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*Testing Drafting Over Two Vehicles*

This project is the result of testing drafting over two cars in my homemade wind tunnel. The point of the project was to see how drafting works, and determine which car experiences the greatest reduction in drag. I selected two 1/24 scale Mustang GT 500's as my test cars. Some modifications were necessary to make the two test cars roll easy.

A hair dryer was used to simulate the air flow over the test cars. A string was attached to the car to be measured and across a pulley to a weight on a 500 gram scale. When I turned the hair dryer on, the weight would slightly lift off the scale giving a measurement of the drag force on the test car.

I found that the drag force on a single car throughout my wind tunnel was 7.8 grams. With two cars I found the front car's force of drag was 6.8 grams when separated 122 millimeters from the back of the front car. When the back car was placed 10 mm behind the back of the front car, it dropped all the way to 3.9 grams. That's a drop of ~50% from the single car drag value! In the end, I found that the back car does benefit more in drafting. Since the vacuum behind the car is a much lower force than the frontal drag of air hitting the car initially, the back car doesn't feel frontal drag near as much as the front car.