



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Davina J. Zamanzadeh	Project Number J0916
Project Title Determining the Data Track Spacing on CDs and DVDs Using a Red and Green Laser Pointer	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The conduction of this experiment is to prove that the data track spacing of a DVD is less than the data track spacing on a CD. Using this mark, researchers can compare the advancement rate in digital technology among other periods of time in history. Scientists and researchers will be able to compare the DVD to the CD with more information, and on a deeper level.</p> <p>Methods/Materials First a red laser pointer was used to measure the data track spacing on all of the CDs. Then a green laser pointer was used to measure the data track spacing on all of the CDs. A red laser pointer was used to measure the data track spacing on all of the DVDs. After that, a green laser pointer was used to measure the data track spacing on all of the DVDs. Finally all of the data track spacings were averaged and a result was concluded.</p> <p>Results The DVDs' data track spacing ended up to be smaller than the CDs' data track spacing. The average data track spacing on the DVDs was 766 nm, and the average data track spacing on the CDs was 1532 nm. This makes the data track spacing of the DVD exactly half of the data track spacing of the CDs.</p> <p>Conclusions/Discussion The average data track spacing on the DVDs was half the number of the average data track spacing on the CDs, thereby showing the hypothesis was backed by the data. The experiment will prove that the data track spacing of a CD is greater than the data track spacing of a DVD. If using a green and red laser pointer to measure the data track spacing on CDs and DVDs, then the data will prove that DVDs have smaller spacing than CDs, because DVDs withhold a greater amount of information than CDs. In future testing, it would be recommended to realize how extremely difficult this project is and be able to take it head on, so it can be done neatly and carefully. Other follow up experiments could see if drawing with a sharpie over the CD/DVD will affect how the laser reads it.</p>	
Summary Statement The conduction of this experiment is to prove that the data track spacing of a DVD is less than the data track spacing on a CD, which would be proven by measuring the data track spacing on the CD and DVD using a red and green laser pointer.	
Help Received Father helped understand trigonometry symbols.	