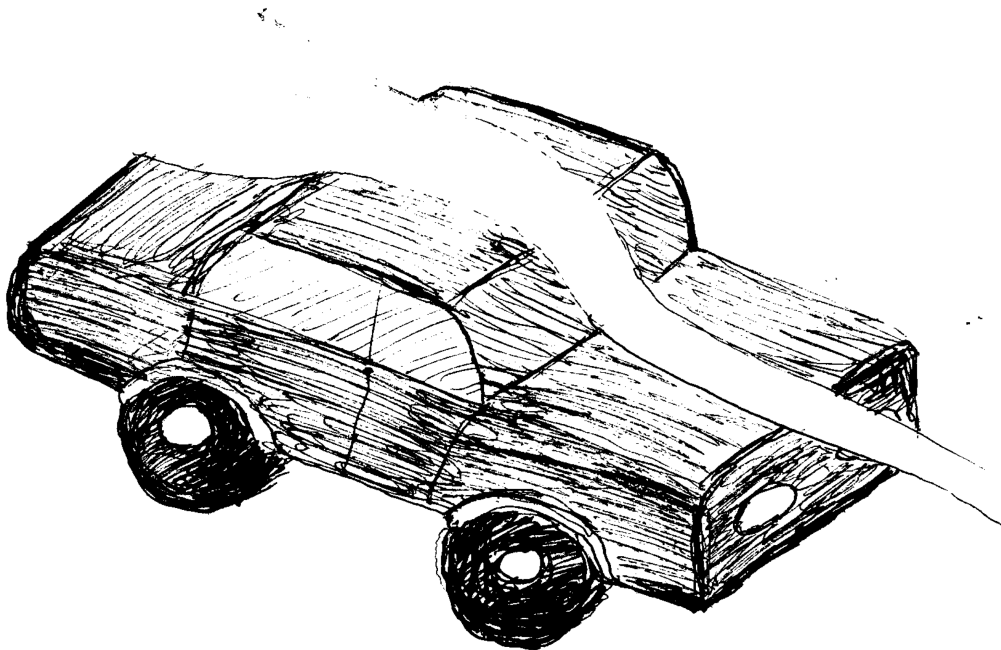


What is a wind tunnel?

Wind tunnels help scientists understand how air passes around vehicles and rockets. By pushing air through a tube with a fan, we can determine how a vehicle would pass through air in real life.

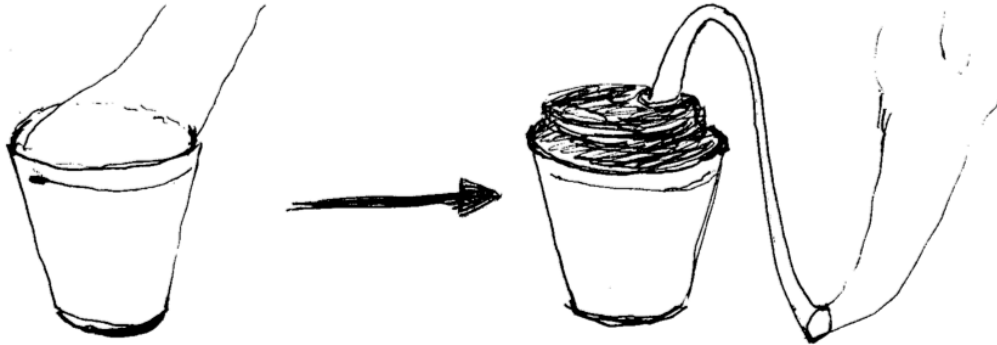
When a body moves through air, it produces a drag force that acts against its motion. When we want to build a vehicle that travels quickly through air, we wish to make this force as small as possible. Using wind tunnels, we can determine how much drag force a body produces at a given speed using streamlines of air.



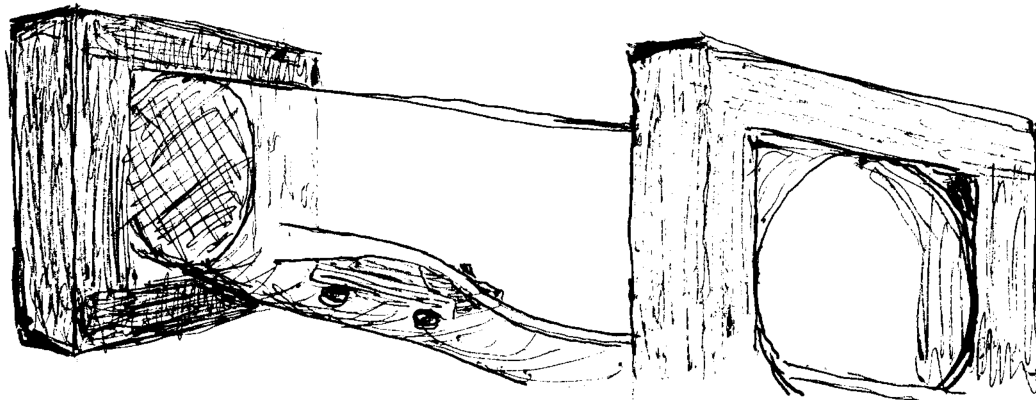
With a smoke stream and a laser sheet, we may use wind tunnels to observe the way in which air flows over a vehicle. Engineers use this data design more aerodynamic vehicles.

How to use the wind tunnel:

1. Turn the fan on with no heat.
2. Place a toy into the center of the wind tunnel.
3. Set up the smoke stream.
 - a. Fill the styrofoam cup with hot water and place a block of dry ice into the cup.
 - b. Be sure to wear gloves when handling the ice.
 - c. Cover the cup with a lid, and use the plastic tube to transport the smoke directly down the tunnel.



4. Watch the smoke stream travel over the car.



5. (Optional) Use the laser and plastic syringe to better see the smoke flow over the toy car.

