



CALIFORNIA STATE SCIENCE FAIR 2014 PROJECT SUMMARY

Name(s) Georgia G. Johnsen	Project Number J0718
Project Title Fatal Distraction	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to determine which was more distracting to drivers, talking on a cell phone held to one's ear, or talking on a hands-free cell phone device. My goal was to determine which was more distracting by creating an experiment utilizing a sorting exercise.</p> <p>Methods/Materials My experiment included three steps. Step 1. Subjects were asked to sort 200 colored candies without any distractions. Step 2. Subjects holding a cell phone to their ear, while asked to sort 200 colored candies as they answered mental math questions. Step 3. Subjects using the speaker phone feature on a cell phone (hands-free), while being asked to sort 200 colored candies as they answered a different set of mental math questions.</p> <p>During all three stages, or steps, I timed the participants, recorded how many questions they answered, and took note of their level of frustration as well as their strategies employed to deal with their frustration.</p> <p>Results The results showed that although participant's times decreased slightly with each task, their ability to answer questions dropped significantly when they used a hands-free device (average: 9 questions) compared to using a cell phone held to one's ear (average: 12 questions). Interestingly, the level of frustration for participants increased significantly when using a hands-free device, and the subjects used a greater number of strategies to try and slow the questioner down, in order to allow the subjects to hear and focus on the questions being asked.</p> <p>Conclusions/Discussion My hypothesis was correct, it is more distracting to talk on a hands-free cell phone than it is to talk while holding a cell phone to one's ear. Therefore, it would be more distracting to drivers to drive a vehicle utilizing hands-free devices rather than holding a cell phone traditionally.</p> <p>This experiment opens an interesting dialog because California has created law that drivers must be hands-free, and federal law requires all new cars and trucks to come equipped with hands-free device support. If it is more distracting to drive hands-free than not, these laws should be rethought. I am concerned about this particular subject because both my brother and sister drive, and in a few years I will be driving too. I would like us all to be as safe as possible.</p>	
Summary Statement My project determined that using a hands-free cell phone device was more distracting while driving when compared to holding a cell phone to one's ear.	
Help Received Both my mom and dad helped me with this project by asking math problems to my subjects. They were in another room on a phone asking the questions while I observed the subjects as they sorted the colored candies.	