Physics Stuff

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Relationships

(These equations are used when the quantities are constant.)

Work : $W = F \cdot D$

When a force is applied in the same direction as the displacement, work is the product of force times displacement. (If not in the same direction, use only the component of the displacement in the direction of the force: $W = F \cdot D$.)

Pressure : $P = F/A$

Pressure is the the force per unit area (on a surface).

In a liquid, pressure depends on the mass density of the liquid (δ), the gravitational constant (g), and the height of the column of liquid above (h): $P = \delta g h$.

Weight and Mass : $w = mg$

Weight is the "downward" force of gravity on an object. Weight is the product of the mass times the gravitational constant "g" (see below).

Newton's Second Law : $F = ma$ (Force is mass times acceleration.)

Constants

Gravity : $g \approx 9.8 m/sec^2$ or $g \approx 32 ft/sec^2$ on earth

Water Density : $\delta \approx 1000 kg/m^3$ or $g\delta \approx 62.4 lb/ft^3$

Units

	U.S.	S.I.
Force	pounds (lbs.)	Newtons (nt or N)
Length	feet (ft.)	meters (m)
Work	foot-pound (ft-lb.)	joule (= Newton-meter)
Mass	slug	kilograms or grams (kg or g)

Way more stuff is at http://www.calculator.org/properties.html .