CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY

Name(s)
Gian E. Sonza

Project Number
J0534

Project Title
Colors to Dye For!

Abstract

Objectives/Goals
To separate and identify the dyes in Skittles# using paper chromatography.

Methods/Materials
100 sheets of chromatography paper; One skein of pure virgin wool, unbleached; 25 square feet of aluminum foil; One set (four colors, red, yellow, blue, green) of food coloring (0.3 ounces each); 500 mL of household ammonia; 475 mL of distilled white vinegar; Skittles(tm); Scissors; Stapler; Five 100 mL beakers; Five 400 mL beakers; Five test tubes (15 x 200 mm); One Ring stand; Five test tube clamps; One stirring rod; Five evaporating dishes (75 mL); One gallon of distilled water; Camera; Safety goggles; Safety gloves; One safety lab coat; Writing Implement such as a pencil; Metric Ruler; Computer.

Conclusions/Discussion
After performing this science project a number of times, I determined that my hypothesis was correct; the primary Skittle# colors, (Red and Yellow) only had one dye, while the secondary Skittle# colors, (Green, Purple, and Orange) had more than one dye. This is because secondary colors are made up by using a combination of the primary colors, thus requiring a number of different dyes. In contrast, the primary colors are made up exclusively of one color dye.

Due to the boiling process necessary to Candy Chromatography, I determined that it would not be possible to use chocolate based candies, such as M&M#s#. Although some recommend using M&M#s# in this experiment, the chocolate would melt and the color coating would be absorbed, making it impossible to perform such an experiment, in my estimation.

Summary Statement
To separate and identify the dyes in Skittles# using paper chromatography.

Help Received
Sister helped type report; Geeta Srivastava helped with experiment.