Simple Harmonic Motion
(S.H.M.)

- When an object is in a S.H.M. Its;

1. *Acceleration* $= -\omega^2 x$

2. *(Velocity)*$^2 = \omega^2(A^2 - x^2)$

ω = Ang. velocity

x = Distance between considered point and the center of oscillation

A = Amplitude

Note: In the center of oscillation, you get the maximum velocity.

In the amplitude, you can get the maximum acceleration.

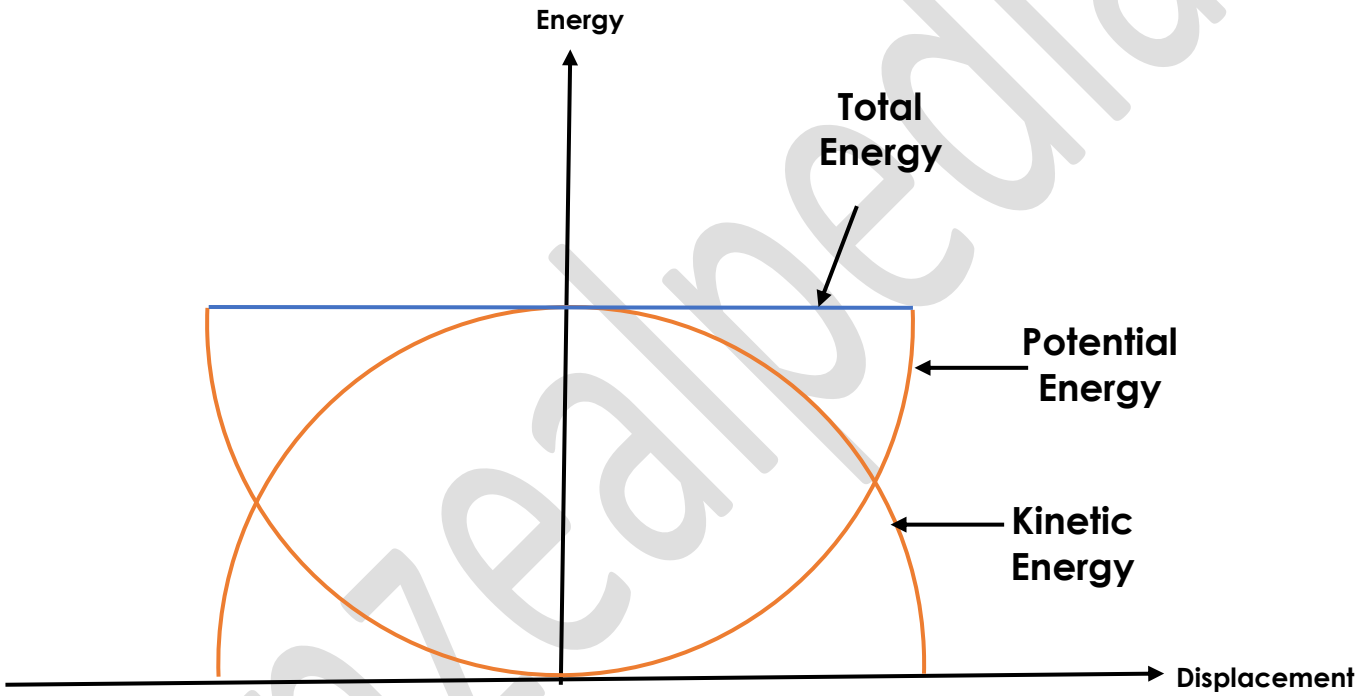
- ✓ $a_{max} = \omega^2 A$
- ✓ $v_{max} = \omega A$

3. *Periodic time* $= \frac{2\pi}{\omega}$

4. *Frequency = 1/f*

5. *Total Energy* $= \frac{1}{2} kA^2$

- *Energy – Displacement graph of an object in S.H.M.*



- **Direction**

To learn more about simple harmonic motion please go to Mathematics→Simple Harmonic Motion.

And also…go to easy patterns to get some formulas about periodic times of different objects.