



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

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Project Title Terraforming Mars! Seed Germination under Mars-Like Conditions	
Abstract Objectives/Goals To find which seeds (if any) are more successful in germinating under Mars-like conditions (low atmospheric pressure, freezing temperatures, and in carbon dioxide). Methods/Materials To germinate the seeds we placed 10 seeds (of each type: corn, beans, lettuce, and alfalfa) on a moist paper towel and placed it in a plastic sandwich bag (and then labeled the bag). We placed a set of 4 seed bags (1 each of corn, beans, lettuce, and alfalfa) in the 4 different Mars-like conditions (Carbon Dioxide, low atmospheric pressure, freezing temperatures, and a control). We observed the seeds on a daily basis over the course of one week and recorded our observations. Results Lettuce seeds were the highest germinating in all the environments with Alfalfa a close second. The freezing temperature group did not germinate any seeds. Conclusions/Discussion Our hypotheses were incorrect, the beans did not germinate the best, rather the lettuce did. And of the three Mars-likes environments that we tested, the freezing temperatures appear to be the biggest hurdle facing terraforming.	
Summary Statement Germinating Seeds under Mars-like conditions with the intent to Terraform the red planet.	
Help Received Mother helped type the report, father and uncle provided us with vacuum chamber and carbon dioxide canister.	