



**CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY**

Name(s) Michelle Y. Wang	Project Number S0423
Project Title Digital vs. Paper: Which One Serves as a Better Form of Standardized Testing?	
Abstract Objectives/Goals The purpose of this experiment was to determine the better format for standardized testing to ensure higher student performance. The P-values from the online test-takers were less than 0.05 for 9-10th graders in science and 11-12th graders in math; thus a significant difference in scores. Methods/Materials Use of Flexiquiz software, Excel, and 9th grade textbooks. Results Online testers in their freshman and sophomore year on science scored significantly higher than paper testers with a p-value that is less than 0.05, possibly due to a more focused environment online whereas the time limit has a better effect on them. The evidence presented in these two areas were strong enough to reject my null hypothesis and create an alternative hypothesis that online testers score exceedingly well on science and math; especially if the science test-takers are freshman and sophomores, and the math test-takers being juniors and seniors. In addition, online testers in math in their junior and senior year scored significantly higher online because they may have more experience due to being in their last years of high school. Conclusions/Discussion The results showed that online test scores are higher, perhaps because they tended to be more focused, intent, and took their time wisely. Juniors and senior math test-takers, and freshman and sophomore science test-takers, had a low P-value; indicating a strong contradiction of my hypothesis as the difference between the scores were quite large. This creates an alternative hypothesis that digital tests do aid in some cases.	
Summary Statement I analyzed the differences between digital and paper testing to ensure better test format; resulting in a rejection of my null hypothesis because online science and math scores were better.	
Help Received Student participation in taking the tests, and my dad helped me proofread my report	