



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

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Project Title Can a Hamster be Guided through a Maze by a Specific Material that Indicates the Correct Path?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to learn if hamsters can be guided through a maze by a specific material that indicates the correct path.</p> <p>Methods/Materials I bought 4 hamsters, 4 cages and hamster supplies. I designed 5 mazes and my Dad and I built them out of wood. The design of the first maze was easy, but each maze after increased in difficulty for the hamsters. I layed yellow felt on the correct path and sandpaper on the wrong path. I thought it would be fun to call the yellow felt the "yellow brick road." I got this idea from the movie, "The Wizard of Oz." Just like the movie the felt leads to Emerald City. I put a picture of Emerald City at the end of the maze above the hamster treats. I made a customized chart to keep track of how many times the hamsters stepped off the felt and how long it took to complete the maze. We ran the hamsters through maze one 24 times. The purpose of maze 1 was to get the hamsters used to the idea of associating the felt as the correct path leading to the treat. Next, each hamster was run through maze 2, then maze 3 and then maze 4. This process repeated until the hamsters had run through each maze 7 times. Lastly, for maze 5, I tricked the hamsters by switching the materials around and laying the sandpaper on the correct path and the felt on the wrong path. I only ran the hamsters through this maze once. This was the real test to see if the hamsters knew to stay on the felt.</p> <p>Results I noticed that the personality of the hamster seemed to influence how they behaved and performed in the mazes. In maze 1, there was a decreasing trend in times and errors for Fred, Rhino, and Sparky, although Sparky did take a little longer to understand the concept. Most of Edward's times were very high. People might think he doesn't understand the concept, but he does show a decreasing trend in errors which shows that he does get it. In mazes 2,3, and 4 the hamsters did well. The real test was maze 5 where I tricked the hamsters by laying down the sandpaper on the correct path and the felt on the wrong path. Would the hamsters know to stay on the felt? The results were that 3/4 of the hamsters stayed on the felt.</p> <p>Conclusions/Discussion My results did support my objective and hypothesis. Hamsters are smart and can learn that a certain material will lead to a treat.</p>	
Summary Statement Hamsters can learn that when presented with 2 different kinds of materials, only one will lead to the treats.	
Help Received Katherine Wentworth, veterinarian, signed vertebrate certification form & suggested a control maze. Monsa, PetSmart employee/hamster expert, talked about hamster care and supplies. My Dad helped me with the mazes and helped me create the graphs on the computer. My Mom bought the all materials, and	