



**CALIFORNIA SCIENCE & ENGINEERING FAIR  
2018 PROJECT SUMMARY**

<b>Name(s)</b> <b>Danielle H. Ito</b>	<b>Project Number</b>  38731
<b>Project Title</b> <b>How High Can You Tumble?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this study is to test how tumbling backward or forward affects a gymnast's tumbling height (the distance between their back and the floor while flipping). <b>Methods/Materials</b> Gymnastics floor, tumble track, camera, 8 gymnasts, 2 large gymnastics blocks, 1 tape measure, 1 roll of masking tape, and a computer. Measured the tumbling height of 8 gymnasts when tumbling backward or forward. <b>Results</b> Eight gymnasts tumbled backward and forward 3 times each on two different surfaces. Repeated trials were run to determine whether a gymnast receives a higher tumbling height when tumbling backward or forward. When tumbling backward, all of the gymnasts tumbled higher. <b>Conclusions/Discussion</b> Through my experiment, I learned that a gymnast will tumble higher when tumbling backward suppose to forward due to the amount of potential energy.	
<b>Summary Statement</b> The effect of tumbling backward or forward on a gymnast's tumbling height.	
<b>Help Received</b> Deep gratitude to my Aunt Melissa, an accomplished physicist, who took the time to help me understand the various physics laws that explained the results of my study, however, I completed the experiment independently.	