Rocket Ready Go!

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What in the world would baking soda and vinegar have to do with a rocket ship? Let me explain! I have always had a love for rockets. So through my natural evolution of thought I somehow landed on the question of, how does the ratio of baking soda to vinegar affect the launch height of a film canister once the two products combine. The measured results were the launch height, the velocity, and the acceleration of each film canister. These measurement were taken and calculated with the help of a video camera. The hypothesis for this experiment stated that when you combine sodium bicarbonate with vinegar a 1:2 ratio should produce the highest launch. After performing the experiment and collecting all of my data my hypothesis was proven incorrect.The evidence from my research of the chemical formula seemed as though a one to two ratio would give me the highest lunch. What I did not take into consideration was the amount of space that the vinegar was going to take up, as the amount of it increased throughout the experiment. Because the vinegar took up more and more space in each of the trials, the trials that had more vinegar in them had less room for the carbon dioxide which caused the canister to launch quicker and created a higher launch because there was more pressure in the film canister. It wasn't until after the experiment that I realized that this was Boyle's Law causing this unexpected trend in data.