



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Andrew A. Shen	Project Number J0728
Project Title Distracted Drivers	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this project was to quantitatively measure how much texting while driving affects a driver's reaction time.</p> <p>Methods/Materials To test my hypothesis, I designed and created a two-part program that simulates driving with and without texting. The program was written using the Scratch programming language (from MIT).</p> <p>To simulate driving without texting, a pedestrian appears randomly on the screen every 10-20 seconds, and the driver is instructed to hit the break button when he/she sees the pedestrian. The driver's reaction time (the time from when the pedestrian appears to when the driver hits the break) is recorded by my program.</p> <p>To simulate driving while texting, the same procedure is repeated with an interactive chat box added. The driver will answer basic questions from the chat box while trying to hit the brake as soon as possible when pedestrians appear.</p> <p>I had 24 different people test my program, with 5 trials per person, and all reaction times were recorded.</p> <p>Results Every driver's reaction time was slower when texting, and the average reaction time was 141% slower when texting.</p> <p>Conclusions/Discussion My data showed that texting while driving dramatically slows down drivers' reaction time. My project provided an easy, safe, and fun way to test the effects of texting without having to put drivers on a real road.</p>	
Summary Statement In this project, I created a simulation program that can quantitatively measure the effect of texting on driver reaction time in a safe and fun way.	
Help Received teacher gave feedback on experiment, mom gave feedback on the simulation program, friends and neighbors help test the program	