

## MAKE YOUR OWN FLIPBOOKS

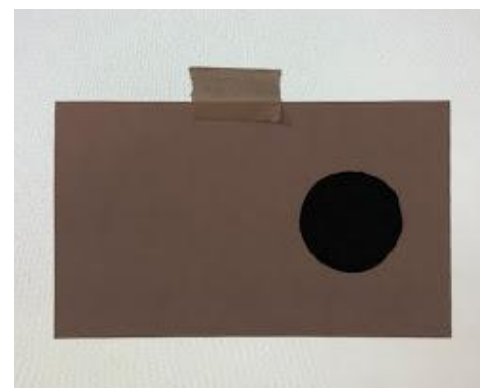
**Age:** 5+

**Materials:** Index cards (or cardstock paper cut into rectangles), markers, binder clip or masking tape, phone tablet, or anything with a screen (or a bright window).

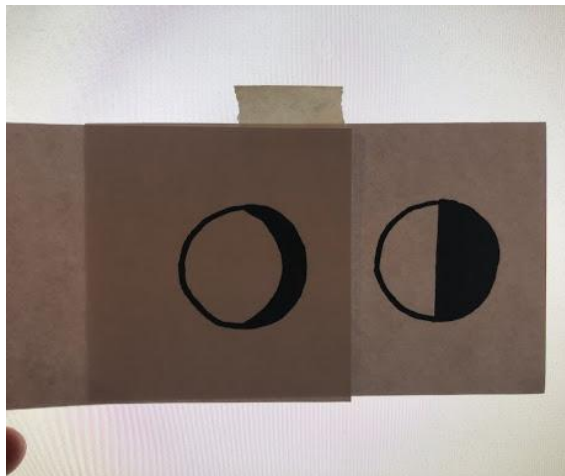
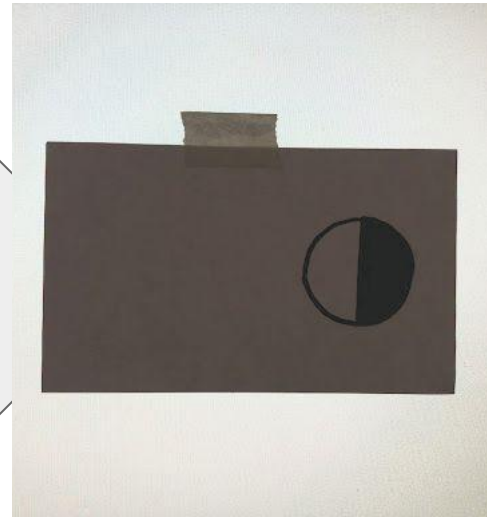
**Introduction:** Flipbooks are one of the simplest ways to create animation or pictures that move. This week, we are going to create a flipbook that teaches us about animation and the different phases of the moon.

### Activity: Make The Cards

- The first animation we are going to create is going to be a Moon Phase animation. When you look up at night, what shape is the moon? Well, the answer depends on the day. The moon has different phases, from new moon (where you can't see anything at all), crescent moon (where it has a small smile), half-moon (where it's shaped like an orange wedge), and full moon (where it's a big, bright ball). Our first flip-book is going to recreate these phases.
- First, take an index card. On the right side of the index card, draw a circle and fill it in so that it is all black like a full moon. Tape this card in front of a screen. In my case, I am taping it on my computer (if you don't have a screen you can use your window on a bright sunny day).

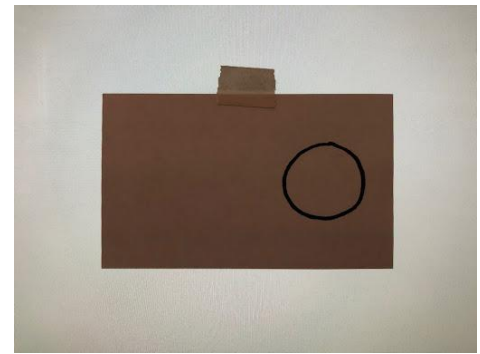


Place a new index card over the first drawing and turn your device's brightness all the way up. Draw the outline of the first full moon. Then, draw a small crescent on the left side and fill in the rest of the moon shape.

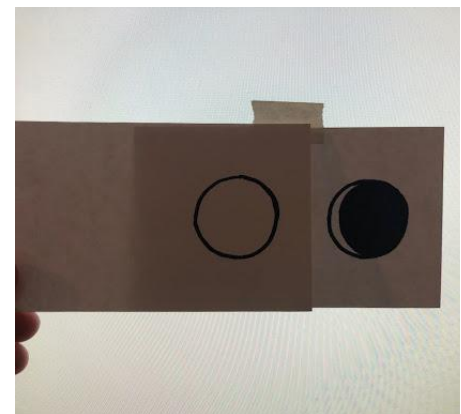
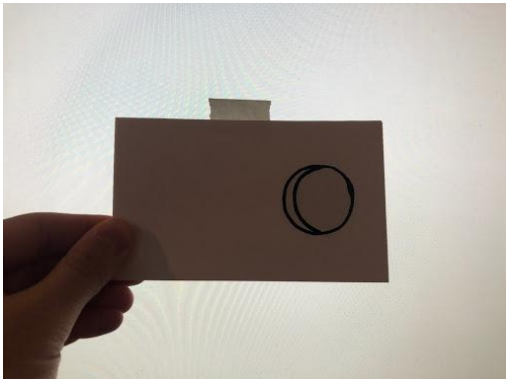


Second, tape your crescent moon card to your screen. Place a new index card over it, and again draw the outline of the circle. Make sure you do not outline the crescent! Then, draw a line down the middle, and color in the right side. It should look like one of those NYC half-moon cookies. Yummm.

Third, tape your half-moon card to your screen. Place a new index card over it, and draw the outline. Then, draw a crescent shape, this time on the *right* side of the circle. Fill in the *crescent* with black. This moon phase is called a “waxing gibbous”.



Next, tape your waxing gibbous to your screen. Place a new card over it, and draw the outline. This time, don't fill *any* of the shape with black. This is our full moon card.



By now, you should have gotten the hang of this process. We need to make 3 more index cards that repeat the crescent, half, and gibbous cards, but this time, you are going to invert the colors. This means that all the shapes that are black become white, and all the shapes that are white will become black. You can use the next picture as a reference:





## **Assembly**

Stack your flipbook cards in order. On the left side of the stack, take a binder clip and close the clip over the left edge. If you do not have a binder clip, you can use masking tape to wrap around the left edge of the flipbook.

## **Test**

Finally, while holding the left edge of the flipbook, flip through the cards and see what your final animation looks like! Take a look at mine as an example:

<https://www.youtube.com/watch?v=9Hw7l1wlNYw&feature=youtu.be>

