Pascal's Principle
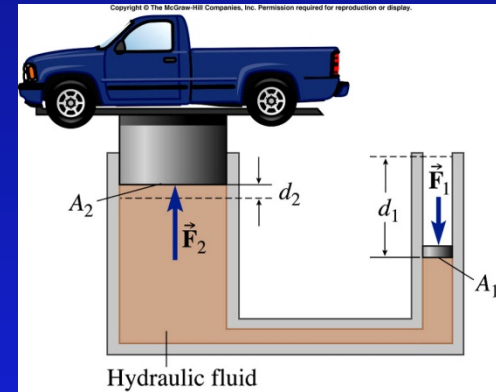
- A change in pressure at any point in a confined fluid is transmitted everywhere in the fluid.

- Hydraulic Lift

  $\Delta P_1 = \Delta P_2$

  $F_1/A_1 = F_2 / A_2$

  $F_1 = F_2 (A_1/A_2)$

  lift demo

Hydraulic fluid

- Compare the work done by F_1 with the work done by F_2

A) $W_1 > W_2$ B) $W_1 = W_2$ C) $W_1 < W_2$

$W = F\ d\ cos\ \theta$

$W_1 = F_1\ d_1$

$\quad = F_2\ (A_1 / A_2)\ d_1$

but: $A_1\ d_1 = V_1 = V_2 = A_2\ d_2$

$= F_2\ V_1 / A_2$

$= F_2\ d_2\ = W_2$