



California Science Center
CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.) Forrest K. Ohtake	Science Fair Use Only <h1 style="margin: 0;">J0426</h1>
Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9) "Do Gasses Have Weight?"	Division <u>J</u> Junior (6-8) <u>J</u> Senior (9-12)
Preferred Category (See page 5 for descriptions.) 4 - Chemistry	
Abstract (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>Objective: The objective of this project is to determine whether or not different gasses have different weights or weight at all.</p> <p>Materials and Methods: The five gasses I tested were acetylene, argon, carbon dioxide, helium and oxygen. I weighed these gasses by filling each balloon with a different gas. Each balloon was weighed prior to filling it with gas. Once the balloon was filled with gas, it was submerged in a five gallon bucket. The five gallon bucket contained 2 gallons of water. The interior of the bucket was marked with 100 cubic inch markers above the two gallon line. Each 100 cubic inch mark equalled 277 fluid ounces of water. Once the balloon was submerged entirely underwater, I slowly let the gas out until the water level dropped down to the 500 cubic inch mark. Each balloon was then tied, dried off and weighed on a triple beam balance scale. I tested each gas 10 times, to assure accurate results.</p> <p>Results: My results indicated that gasses do have different weights. I found that Carbon Dioxide was the heaviest and that Helium was the lightest. Oxygen is also lighter than Carbon Dioxide by nearly 75%. My project reflected the different molecular weights for each gas. Carbon Dioxide has a molecular weight of 44.0 and Oxygen has a molecular weight of 32.0.</p> <p>Conclusion: This was a very interesting project, which identified that gasses do have weight and weigh differently. It is also a very interesting project because of the fact that something which is invisible has weight. This is a basic project that can be looked into even further by exploring more gasses. I enjoyed learning about the characteristics of the gasses, which are all useful or essential to life on earth.</p>	
Summary Statement (In one sentence, state what your project is about.) My project explores the different weights of five different gasses.	
Help Received in Doing Project (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. Father helped with research and testing. Mother helped with typing up the information	