



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

Name(s) Ryan Gao	Project Number 36078
Project Title What We Can't See: Detection and Identification of Microorganisms in a School Environment	
Abstract Objectives/Goals The purpose and goal of this project is to find and compare number of colonies of microorganisms on the surface of certain items/places in a school environment, which were: a door handle, a water fountain, a light switch, urinal floor tiles or the sole of my shoe. To accomplish this objective, I conducted experiments in which I collected microorganisms from the various surfaces, grew them into numerous colonies, compared the results and identified what they were. Methods/Materials I used sterilized swabs to collect the microorganisms from each surface. Next I transferred the microorganisms onto sterilized petri-dishes filled with standard method agar. Then the microorganisms were grown for 26 hours in an incubator and then observed under a plate counter magnifier where the colonies are counted. Results The final analysis is that the sole of my shoe has the most colonies of microorganisms. The following is the rank from the most to the least number of colonies of microorganisms: the sole of my shoe, urinal floor tiles, a light switch, a water fountain and a door handle. Conclusions/Discussion Repeated trials show that the sole of my shoe was the most colonies of microorganisms out of the five items/places. In conclusion, my hypothesis was correct.	
Summary Statement I detected and tested for microorganism growth on the items/places that most students come in contact with on a daily basis in our school.	
Help Received I swabbed, collected and examined the microorganisms myself. I got helped in having the sterilized materials ready and having the microorganisms grown from the Alpha Analytical Laboratories, Inc.. My Science teacher reviewed my project and my parents advised my project.	