



**CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY**

Name(s) Camille M. Shanahan	Project Number J1023
Project Title Seeing Double in Focus	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals How are identical twins different and similar? I think that I will discover that my sisters will not have the same blood samples and dental X-rays. I think they will have a few similar dreams, and will have some of the same likes and dislikes. I also think they might have similar hair strands and fingerprints</p> <p>Methods/Materials Materials: Cell samples; Hair; Fingerprints; Dental X-rays. Methods: Create a survey; Make a graph of the survey results; Analyze data and form a conclusion. Results: I found out that their hair was almost alike? Dental X-rays showed that their jaws were very similar, but their bites and structure were slightly different. We found they both had the same blood type, O positive. I found out that identical twins fingerprints are different. Fingerprints come from the growth of the twin in the mother's womb. Finger indentations are not all about genetic characteristics or DNA. The differences of the fingerprint comes from the mother's nutrition, blood pressure, position of the baby in the womb and the growth rate of the baby's first three months. But, you will also find similar patterns and whorls in the fingerprints of the twins. I wanted to see what these differences and similarities would look like so I did a fingerprint sample of my sisters and found out that they were not completely alike. I did the test on both of them and then looked at the prints under a magnifying glass.</p> <p>Results They were practically exactly the same except some of the whorls were placed differently. After getting my surveys back from the 14 sets of identical twins, I tallied up the answers. Their sex was boys - 2 to girls - 12. Most everything was half and half but some of the results were a lot different than the others. The surveys were gathered from Rio Del Mar, Aptos Jr. High, Aptos High, North Monterey County High School, and Anzar High School. My graph on the surveys shows most of the important questions.</p> <p>Conclusions/Discussion To me the results meant that twins do have different thoughts in most things, but in some they do think the same. For example, my sisters survey showed that on the distinct features question Lauren answered that they did have distinct features, but Paige circled that they didn't. I found out that twins do have some similarities, but also have their own unique differences. If I were to investigate further, I would get DNA samples and check bone structure.</p>	
Summary Statement How are identical twins different and similar?	
Help Received Bob Schellentrager, my dentist Steve McCarthy, head pathologist at Dominican Hospital David Richlin, hair salon owner	