



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Iris Wu	Project Number J0239
Project Title Flipmaster 5000	
Abstract Objectives/Goals My objective was to find a way to enable musicians to turn pages of music without interrupting their playing. To do so, it was necessary to use some other means to flip the page, thus freeing the hand. Methods/Materials At first, I did some product research to see what type of machines were available on the market. I found many good ideas, but was surprised to find no available products. I started brainstorming different designs that used my foot to turn the page and tested them by building prototypes. I knew that my foot would not be able to move a large distance to turn the page as that would disrupt my playing. Then I realized I needed third class levers, mechanisms that use a large force applied over a short distance and convert it into a small force applied over a long distance. With that in mind, I arrived at my final product through trial and error. Results My machine is composed of several third class levers. Each lever is comprised of one hinge, dowel, and pedal. The bottom of each dowel is attached to the base using a hinge which acts as the fulcrum. Extending from the hinges are pedals where the foot exerts the input force to move the lever. At the top of the dowel is a chain with a clip at the end that attaches to the page of music. This chain is important as it lets the machine adjust to various heights of music stands and sizes of books. There is also a rubber mat on the bottom of the base to prevent sliding on slippery surfaces. Through my testing, I have found that with the proper setup, my machine can turn the pages forward or back as needed. However, I have also discovered the pushing of the pedal can be improved and, though the number the pages turned by the machine is usually sufficient, page capacity may need to be increased for longer pieces. In future prototypes, I hope to address these two problems. Conclusions/Discussion Although small improvements can be made to increase page capacity and ease, the Flipmaster 5000 is a useful machine for musicians because it lets them turn pages of music without interrupting their playing.	
Summary Statement The Flipmaster 5000 is a page-turning machine designed to help musicians turn pages of music without disrupting their playing.	
Help Received My mom helped me buy the necessary materials and sawed and drilled the wood	