

Name: _____

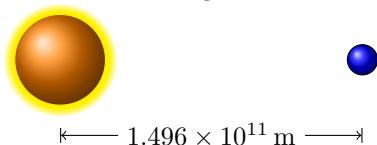
Date: _____

Period: _____

Circular #2

Reference Data	
Mass of Earth	$5.98 \times 10^{24} \text{ kg}$
Mass of Sun	$1.99 \times 10^{30} \text{ kg}$
Radius of Earth	$6.38 \times 10^6 \text{ m}$

1. Find the force of gravity between the Earth and the Sun. The distance between the two is $1.496 \times 10^{11} \text{ m}$. The masses are given above.



2. There is the force of gravity between your desk ($m = 37 \text{ kg}$) and your head ($m = 5 \text{ kg}$). They are separated by a distance of 0.65 m ,
- (a) Calculate this force.

(b) Why is it so small?

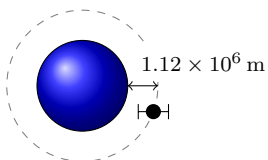
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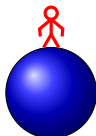
Reference Data	
Mass of Earth	$5.98 \times 10^{24} \text{ kg}$
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3. A satellite orbits the earth at a distance $1,120 \text{ km}$ ($1.12 \times 10^6 \text{ m}$) **above the Earth's surface**. If the force of gravity acting on the satellite is 2100 N , what is the mass of the satellite? (*Hint: think carefully about what the radius is.*)



4. A person has a mass of 92 kg .

(a) What is the force of gravity between the person and the earth? (Use $F_G = Gm_1m_2/d^2$.)



(b) Let's try it a different way. What is the person's weight on earth using the equation $F_G = mg$?

(c) Do your two answers agree?