



Steering Towards Efficiency

The racing team is just as important to a car's finish as the driver is. With little to separate competitors over hundreds of laps, teams search for any technological edge that will propel them to Victory Lane. Of special use today is computational fluid dynamics, which is used to predict airflow over a car, both alone and in relation to other cars (for example, when drafting). Engineers also rely on more basic subjects, such as calculus and geometry, to improve their cars. In fact, one racing team engineer said of his calculus and physics teachers, "the classes they taught to this day were the most important classes I've ever taken."¹

Mathematics helps the performance and efficiency of non-NASCAR vehicles, as well. To improve engine performance, data must be collected and processed very rapidly so that control devices can make adjustments to significant quantities such as air/fuel ratios. Innovative sampling techniques make this real-time data collection and processing possible. This makes for lower emissions and improved fuel economy—goals worthy of a checkered flag.

For More Information: *The Physics of NASCAR*, Diandra Leslie-Pelecky, 2008.

¹ "Math and science skills essential to race car maintenance," Morgan Wall, *The Mount Airy News*, June 8, 2008.



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