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Turn on the Octane

My experiment's purpose was to determine which octane rating would allow an engine to run the longest. The results of this experiment would allow consumers the choice to use the longest lasting fuel in their vehicles. The higher the octane, the higher the price. I hypothesized that the 100-octane fuel would allow the engine to run longer. My dad and I started by removing the blade off our mower. After reviewing OSHA's safety procedures, we started by measuring out 120 mL of fuel. We added the fuel to an empty tank and started the engine. The throttle was secured. I simply observed the engine and kept track of the time. After the engine stopped, I recorded the time, checked the oil levels and repeated the steps after it cooled down. I recorded the amount of time that the engine ran. The data showed that 91 octane ran the longest. The motor ran for an average 12 minutes 55 seconds. The 91 octane ran 12 minutes 19 seconds, and the 85 octane ran for 12 minutes 10 seconds. These seconds seem insignificant, however most people put over 15,000 miles on their vehicles. Once converting my 120 mL to the average amount of fuel needed to travel 15,000 miles. The simple difference of 36 seconds converts to nearly 36 hour difference between the first and second place fuel. In conclusion, transportation companies, commuters, and daily drivers should heed the results of this experiment.