# CALIFORNIA SCIENCE & ENGINEERING FAIR
# 2018 PROJECT SUMMARY

**Name(s)**
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**Project Number**
38138

**Project Title**
## Reward vs. Punishment: Which Is a More Effective Motivator?

**Abstract**

**Objectives/Goals**
The purpose of my science fair project was to find the most effective short-term motivator between punishment and reward. This is an important subject as motivation is used daily to convince oneself and others to complete tasks.

**Methods/Materials**
Three groups of twenty people with Informed Consent were tested: all groups were asked to cut as many one by one inch paper squares in one minute. Then, each group repeated the task with a different motivator to improve: one used a disgusting smoothie as punishment (just for show- nobody drank it) if they didn't, one had three candies as reward if they did, and the control group did not receive anything.

**Results**
I measured how much each subject improved. The data sets had outliers, so median was used as the data summary instead of average. The punishment test group had the highest median improvement, 9.5 squares, and highest median percentage increase. In comparison, the reward and control groups' stats were 8.5 squares and 50%, and 8 squares and 35.4%, respectively.

**Conclusions/Discussion**
While any motivator made a significant difference in how well subjects performed, there was only a small difference between punishment and reward, leaning in the former's favor. This may affect how one decides to motivate either themselves or others: they can use the small boost that punishment gives or apply the more ethical option, reward.

**Summary Statement**
By analyzing subjects' improvement between two rounds of cutting out paper squares, I found that punishment is a more effective motivator than reward.

**Help Received**
I designed and performed the experiment myself. Zoe Liberman and Vanessa Woods at the USCB Psychology Department taught me about motivation and its real world applications. Deirdre Li, Jen Checchio, and Juri Holmes at Foothill Elementary School let me use their classes as subjects.