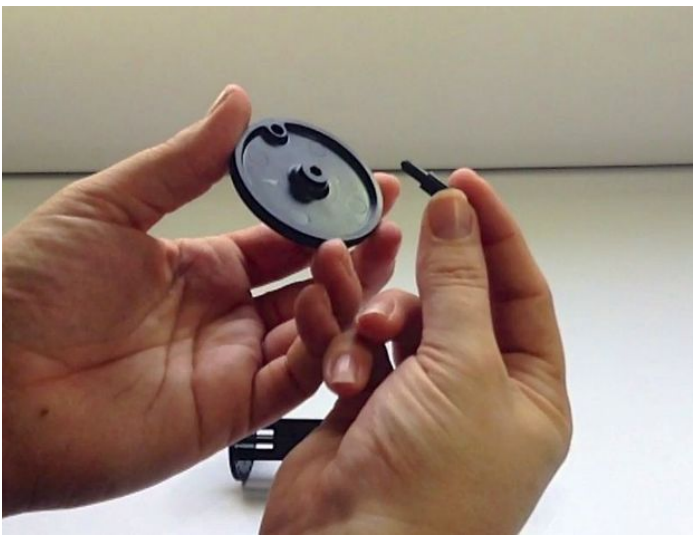
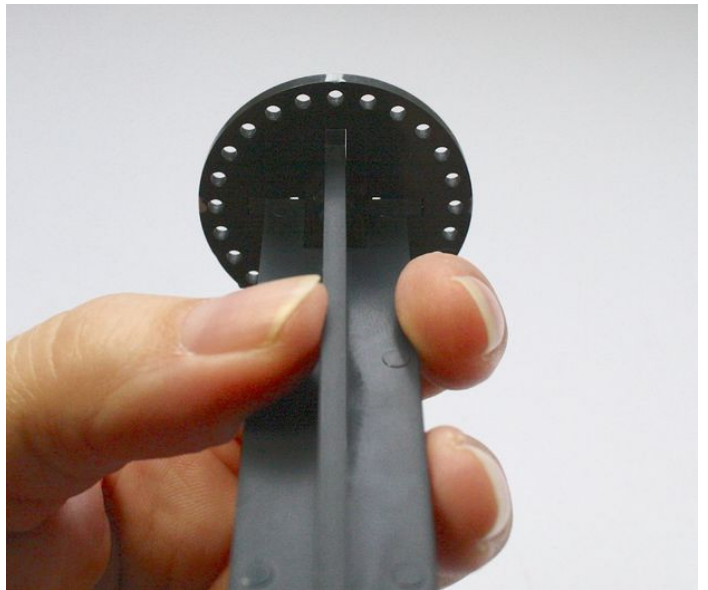
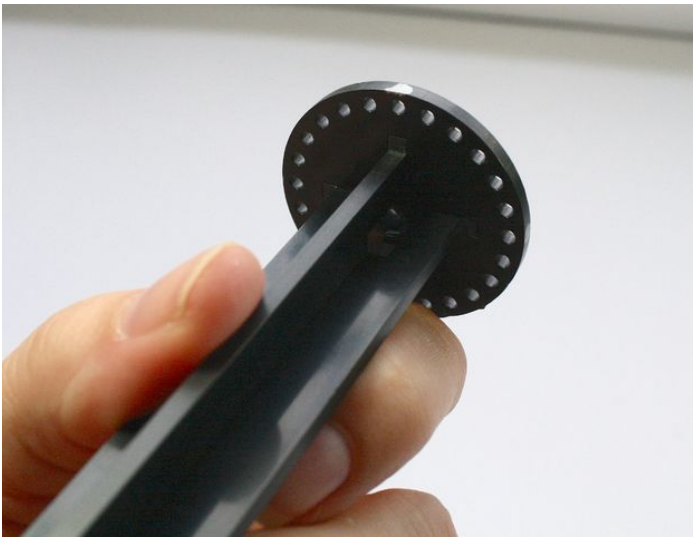
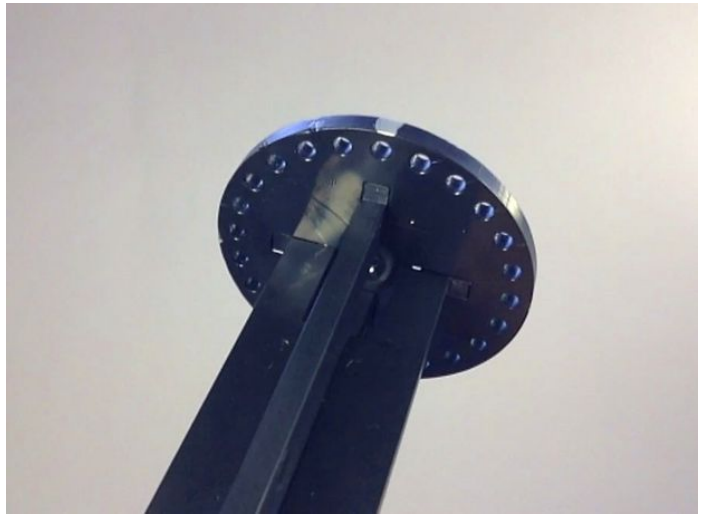


Image Notes
1. Make sure the narrow side goes inside.



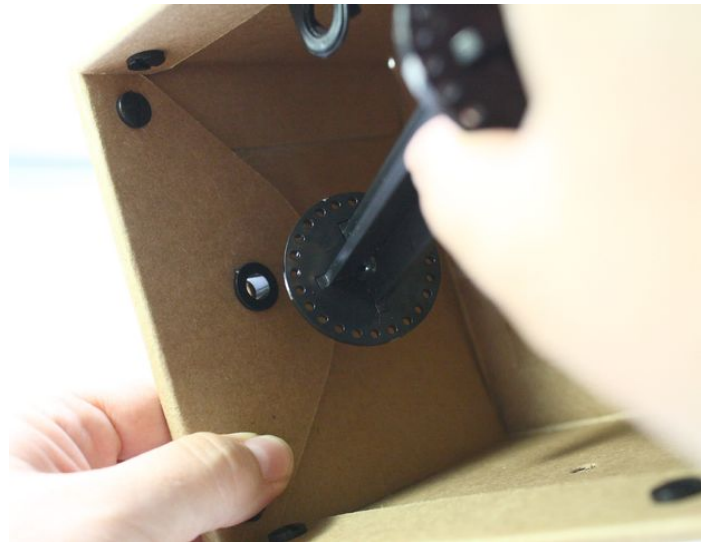




Step 5: Putting in the Spindle

Now it's time to insert the spindle. Grab the bushings, spindle and crank wheel. Insert the bushings from the inside of the box into the big holes on both sides. We use these to make it easier for the axle and spindle to spin around, as there is less friction against the smooth plastic than the rougher cardboard.

Place the box with the flipper up, and insert the big axle end of the spindle into that hole. The other end of the spindle lines up with the other bushing hole. This part is challenging, so make things easier on yourself and use plenty of light. To get the spindle aligned in the right place, look through the hole from the outside and shift the spindle until you can see the little hexagon-shaped hole. Then, to keep it in place, insert the axle pin from the outside and press it into the hexagon hole in the end of the spindle. Check the pictures in this step to get a better idea of the process.



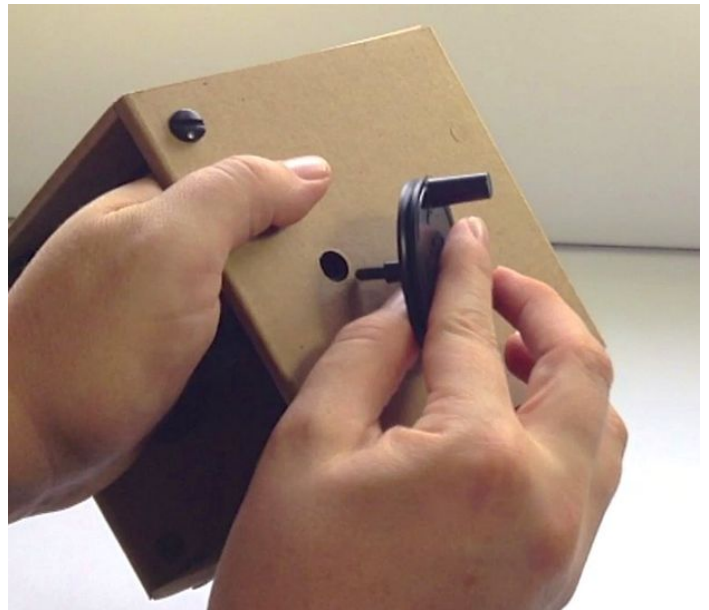
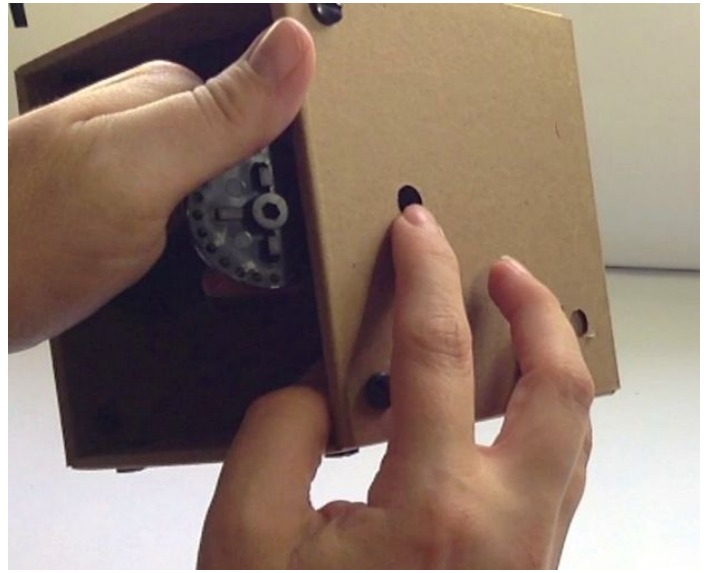
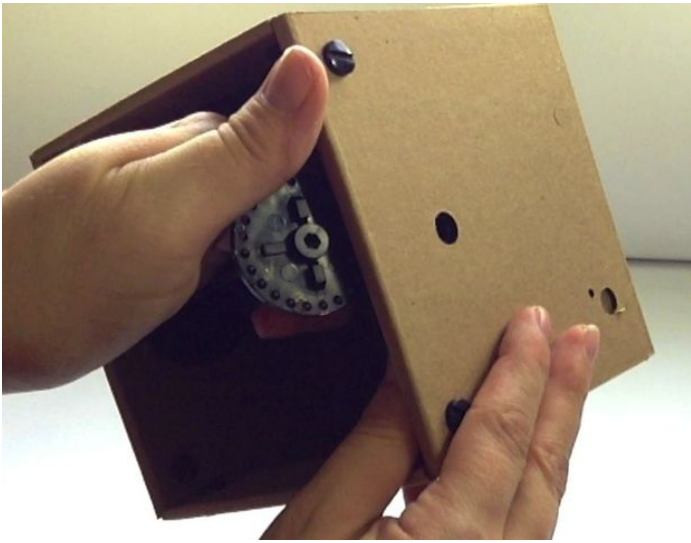
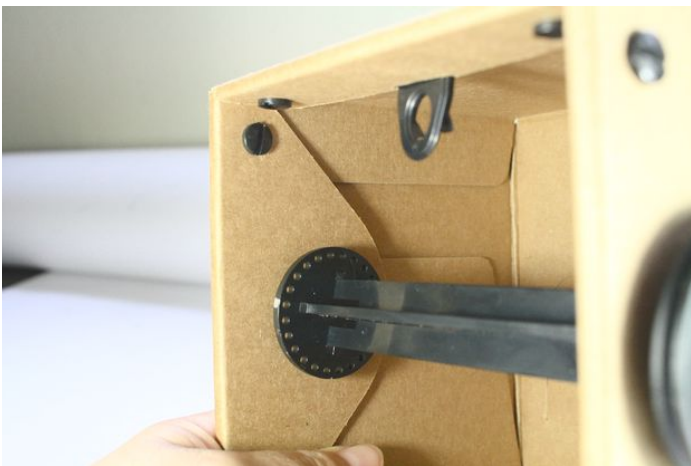
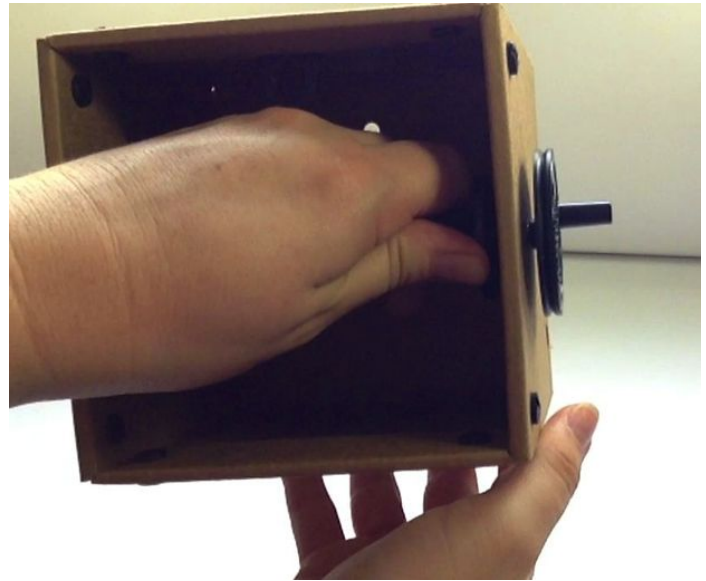
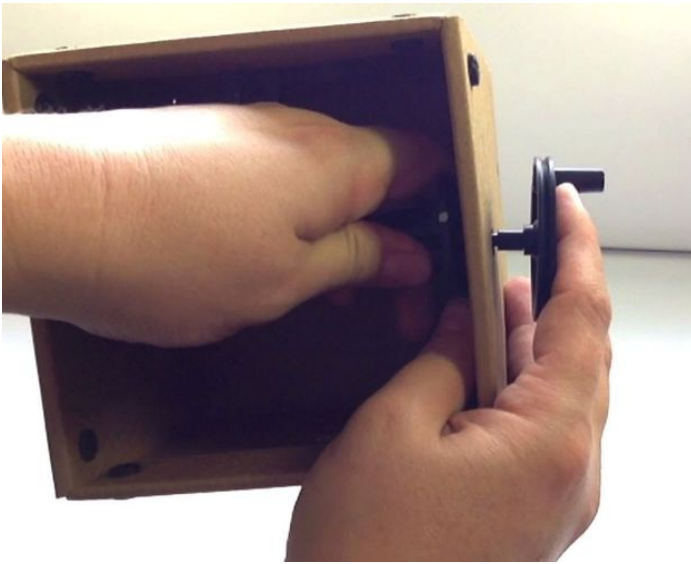


Image Notes

1. Shift the spindle until the hex hole is visible.



Step 6: Punching out the Cards

Now it's time to punch out the flip cards. These are made with a nice, heavy paper, so they're pretty solid. You'll notice that there are tiny little tabs or sprockets on either side. These parts are still a little bit delicate and you definitely don't want to tear them. It's absolutely possible to punch out these cards by hand, but there are a couple tools that can help keep them intact.

One option is to use a key. Rest the business end of the key on a tab and push down until it pops out, do the same to the other tab, and then punch out the rest of the card with your fingers. Another good tool is a popsicle stick. Use the thin side to support the tab as you pop it out.

Each card is numbered on the top right, so pop out all 24 cards and put them in order.



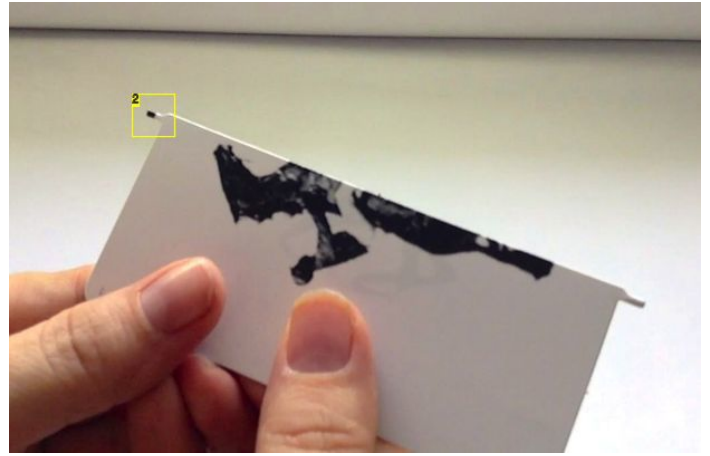
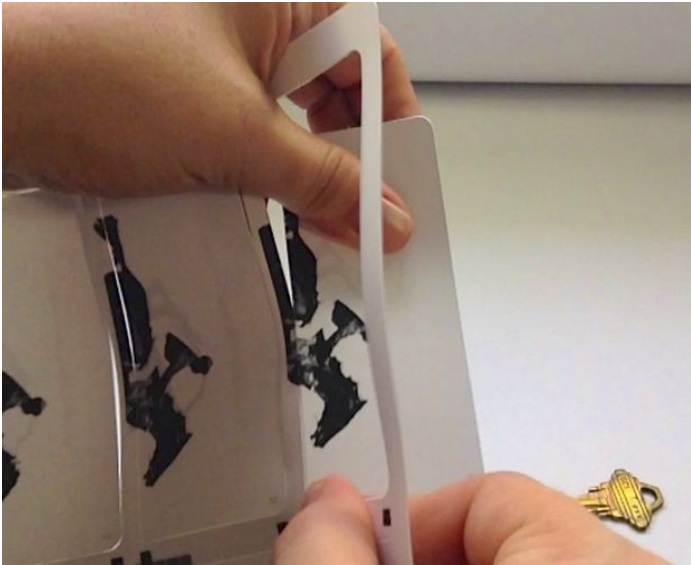
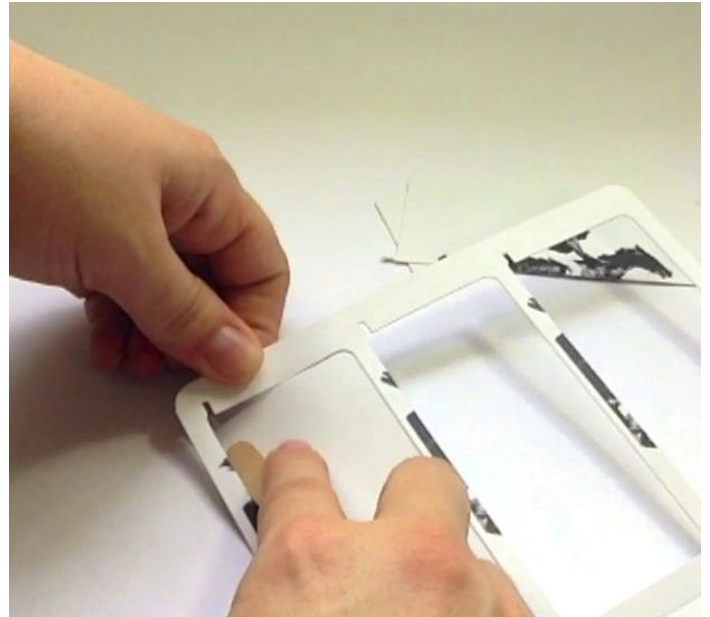
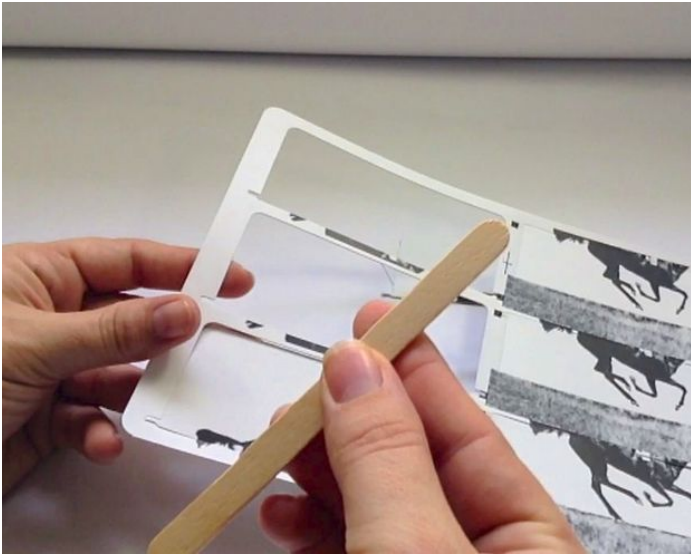


Image Notes
1. The tabs/sprockets
2. The tabs/sprockets



Step 7: Inserting the Cards

Now it's time to put the cards into the spindle. Remember those little marks we made on the spindle discs? This is where they come into play. Make sure the flipper is on the top side and the crank wheel on the right. Take the first card, and insert the tab on one side into one of the marked holes. You'll need to bend the card a little bit to get the tab opposite into the marked hole right across from it. Once it's in place, flip it down and grab card number two. Place the tabs for this one into the holes immediately above the ones you just used, and flip it down too. Continue with each successive card. Be careful not to skip any holes, or you'll have to go back.





Step 8: Finished!

And that is our FlipBookKit, assembled! Turn the crank wheel counter clockwise, as shown by the arrows on the wheel, and marvel at the animation.

You should know that the box is fairly sturdy, so when a child spins it wildly fast (which they will), the worst damage you're likely to encounter is for some cards to slip out, which is easily fixable.

One of the best things about the FlipBookKit Craft is customizing the blank box. You can color it, add stickers, glue on items, whatever your mind comes up with.

We love to hear about your experiences making these, so stop by the [website](#), [Instagram](#), and [Facebook](#) pages to share pictures and stories, and to see what others are doing with their FlipBookKits!

Keep an eye out for additional tutorials about how to make your own animations for the FlipBookKit, and how to throw a FlipBookKit party.

Thanks for reading, and have fun!



