



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

Name(s) Elias B. Gilbert	Project Number S0410
Project Title Gender's Role in Collaboration on a Logic Puzzle	
Abstract Objectives/Goals The objective of this study was to understand the factors that influence how effective a group is in performing a task. The main question in this study was about how the gender composition of a group affects group success and how people perceive their contributions to the group. Secondly, I studied how the amount that different people talk affects how well their group works together. Methods/Materials 42 students from the Santa Cruz High School Band, ages 14 to 18, each with signed informed consent forms, were randomly assigned into 14 groups of three to participate in the study. Students answered a survey about working in groups. Each group completed a band-related math puzzle challenge. I measured how often each person spoke, how many mistakes the group made when they did the puzzle and how long it took them to complete the task. Results The gender composition of a group had an effect on the effectiveness of the group. Groups with 2 girls and 1 boy were the most effective, groups with 1 girl and 2 boys were the least effective, and gender-pure groups performed about equally. Groups with a more even distribution of talking time were more effective. Males rated their success higher than females, while both genders were good at evaluating the their own contributions, those of others and the effectiveness of their groups. Conclusions/Discussion I found that the gender composition of a group and the amount that people talk are both factors in determining group effectiveness. Though my sample represents a very specific group of people, these results may apply to working groups of young adults in general, adding interesting knowledge to the important and developing field of social dynamics and team effectiveness. In the future, these types of results can be used to create more effective groups in education or in the workplace, and create strategies for integrating more women into working groups while maintaining or increasing their effectiveness.	
Summary Statement I found that how well a group solves a problem depends on its gender composition and the way people communicate.	
Help Received Prof. Rebecca London of the University of California Santa Cruz advised this project, helping with best practices for research and to clarify my ideas. Prof. Barbara Rogoff of UCSC also discussed my results with me. Christina Latham, the band teacher at Santa Cruz High School, allowed me to take students out	