



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Kira S.E. Ghandhi	Project Number J1305
Project Title The Frog with the Fear of Water	
Objectives/Goals The purpose of this project is to see how often a frog can make it across a particular pond without getting wet.	
Abstract I used a digital frog and a digital pond because I did not have a frog to use (or a pond) and I could not make a frog behave like that unless he/she wanted to. I used the percent of the pond filled by lily pads as the independent variable, assuming that each of the lily pads are the same size. I measured the pond in lily pads (I used a 50 by 50 grid each time); the size of the lily pads does not matter to the results of my experiment. The first thing that I did was set up my computer so that it would make a virtual lily pad-covered pond by having the computer randomly place green squares and white squares in the pond. I described the lily pad coverage of the pond as a percentage from 5% to 100% by increments of 5%. I generated results for each lily pad concentration twenty times.	
Methods/Materials I used a digital frog and a digital pond because I did not have a frog to use (or a pond) and I could not make a frog behave like that unless he/she wanted to. I used the percent of the pond filled by lily pads as the independent variable, assuming that each of the lily pads are the same size. I measured the pond in lily pads (I used a 50 by 50 grid each time); the size of the lily pads does not matter to the results of my experiment. The first thing that I did was set up my computer so that it would make a virtual lily pad-covered pond by having the computer randomly place green squares and white squares in the pond. I described the lily pad coverage of the pond as a percentage from 5% to 100% by increments of 5%. I generated results for each lily pad concentration twenty times.	
Results The first time the frog can make it across the pond is when 35% of the pond is covered by lily pads. After 50% of the pond was covered all of the tests showed that the frog could get across every single time (100%). There is a dramatic change after 35% of the pond is covered, as shown in my graph. I could take my work further to see if the size of the pond has any effect on the probability of the frog getting across.	
Summary Statement My project studies the connections of randomly placed objects to each other at different density levels.	
Help Received Mother and father helped with project idea, father taught some Excel tricks to set up the experiment.	