



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Ilana Engel	Project Number J0408
Project Title Mario Says, "Don't Talk on the Phone while Driving!"	
Objectives/Goals The objective was to find out if talking on a phone impairs driving ability, and whether a hands-free-system improves driving performance as compared to using a hand-held cellphone.	
Abstract A Mario kart Wii game was used to test 70 people, ranging from 9-75 years old. The Mario wheel controller was immobilized on a post to more closely simulate a driving wheel in an actual car. The subjects first practiced racing a specially selected course until their times became stable. They then completed four tests on the same course under each of the following conditions in a random order: 1) without distractions, 2) holding the phone without talking, 3) holding a conversation over a hand-held phone, and 4) holding a conversation through a speaker phone. I talked with the subjects using a phone in another room for the conversation tests. I recorded the times to complete the course under each condition.	
Methods/Materials The Mario wheel controller was immobilized on a post to more closely simulate a driving wheel in an actual car. The subjects first practiced racing a specially selected course until their times became stable. They then completed four tests on the same course under each of the following conditions in a random order: 1) without distractions, 2) holding the phone without talking, 3) holding a conversation over a hand-held phone, and 4) holding a conversation through a speaker phone. I talked with the subjects using a phone in another room for the conversation tests. I recorded the times to complete the course under each condition.	
Results Talking on the phone while performing the driving task significantly slowed the performance of the population as a whole. Using the speakerphone did modestly improve the performance of the whole population, as compared to using the hand-held phone. However, when the population was divided into age and gender subgroups I found that only the boys did clearly better with the speakerphone than with the hand-held phone. Furthermore, the boys were also unique in that there was not a significant difference between their performance on the speakerphone as compared to driving without distractions.	
Conclusions/Discussion My conclusion is that talking on the phone while driving should not be allowed, even with a hands-free system, because the speakerphone only dramatically helped the driving ability of young males.	
Summary Statement My project examines the effect of holding phone conversations while driving.	
Help Received Mr. Bardo Escobedo designed the Wii wheel mount, my Mother and brother helped recruiting subjects, and my Father helped with statistical analysis.	