



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

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| Name(s) Mackenzie Lynn Riney | Project Number J1407 |
| Project Title Is a Horse's Stride Length Affected by Its Own Shoulder Angle or Height? | |
| Abstract Objectives/Goals The objective of the project is to determine if a horse's stride length is affected by its shoulder angle or height. Methods/Materials This experiment included measurements from 28 horses. Each horse was measured for shoulder angle, height, and stride length. The data was collected, stride lengths compared to both height and shoulder angles and put into graphs to determine results. Results The results showed that on average, the horses with the longest strides had the smallest shoulder angles. The horses with the shortest strides had the largest shoulder angles. Smaller shoulder angles give longer strides because if the shoulder angle is smaller, then the bone is more parallel to the ground, allowing the leg to reach farther and making the stride longer. The results show that the height of the horse has nothing to do with the stride length. Conclusions/Discussion The outcome of this project is important to horse trainers, enthusiasts, judges, and riders. Equestrians need to know their horse's body type and style in order to have the best performance and speed. Horse riders hope for the best presentation from their horses when it comes to jumps, agility, or shows. If a horse's stride is short when performing in a show, the score will suffer because long strides are preferred over short ones. Most people would think that a larger horse would have a longer stride. My experiment demonstrates that the shoulder angle, and not the height of a horse, determines its stride length. | |
| Summary Statement This project is to determine if a horse's stride length is affected by its shoulder angle or height. | |
| Help Received Briarwood Riding Stables and Jeremy's Ranch provided horses for the project. | |