



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

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Project Title Which Gasoline for Your Machine?	
Objectives/Goals We are conducting this experiment in order to find out which brand of gasoline (if any) will give a go-kart more running time. We are going to be testing the regular, unleaded, 87 octane samples of Shell, Chevron, and Arco brands of gasoline. We predict that the three brands will have close to the same running time because they all come from the same refineries. Abstract Methods/Materials In order to test our hypothesis, we used precisely one cup of each brand of gasoline, testing each brand three times, each in a different order, and waiting half an hour between each round of testing. In order to maintain the same speed, we propped the go-kart up onto a wooden beam and accelerated the engine at full-throttle, using a bungee cord. We recorded the time when tank was empty and the engine came to a halt. Between tests, we cleaned the fuel tank using a siphon pump and an absorbant cloth. Results Shell had the longest running time, with an average of 8 minutes and eleven seconds. Chevron came in second with an average running time of 7 minutes and 50 seconds. Arco had the shortest running time, averaging 6 minutes and 51 seconds. Conclusions/Discussion We reject our hypothesis because Shell ran an average of 1 minute and 20 seconds longer than Arco brand gasoline. This is a notable difference between the highest and lowest performing gasolines tested. This may be a result of the additives in more expensive brands of gasoline. If we were to apply this experiment to a gallon or several gallons of gasoline, the results would be even more significant. We conclude that spending a little more on gasoline is worth more driving time in your machine!	
Summary Statement We are conducting this experiment in order to find out which major brand of gasoline will give a go-kart more running time, if any.	
Help Received Father supervised go-kart experimentation. Our supervisor, Mrs. Lorch, guided us through the scientific method. Mother edited written materials.	