# CALIFORNIA SCIENCE & ENGINEERING FAIR
## 2018 PROJECT SUMMARY

**Name(s)**
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**Project Number**
**J1313**

**Project Title**
## How High Can You Tumble?

**Abstract**

**Objectives/Goals**
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).

**Methods/Materials**
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.

**Results**
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.

**Conclusions/Discussion**
Through my experiment, I learned that a gymnast will tumble higher when tumbling backward suppose to forward due to the amount of potential energy.

**Summary Statement**
The effect of tumbling backward or forward on a gymnast's tumbling height.

**Help Received**
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.