



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Alexander L. Early	Project Number 22299
Project Title Comparing 4 and 6 Legged Motion	
Abstract Objectives/Goals The Goal of my project was to see the differences between walking with 4 and 6 legs. I compared the results i got to what real animals with 4 and 6 legs are like. This experiment has a lot of controls to it, such as the footsize, total energy of the motors, and robot size Methods/Materials I made a 4 and a 6 legged walker out of legos. Then i got 3 terrain samples and ran the robots across each 2 times. I used a grass mat, a sand pit, and a smooth board. I recorded the times it took for the robots to cross each sample and made notes on what the robots acted like as they crossed. Results I found that my results were very close to the attributes of 4 and 6 animals. The 6 legged had much better balance and turning, and the 4 legged walker was able to move faster since it had less legs to coordinate. Conclusions/Discussion From my results, i now know why animals have as many legs as they do. It also helps me understand how a strange animal will probably behave based on the number of legs it has. This project is idea for further research; it would be interesting to make 2 and 8 legged walkers and to try different changes between the robots, like body size and foot shape.	
Summary Statement Comparing the differences in 4 and 6 legged walking.	
Help Received Internet gave me idea for what robot would look like.	