



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Charlie J. Hughes	Project Number J1111
Project Title Which Sense Will Help a Rat Finish a Maze the Quickest?	
Abstract Objectives/Goals The goal of my project is to test which sense, of smell, vision, or hearing, will help a rat get through a maze the fastest. Methods/Materials My materials were nails, cardboard, pegboard, rubber bands, a sheet of clear plastic, #Perfect Choice# rat food, a towel, purple and white duct-tape, and rats. I created my maze by poking the nails up through the holes in the pegboard, stretching two rubber bands between the nails (one at the top, one at the bottom), and sliding a piece of cardboard between the rubber bands. I repeated this until I had created a maze, then set the clear sheet of plastic on the maze. I tested smell by spreading a trail of food on the towel, taking the same trail as the correct trail of the maze, then set the maze onto the towel, so that the trail of food and the correct trail of the maze were lined up. For vision, I taped the correct trail of the maze in the same color as the current rat's food bowl. When I was testing hearing, I laid at the end of the maze and called my rats by name. Results My results were that hearing was the quickest, then vision, then smell. In hearing, the high was three seconds, the low was five hundred-forty seconds, and the average was fifty seconds. In vision, the high was six seconds, the low was four hundred-fifteen seconds, and the average was fifty-one seconds. In smell, the high was seven seconds, the low was over one thousand seconds, and the average was sixty-seven seconds. In my control, the high was seventeen seconds, the low was one hundred-eighty nine seconds, and the average was seventy-five and seventy-five hundredths of a second. Conclusions/Discussion I think that the reason smell was last even though it is their strongest sense is because they were not smart enough to relate the smell of the food to the trail it took, and follow it. I think they searched for the food instead. I believe that vision is second because rats only see in blues, greens, and ultra-violets, and do not have very clear vision. However, I think that they could still see a color change between the brown pegboard and the white/purple tape that I used on the correct trail of the maze. I deduce that hearing is the quickest sense to help my rats get through the maze because they are very used to my voice and used to me calling them by name. I usually call them by name before I bring them out of their cages to play, or else before I feed them, so they come in search of my voice.	
Summary Statement I am testing to see which sense, of smell, vision, or hearing, will help a rat finish a maze the quickest.	
Help Received Teacher helped edit papers and correct format.	