



# CALIFORNIA SCIENCE & ENGINEERING FAIR 2018 PROJECT SUMMARY

<b>Name(s)</b> <b>Fiel Angelo L. Gamad</b>	<b>Project Number</b> <b>J1205</b>
<b>Project Title</b> <b>Comparison of Air Quality in Different Clovis Schools Based on the Level of Particulate Air Pollutants</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> There are two objectives: First objective is to find out which school has the highest level of pollution based on the number of particulate air pollutants and analyze data by proximity to possible air pollutant sources. Second objective is to determine which school area, hallway, parking lot, or field, has the highest level of particulate air pollutant.</p> <p><b>Methods/Materials</b> Materials: white cardboard, black permanent marker, magnifying lens, strings, Vaseline, ruler, calculator. Methods: 1. Four Clovis West schools were randomly selected. Geographical description, such as proximity to busy roads, industrial facilities, commercial establishments, construction sites were noted for each school. 2) School areas namely, parking lot, field and hallways served as collection sites. 3) 5x5 inches white cardboards were used as sample collection cards. 4) Vaseline was applied to each card before hanging it at approximately 4-5 ft high. 5) Replaced with new cards after 24 hours. 6) Particles stuck on the collection grid were counted using magnifying lens. 7) Process repeated for 10 days. 8) Tabulated and analyzed data.</p> <p><b>Results</b> Results showed significant difference in the level of air pollution in four schools. School nearest to industrial establishments, commercial areas and busy roads, had the highest daily average particulate air pollutants (405). School near construction site had the second highest air particulates (392). Two schools mainly surrounded by residential areas, had the least air particulates (361) and (308) respectively. Results also showed striking difference in air particulates for each collection area. Parking areas had the highest total number of air particulates (529), followed by hallways (495) and the least polluted was the field (442).</p> <p><b>Conclusions/Discussion</b> This project showed that although these schools are located in the same school district, there is a remarkable difference in the air quality of each school based on the level of air particulate pollutants. The level of air particulates is directly related to the proximity of schools to major sources of particulate pollutants. There was also a remarkable difference in the air quality among different collection areas, the parking being the most polluted compared to the hallways and fields. These results were concerning to students realizing that they were being exposed to air particulate pollution which can cause potential health problems.</p>	
<b>Summary Statement</b> This project demonstrated significant difference in the air quality among different Clovis schools, indicating direct association with proximity to major sources of air pollution.	
<b>Help Received</b> Parents drove me to the Clovis schools for sample collections. Parents also purchased materials and helped in developing photos.	