



California Science Center  
**CALIFORNIA STATE SCIENCE FAIR**  
**2001 PROJECT SUMMARY**

<b>Your Name</b> (List all student names if multiple authors.) <b>Julia C. Fong</b>	<b>Science Fair Use Only</b>  <h1 style="margin: 0;">J1010</h1>
<b>Project Title</b> (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) <b>Paper Chromatography</b>	<b>Division</b> <u>X</u> <b>Junior (6-8)</b> _ <b>Senior (9-12)</b>
<b>Preferred Category</b> (See page 5 for descriptions.) <b>4 - Chemistry</b>	
<b>Abstract</b> (Include Objective, Methods, Results, Conclusion. See samples on page 14.) Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.	
<p><b>Objective:</b> My objective was to use paper chromatography to determine which colored dyes are found in powdered drink mixes and markers, as well as which dyes are found most often and the retardation factor of each color. My hypothesis was that the markers and drink mixes would separate into their subtractive primary colors in different amounts.</p> <p><b>Materials and Methods:</b> I made a cylinder (out of coffee filter) with a spot of marker or powdered drink mix 2 cm. from the bottom. I put it in a clear plastic cup which had a centimeter of rubbing alcohol, the solvent, in it and secured the top with plastic wrap and a rubber band.</p> <p><b>Results:</b> The colored spots separated into various dyes, not necessarily their primary colors. The pigments found most often were red, blue, and yellow. The retardation factor (distance spot traveled/distance solvent traveled) for darker colors, especially black and brown, were higher.</p> <p><b>Conclusion:</b> My conclusion is that my hypothesis is incorrect--the drink mixes and markers, such as the purple dyes, did not separate into their subtractive primary colors.</p>	
<b>Summary Statement</b> (In one sentence, state what your project is about.) My project illustrates one method of paper chromatography that separates dyes in powdered drink mixes and markers.	
<b>Help Received in Doing Project</b> (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4. Parents helped me get materials; Father helped me make header itself (not the lettering).	