

Simple Harmonic Motion (SHM)

SHM is a motion that obeys Hooke's Law $F = kx$

$F = -kx$ (restoring force)

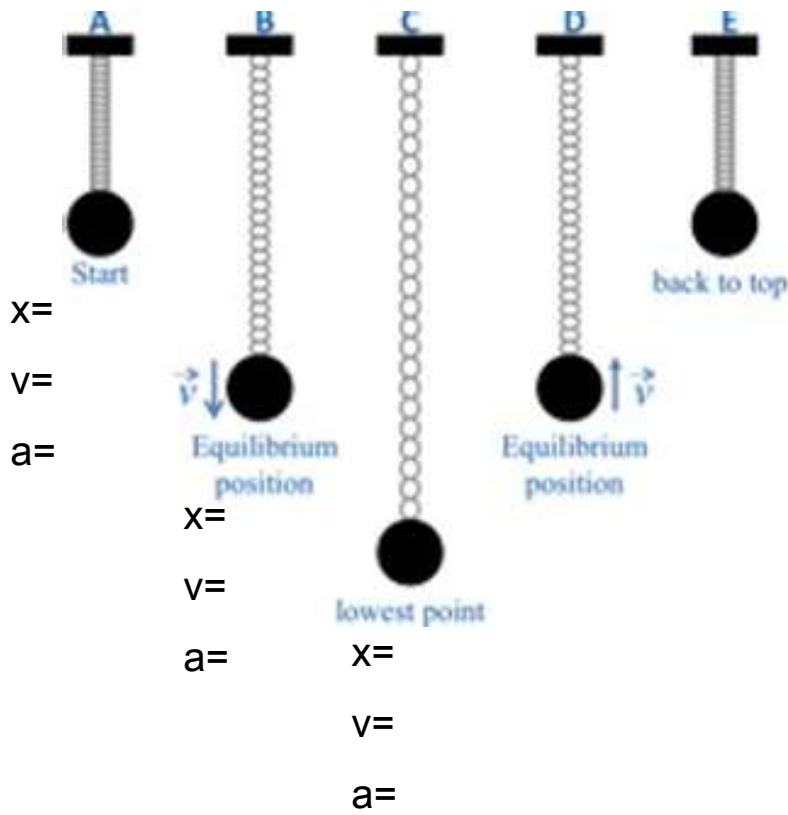
Any motion that repeats itself with a certain *period** is called **periodic** or **simple harmonic motion**.

**Period = time for one vibration*

Vertical Spring..

<http://www.bing.com/videos/search?q=simple+harmonic+motion+vertical+spring+filterui%3aduration-short&view=detail&mid=42A2F059F0BB9EEDED7742A2F059F0BB9EEDED77&first=0&qft=+filterui%3aduration-short&qpv=simple+harmonic+motion+vertical+spring&adlt=strict>





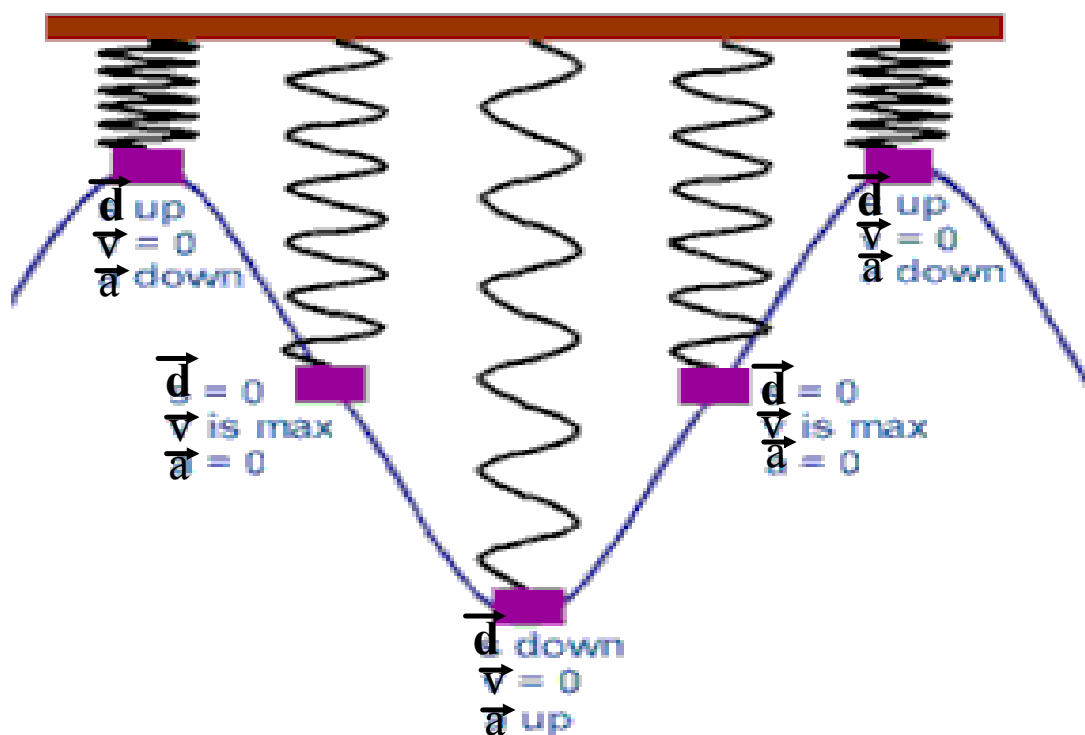
Amplitude (A): max stretch or compression (max value for x)

Maximum velocity?

Minimum velocity?

Maximum acceleration?

Minimum acceleration?



Acceleration...

$$\vec{F}_{\text{net}} = \vec{F}_{\text{spring}}$$

$$ma = -kx$$

$$a = -(k/m)x$$

$$a = -\left(\frac{K}{m}\right)x$$

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