



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

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Project Title Got Fizz? What Factors Affect Chemical Reaction Rate?	
Abstract	
Objectives/Goals My objective was to learn how temperature, concentration, and particle size affect the chemical reaction rate of Alka-Seltzer and water.	
Methods/Materials Bayer Alka-Seltzer was added to water and the reaction was timed. To see how temperature affected the chemical reaction rate, one whole tablet of Alka-Seltzer was placed in 100 mls of water at various temperatures (6, 25, 50, 75, and 100 ^o C). To see how particle size affected the rate, one tablet (either whole, crushed into large particles, small particles, and powder) was placed in 100 mls of water at 16 ^o C. To see how concentration affected the rate, one whole tablet was placed into various volumes of water (25, 50, 100, 200, and 400 mls). Three trials were done for each category.	
Results The higher the temperature, the smaller the particle size, and the lower the concentration, the faster the chemical reaction.	
Conclusions/Discussion The factors temperature, concentration, and particle size altered the chemical reaction rate of Alka-Seltzer and water. The higher the temperature, the faster the reaction because the molecules move around faster and therefore there are more collisions between the reactants. The smaller the particle size, the faster the reaction because there is more surface area for the reactants to collide with each other. It was expected that the higher the concentration the faster the reaction would occur, but the results showed that the higher the concentration the slower the reaction.	
Summary Statement The factors temperature, particle size, and concentration were tested and found to all affect the chemical reaction rate of Alka-Seltzer and water.	
Help Received My parents helped edit my written work, print the pictures, and format the graphs.	