



# CALIFORNIA SCIENCE & ENGINEERING FAIR 2018 PROJECT SUMMARY

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<b>Project Title</b> <b>Reaction to Action</b>	
<b>Objectives/Goals</b> The objective is to determine if there is a difference in reaction time for people that play action video games versus those that do not play action video games. <b>Abstract</b> <b>Methods/Materials</b> Materials List: 24 test subjects: 12 subjects that played action video games and 12 subjects that played non-action video games or no video games, laptop computer, free computer reaction time website, ruler with reaction time marked in msec (formula $d = \frac{1}{2}at^2$ where d is the distance, a is acceleration due to gravity (9.81 m/s <sup>2</sup> ), and t is time) Procedure: Test 12 action playing subjects with the computer app 5 times each, repeat with 12 non action playing subjects, record data. Test same subject groups again with ruler drop test. Measure fingers 3 cm apart, put hand at line, experimenter drops ruler, subject catches ruler as fast as they can, record measurement, test each subject 5 times, record data. <b>Results</b> The action gamers had an average score for the computer test of 293 ms, and had an average score of 154 ms on the ruler test. The non-action playing subjects tested with an average of 393 ms on the computer test and an average of 179 ms on the ruler test. There was a significant difference in reaction time between the two groups for both tests. The action video gamers had a faster reaction time with both tests. <b>Conclusions/Discussion</b> After testing 12 action gamers and 12 non-action gamers, I concluded my hypothesis correct by showing that people who play action video games have a faster reaction time than people who do not play action video games. I used two different tests to account for any bias or inaccuracy in testing. This experiment would be easy to reproduce. This proves that there are positive effects from action video games. These effects could be used to train people for specific benefits or careers.	
<b>Summary Statement</b> Action video game players demonstrated a faster reaction time than non-action video game players thru multiple tests.	
<b>Help Received</b> My parents and science teacher assisted me in refining my project.	