



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Hannah R. Van Winkle	Project Number J1925
Project Title A Zoological Rat Maze: Which Food on Which Surface?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective of my project was to find out which food's scent trail on a certain surface would cause a rat to follow it through a maze quicker than the scent trails of all the other foods I used. I also wanted to find out if spreading bedding over the trail would affect a rat's following it.</p> <p>Methods/Materials The materials I used were 4 foods, building materials, and 2 rats. I used the foods to make the scent trails by rubbing them on the maze's base along the selected route to the maze's end. The types of mazes I made were a cardboard maze without bedding on its bottom, a cardboard maze with bedding, a wood maze without bedding, and a wood maze with bedding. I made 16 mazes so that the rats would not memorize them. I used the cardboard to make eight of the mazes' bases and to make the walls of all sixteen mazes. I used the wood to make eight of the mazes' bases. The hot glue and hot glue gun were used to glue the wall to the mazes' bases. I used the bedding to cover the entire bases of eight of the mazes, four made out of cardboard and four out of wood. The mesh wire was used to cover the mazes so that the rats could not get out of them. I used 2 rats named Dixie, a blue rat, and Roxy, an albino rat. My experimental design was the way I had each of the rats go through the mazes. Over a period of days, I ran each of my rats through all sixteen of the mazes. I did three trials per maze with each rat, with a total of 96 trials all together. I did three trials in each maze to show just how fast my rats would memorize the mazes.</p> <p>Results Through doing this project, I learned that the rats followed the scent trail of the cheese on the wood quicker than the other foods and the bedding did not affect the rat's sense of smell. I also found out that rats memorize mazes quickly. I found out exactly what I wanted to find out in my objective.</p> <p>Conclusions/Discussion My results enabled me to reach my objective because they taught me all that I wanted to learn through doing my project. They broadened the knowledge of zoology by showing that rats have a good memory span and that rats pick up smells on harder surfaces better than softer or porous surfaces.</p>	
Summary Statement My project is about the fact that rats use their sense of smell to find food, and I wanted to test how well they follow food trails.	
Help Received My parents helped me with my project through my dad buying the supplies needed for my project, and my mom helping me to type my report and with my display board.	