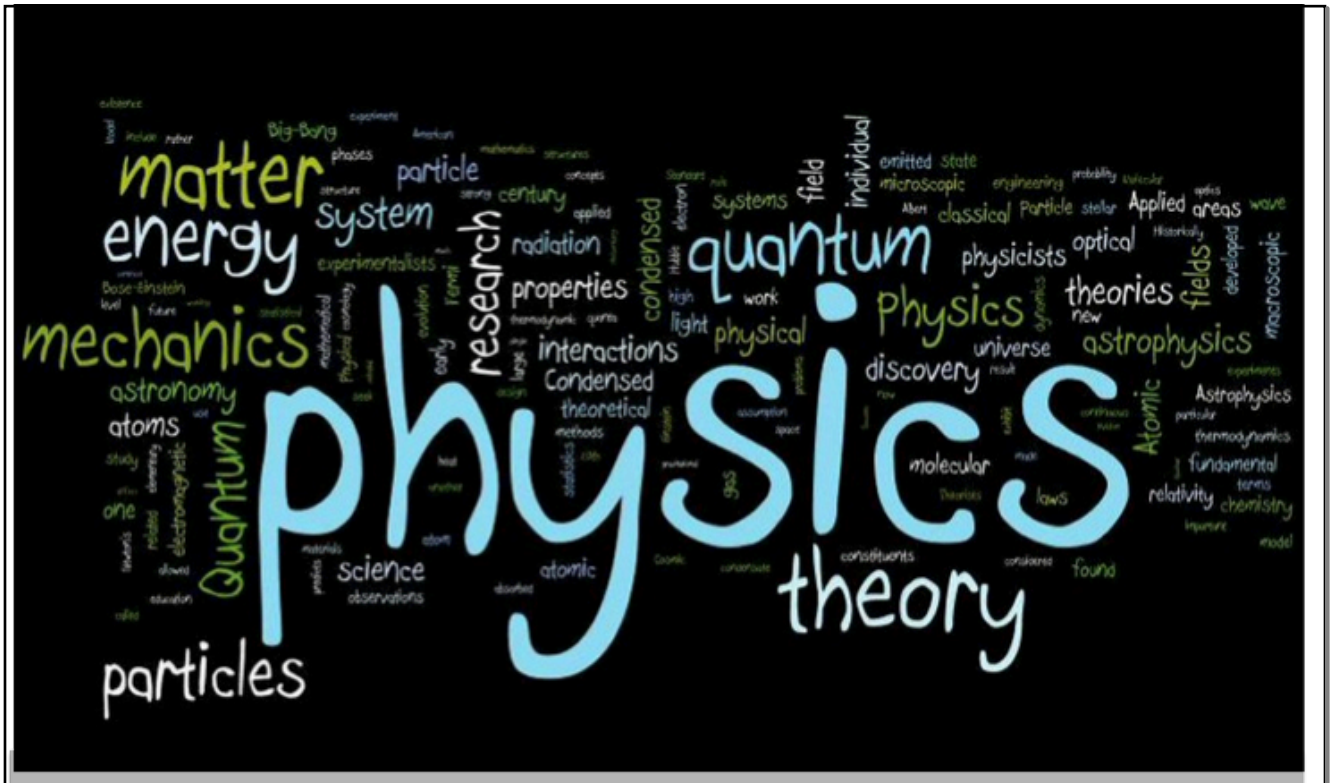
November 01, 2016



Uniform Circular Motion

Review

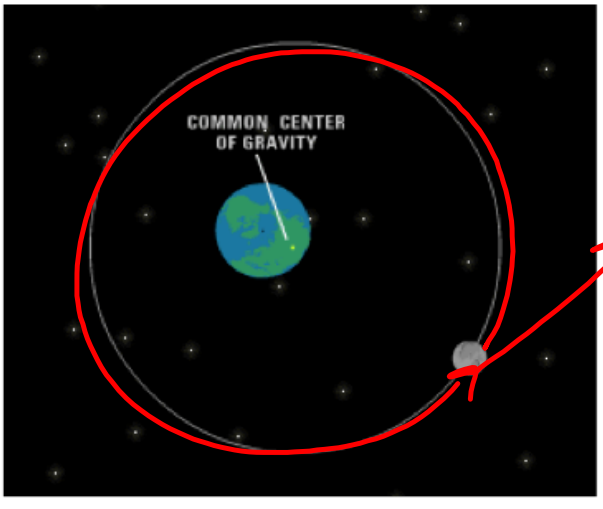
What is Newton's First Law…..

An object at rest stays at rest…. an object in motion stays in motion, unless acted on by….

For objects in motion –***how*** do they continue in motion?

Hanging on to the Moon

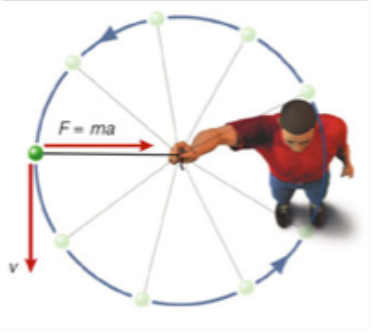
- If we want ~~to~~ the moon to keep moving around the Earth, what is needed?



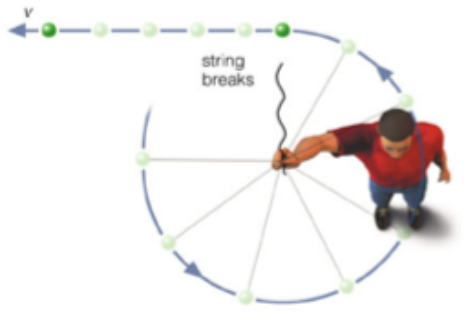
Something to pull/push it towards the center…'course correct'.

* Centripetal Force

Swinging Footballs?



- What keeps the football moving in a circle?



- What happens if the string breaks?

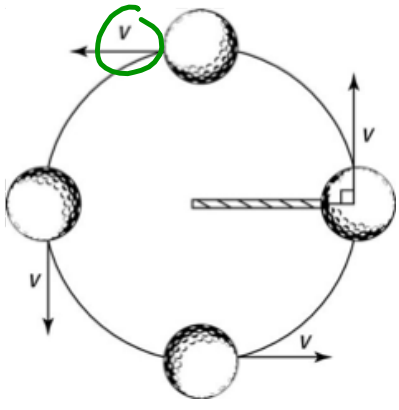
Changing Velocity?

Velocity is a vector with….

mag. & direction

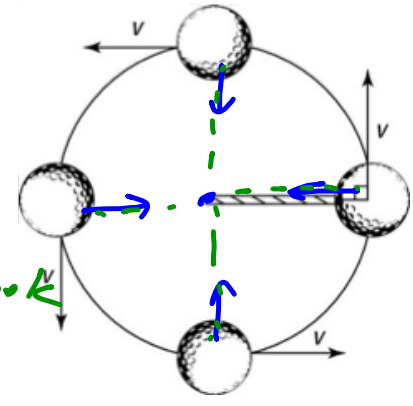
Magnitude may stay the same , but to go in a circle, you change… Direction

*Acceleration



Centripetal Acceleration

- **Centripetal Acceleration** – a center-seeking acceleration



- a_c • Also called radial accel. (a_r)

AP formula

textbook

$$a_c = \frac{v^2}{r}$$

- Acceleration (m/s²)
- Velocity (m/s)
- Radius (m)