



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Cheng-Hsin V. Shu	Project Number J1923
Project Title The Defense Against Ants II: Why Are Ants Afraid of Baby Powder?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals How can people keep ants from entering homes by using natural and nontoxic materials without harming human beings, the environment, and ants at the same time? In my last project, I had found out that baby powder could effectively repel household ants. My objective of this project is to find out what ingredient(s), the fragrance or talc, of baby powder, affected the ant's three primary senses: sight, smell and touch. With this result, people can now use more effective, economical, and safer natural materials than baby powder, which was not originally designed as an ant repellent to deter ants, without harming people, the environment, and ants. I hypothesized that the fragrance of the baby powder was the major ingredient that repelled the ants.</p> <p>Methods/Materials 2 plastic boxes, 4 glass bottles-wide neck, 6, 6 in. clear plastic tubes, 4 glass bottles-narrow neck, Air Paper, Jolly Ranchers, Scale, Talc, Rubber Band, Baby powder, Sand Paper, Baby powder (one year old sample), Ants, Timer, Small container, Tape, Gloves, Black cover, Mask. Methods: Construct the mini maze and also prepare the variables and controls needed. First the testing of the control setup had to be done, and then testing for each of the variables was conducted. For each microcosm, the variable was altered accordingly. There were a total of 20 ants used for each experiment, and each experiment was conducted 3 times to ensure accuracy of results. Each experiment lasted 30 minutes, to ensure proper observation of the ant's behavior.</p> <p>Results There are 3 findings: 1) Talc, an ingredient of baby powder, was the major material that significantly affect ant's sense of touch. Surprisingly, even the one-year old sample of baby powder with diluted fragrance could affect ants effectively. It showed that the effectiveness and durability of talc to repel ants. 2) The fragrance inside the baby powder also had some effect on the ant's smell sense, but the effect was less desirable compared to the talc. 3) The color of baby powder didn't affect ant's sight sense.</p> <p>Conclusions/Discussion My solution will help millions of people effectively handle ant problems, while enabling our environment and bodies to remain toxic free. Talc serves as an excellent ant repellent and it may be cost effective and practical to introduce talc itself rather than baby powder as a natural ant repellent. Therefore, making the environment healthy for all future generations.</p>	
Summary Statement My objective of this project is to find out what ingredient(s), the fragrance or talc, of baby powder, affected the ant's three primary senses: sight, smell and touch.	
Help Received Dad drove me to the store to pick up the materials needed for the project. Sylvia and Sam proofread and edited my papers. Mrs. Williams helped me solve complications within the project. And My mom who assisted me in assembling the board. She was also the one who helped come up with the project idea.	