



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Jennifer A. Gomberg	Project Number 34428
Project Title Does the Height and Weight of an Ice Skater Affect the Speed of His/Her Spin?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of this experiment was to see whether the height, weight, or body mass index of an ice skater affects the speed of his/her spins.</p> <p>Methods/Materials Twenty-five ice skaters who can successfully complete a one foot spin voluntarily consented to participate. Before the first test, the participants were measured and weighed with measuring tape and a scale. The participants executed seven spins once a week for six weeks while being measured with a radar gun in kilometers per hour. An adult helper videotaped the participants for a future reference.</p> <p>Results There was a slight effect on the height, weight, and body mass index of an ice skater's spin, but not enough to show the hypothesis is correct. After creating the overall graphs, the trend line was the exact opposite of the hypothesis, but when separated into smaller categories, the trend line was pointing slightly downwards, showing that taller, heavier, and larger body mass indexes have slightly slower spins. The different body types, however, had similar qualities to their spin.</p> <p>Conclusions/Discussion The results of the experiment showed that the hypothesis was wrong, as the trend line in the graphs pointed only slightly downward at a small percentage when the graphs were created into smaller categories. Even though the body composition did not affect the speed of the spin, it seemed to affect the certain qualities of the spin. Professional athletes need to focus on their body composition as it may affect the qualities, not quantities, of their performance.</p>	
Summary Statement Twenty-five ice skaters with various body compositions were selected to see if the height, weight, and body mass index had an effect on the speed of an ice skaters spin.	
Help Received Mother helped taking notes and video during trials; Father edited report; Elaine Gillum edited notebook and took photos; Jami Macleod answered questions on the physics of ice skating; Wendy Smith allowed the experiment to be done at the San Diego Ice Arena.	