Example 1:

Force (Newton, N):
On 50 Gram earth's gravity exerts a force of 0.050 * 9.80665 = 0,49 N

Work (Joule, J):
To lift 50 Gram 3 mm against earth's gravity needs 0.49 * 0.003 = 0,0014 J

Example 2:

Force (Newton, N):
On 750 Gram earth's gravity exerts a force of 0.750 * 9.80665 = 7,35 N

Work (Joule, J):
To lift 750 Gram 0.883 inch = 22,4 mm against earth's gravity needs 7.35 * 0.0224 = 0.16 J

Force, Newton: http://en.wikipedia.org/wiki/Newton_%28unit%29

The newton (symbol: N) is the International System of Units (SI) derived unit of force.

Newton's second law of motion states that F = ma, where F is the force applied, m is the mass of the object receiving the force, and a is the acceleration of the object. The newton is therefore:

$$1\ \mathrm{N} = 1\ \mathrm{kg}\frac{\mathrm{m}}{\mathrm{s}^2}$$

where the following symbols are used for the units:

N: newton
kg: kilogram
m: metre
s: second.

In dimensional analysis:

$$\mathsf{F} = \frac{\mathsf{ML}}{\mathsf{T}^2}$$

where

M: mass
L: length
T: time.

1 N is the force of Earth's gravity on a mass of about 102 g = (1⁄9.81 kg).

On Earth's surface, a mass of 1 kg exerts a force of approximately 9.81 N [down] (or 1.0 kilogram-force; 1 kgf = 9.80665 N by definition). The approximation of 1 kgf corresponding to 10 N (1 decanewton or daN) is sometimes used as a rule of thumb in everyday life and in engineering.

The force of Earth's gravity on (= the weight of) a human being with a mass of 70 kg is approximately 686 N.

The dot product of force and distance is mechanical work. Thus, in SI units, a force of 1 N exerted over a distance of 1 m is 1 N·m of work. The Work-Energy Theorem states that the work done on a body is equal to the change in energy of the body. 1 N·m = 1 J (joule), the SI unit of energy.

It is common to see forces expressed in kilonewtons or kN, where 1 kN = 1,000 N.

Work, Joule: http://en.wikipedia.org/wiki/Joule

The joule, symbol J, is a derived unit of energy, work, or amount of heat in the International System of Units. It is equal to the energy expended (or work done) in applying a force of one newton through a distance of one meter (1 newton meter or N·m), or in passing an electric current of one ampere through a resistance of one ohm for one second. It is named after the English physicist James Prescott Joule (1818–1889).

In terms firstly of base SI units and then in terms of other SI units:

$$\mathrm{J} = \frac{\mathrm{kg} \cdot \mathrm{m}^2}{\mathrm{s}^2} = \mathrm{N} \cdot \mathrm{m} = \mathrm{Pa} \cdot \mathrm{m}^3 = \mathrm{W} \cdot \mathrm{s} = \mathrm{C} \cdot \mathrm{V}$$

where N is the newton, m is the meter, kg is the kilogram, s is the second, Pa is the pascal, W is the watt, C is the coulomb, and V is the volt.

One joule can also be defined as:

- The work required to move an electric charge of one coulomb through an electrical potential difference of one volt, or one "'coulomb volt" (C·V). This relationship can be used to define the volt.

- The work required to produce one watt of power for one second, or one "watt second" (W·s) (compare kilowatt hour). This relationship can be used to define the watt.