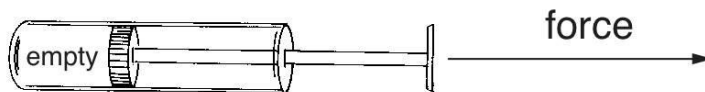


A Classroom Demonstration for *The Life of a Leaf*

From www.press.uchicago.edu/sites/vogel/ Created by Steven Vogel svogel@duke.edu

Pressure Differences (Page 94):

An ordinary hypodermic syringe can be used to show that air inside a cylinder is not being pulled on but simply reduces the pressure difference with the external atmosphere—air inside makes it easier to pull the piston outward. One can feel that it takes a lot more force to pull it outward from a plugged cylinder with nothing inside than one initially a quarter or half filled with air, as below.



But don't use a big glass cylinder—sudden release of the piston is all too easy, and if the cylinder was initially empty, the piston will collide with the cylinder's end and leave the operator with a (bloody) handful of shards of sharp glass.