



## Setup

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- Divide all materials among the several tables where kids will be working
- Watch [this video](#) of one of our librarians flying a completed bird kite, so you can see what the end result might be.
- Create a list, display, or small book bundles on inventing/designing for your patrons to peruse. Use this book list, if helpful: <https://www.bklynlibrary.org/search?booklist=573630>

## Podcast Clip

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- Find and charge (if necessary) your speaker and the device from which you'll play the **Page Flippers** snippet.
- The clip will appear as a "bonus" episode on the podcast feed (you can find it on [Spotify](#), [Apple Podcasts](#), [Stitcher](#), [RadioPublic](#), [Google Podcasts](#), etc.) or you can preview the clip here: [Page Flipper Bonus Clip - Designer.mp3](#)
- Clip summary: Librarian Rachel has a dream to one day complete the highest monkey bars at the park. When she gets scared and freezes, Page Flipper Euna has to think on her feet and design a way to help her get across the bars safely.

## Process

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- Welcome the patrons to your program – play some music while they gather and settle in (if you like)
- Start your program by talking about examples of lift and drag in flight: Holding your arm out of the window of a moving car is a good example. Drag acts to directly oppose motion, whereas lift acts in a direction perpendicular to motion. As you rotate your hand in the air stream, you vary the amount and direction of the lift and drag acting on your hand.
- Making the bird kite (from Grandin, p. 126-130)
  - Using scissors, cut your file folder in half. Each half can be made into its own kite
  - Use your marker to make a dot in the middle of one of the long sides of the folder, at the edge. This is now the bottom of the kite. Place another two dots on the edge of each of the short sides of the folder 6 1/4 inches up from the bottom. Draw three lines between the three dots so that you have one big triangle.
  - Create the bird's "head" by marking two dots on the long side of your triangle, each 4 1/2 inches from the short sides of the folder. Draw a 2 1/2 inch line upward from each dot. Connect the tops of the lines with a slightly rounded line to create the top of the bird's head.
  - Using scissors, cut out the bird's shape.
  - Fold the wing tips up by 90 degrees, 1 inch from the ends of the wings.
  - With a small piece of tape, fasten a 10-foot length of thread to the head.
  - Attach an 18-inch length of thread to the end of the kite. Try experimenting with this length.

- Attach a 22-inch length of crepe paper to the end of the thread at the rear of the kite. Experiment with the length of the crepe paper. Try different tail materials.
  - Bend the bird's head down slightly. This helps to provide lift. Experiment with the angle of the head until you get the lift that you want. Your bird kite is now ready to fly.
- While the children create and decorate their kites, you can play the clip from **Page Flippers** – ask some follow-up questions of your audience.
  - What was the invention Euna created to help Librarian Rachel? How did Euna adjust her invention to create the desired result? What would you have invented to help Librarian Rachel with the highest monkey bars?
- Invite everyone to check out a book on inventing and designing as they pack up and leave – the bird kites are theirs to keep and continue their discovery!
- Have **Page Flipper** postcards, flyers, bookmarks, or other handouts on hand to give out to participants.

### Resources

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- You can point patrons toward more Library Lab programs, or highlight a few upcoming programs (search our calendar of events using the “Library Lab” tag here: <https://www.bklynlibrary.org/calendar/list/Library%20Lab>)
- For more information on lift and drag, and how to explain the concepts to children, see this Scholastic article: <https://teacher.scholastic.com/paperairplane/airplane.htm>