CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY

Name(s)
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Project Number
J0318

Project Title
Car Performance

Abstract

Objectives/Goals
The goal of my project is to see whether a shorter or longer wheelbase is more efficient for driving. If cars can turn efficiently, then it will save time and energy.

Methods/Materials
One model LEGO Mindstorms car with an adjustable wheelbase was constructed. The car could be remodeled with wheelbases of 18,22, and 26cm. The car was programmed to run through a pre-made course using a color sensor. Each wheelbase was tested 10 times for maneuverability (timed in seconds) and turn radius (measured in cm). All wheelbases were the same in weight, and ran the same program and course.

Results
The shorter wheelbase had the best maneuverability, and the mid-length wheelbase had the worst maneuverability. The turn radius increased with the wheelbase.

Conclusions/Discussion
My conclusion is that wheelbase does have an effect on car performance and that a shorter wheelbase would result in better maneuverability.

Summary Statement
This project tested whether a car's wheelbase effects its maneuverability.

Help Received
Dr. Tseng provided research information and feedback.