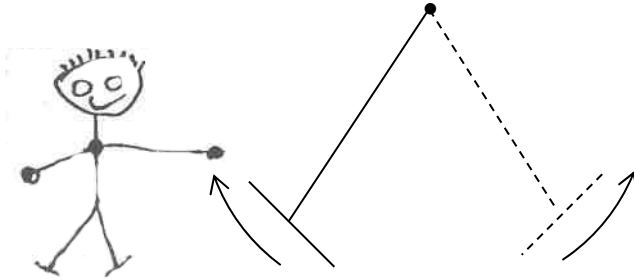


## STANDING WAVES

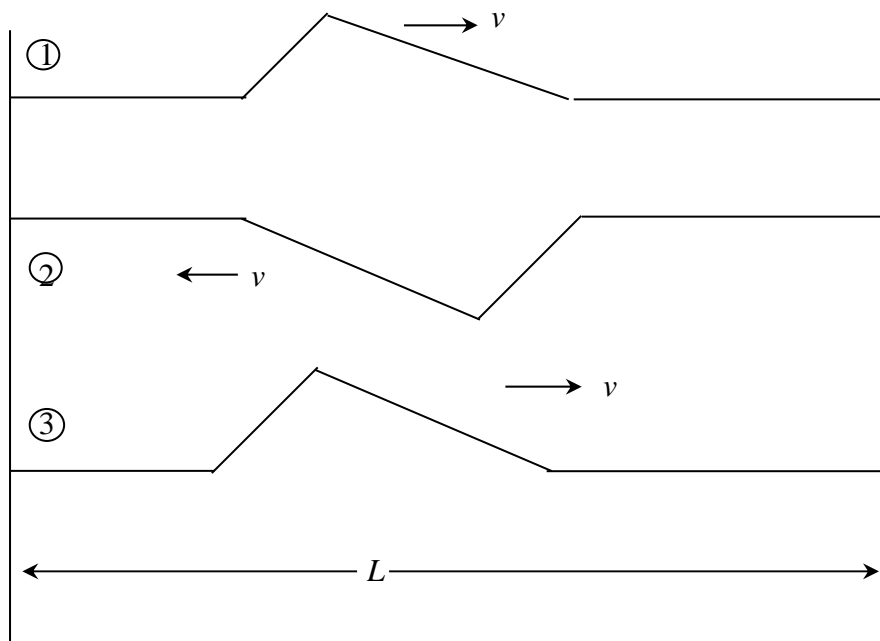
= Resonance Phenomenon

Input energy to create a “stable” configuration:

*e.g. A person swinging on a swing:*



*e.g. A traveling wave on a string:*



Traveling wave “gets in phase” after it travels a distance  $2L$  in time  $\tau = 2L/v$   
 $\therefore$  "PUSH" with frequency  $f \equiv 1/\tau = v/2L$  excites the fundamental!