Calculate the gravitational force between Earth and the Sun.

In order to calculate the gravitational force between the earth and the sun, we need the mass of the Earth, the mass of the Sun and the distance between the Earth and the Sun.

Mass of the Earth:	$M_E = 6 \times 10^{24}$ kg
Mass of the Sun:	$M_S = 2 \times 10^{30}$ kg
Distance between the Earth and the Sun:	$d = 1.5 \times 10^{11}$ m
Universal Gravitational Constant	$G = 6.67 \times 10^{-11}$ m^3 kg^{-1} s^{-2}

Determine:

Force of attraction between Earth and Sun: F

To find the force of attraction between the Earth and the Sun , use Newton's universal law of gravitation formula :

$$F = GM_EM_S / d^2 \quad \text{---------- (1)}$$

Substituting for G, M_E, M_S and d in (1):

$$F = (6.67 \times 10^{-11} \times 6 \times 10^{24} \times 2 \times 10^{30}) / (1.5 \times 10^{11})^2$$

$$\mathbf{F = 3.6 \times 10^{22}\ N}$$