



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

<b>Name(s)</b> <b>Ilana Engel</b>	<b>Project Number</b> <b>J0408</b>
<b>Project Title</b> <b>Mario Says, "Don't Talk on the Phone while Driving!"</b>	
<b>Objectives/Goals</b> 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.	
<b>Abstract</b> 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.	
<b>Methods/Materials</b> 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.	
<b>Results</b> 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.	
<b>Conclusions/Discussion</b> 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.	
<b>Summary Statement</b> My project examines the effect of holding phone conversations while driving.	
<b>Help Received</b> Mr. Bardo Escobedo designed the Wii wheel mount, my Mother and brother helped recruiting subjects, and my Father helped with statistical analysis.	