Source:

1 | **Earth's Gravitatonal Field**

Extends infinitely large, but there is a point whereby it is imperceivable.

First, ***Newton's Law of Universal Gravitation***.

$\vec{F}_g = -\frac{M_2 M_1 G}{R^2} \cdot \hat{r}$, where G is the Universal Gravity Constant and r is a direction ("unit vector") tha points from M_1 to M_2 (so $\hat{r} = \frac{\vec{r}}{r}$).

Often, this is written as...

$\vec{F}_g = \frac{-GM_1 M_2}{r^3}\vec{r}$. It is r^2, but doing this and multiplying it to $\vec{r}$ is to resolve the need to rid if the direction.

2 | **Potential Energy**

Whenever we talk about "energy", we are really talking about the CHANGE in energy.

Potential Energy Location:

* ... ... \infty