



# CALIFORNIA STATE SCIENCE FAIR 2011 PROJECT SUMMARY

<b>Name(s)</b> <b>Sam B. Schoonmaker</b>	<b>Project Number</b> <b>J0326</b>
<b>Project Title</b> <b>The Acceleration of a Skateboard</b>	
<b>Abstract</b> <b>Objectives/Goals</b> I set out to see what weight of a skateboard would complete and accelerate down the track the fastest. My experiment question was: How does weight affect the speed of an object down a certain slope? In starting my experiment, my hypothesis was that the skateboard with the nine-pound weight would go the fastest because it had less friction but still had some weight on it. <b>Methods/Materials</b> First, I had to build a track. I used two eight-foot long plywood boards that are four feet wide. The plywood was framed in two by fours for strength. I then cut six wedges to insure the track was flat and sloped. To run my experiment, I used a five-pound skateboard and put different numbers of two-pound lead diving weights on it to vary the weight. In total I had four two pound weights and I ran my trials adding an additional weight each time. To measure how fast the skateboard went in between the checkpoints and the end, I videotaped it with a video camera. I would count how many frames were in between one checkpoint and another and then I would divide it by thirty because I knew there were 30 frames per second. <b>Results</b> The five-pound skateboard took 9.116 seconds to complete the track, which was the longest time of the five trials. I added one two pound weight on the skateboard and it took 8.466 seconds to complete the track. The skateboard with 4 pounds on it took 8.27 seconds to complete the track. Next, the skateboard with 6 pounds on it took 8.114 seconds to complete the track, which was a little bit less than the skateboard with 4 pounds on it. Finally, the skateboard had eight pounds on it took 7.89 seconds to complete the track, which was the shortest amount of time to complete the track of all five varying weights. <b>Conclusions/Discussion</b> Originally I hypothesized that the nine-pound skateboard would go the fastest because it had less friction and still had some gravity pushing down on it. My hypothesis was wrong because the thirteen-pound skateboard actually completed the track the fastest. The reason why the heavier skateboard went the fastest was because it weighed more so it didn't feel the friction as much because of the gravity pushing down on it. The lighter skateboards felt the friction more because they did not weigh as much, even though they still had gravity pushing down on them.	
<b>Summary Statement</b> My project is about how the weight of an object affects how fast it accelerates down a hill.	
<b>Help Received</b> Mr. Ozeni: 8th grade Science Teacher at Correia Middle School. Jon Schoonmaker: My dad. Tracy Moore: My mom	