Waves: Introduction

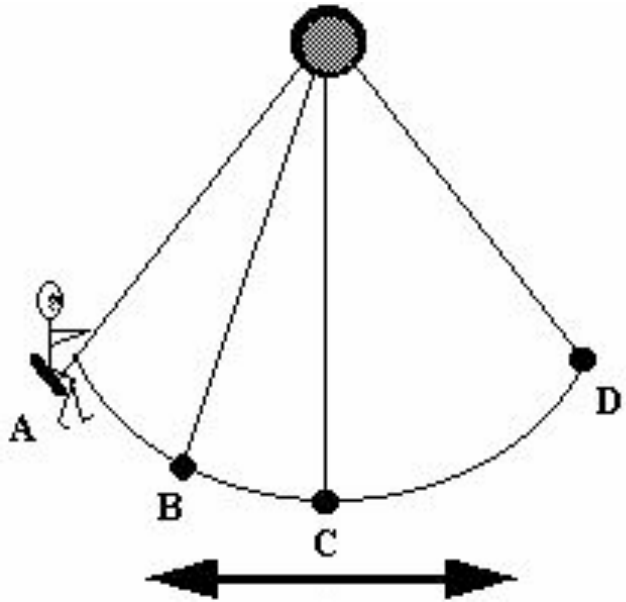
Essential Questions:

- What is ***harmonic motion***?
- What is a ***wave***?
- What is the difference between ***transverse*** and ***longitudinal*** waves?

Harmonic Motion and Oscillations

- Motion that repeats in cycles.

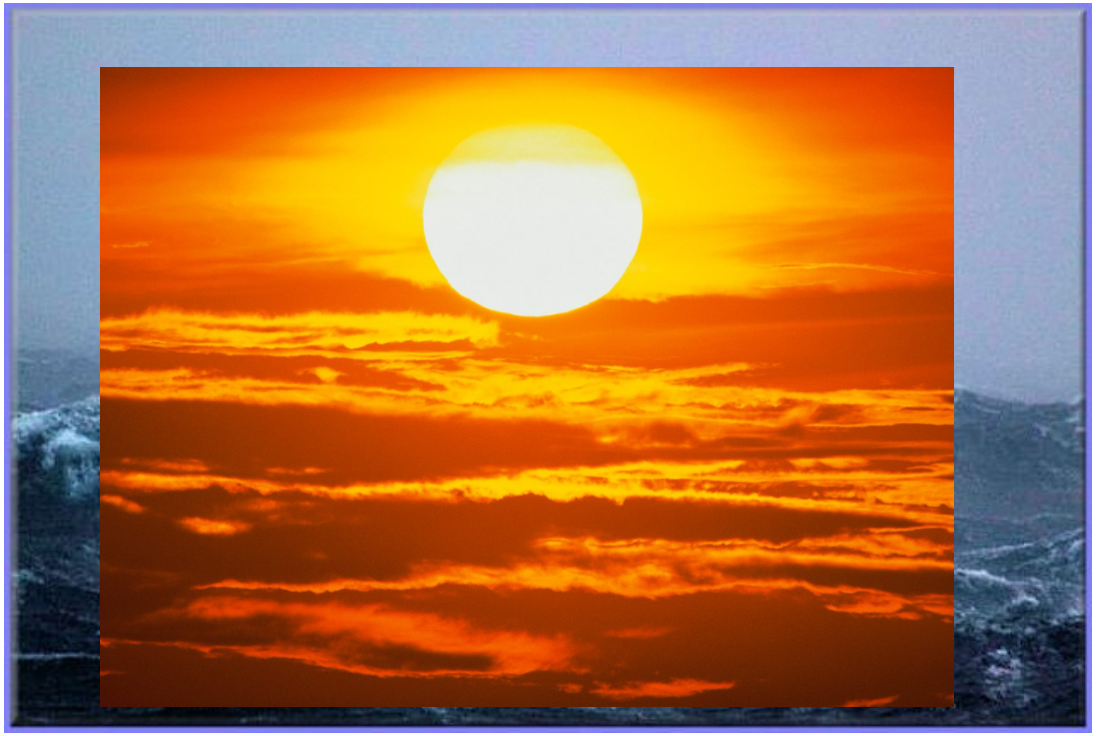
- A cycle is one complete oscillation or one unit of harmonic motion



Wave

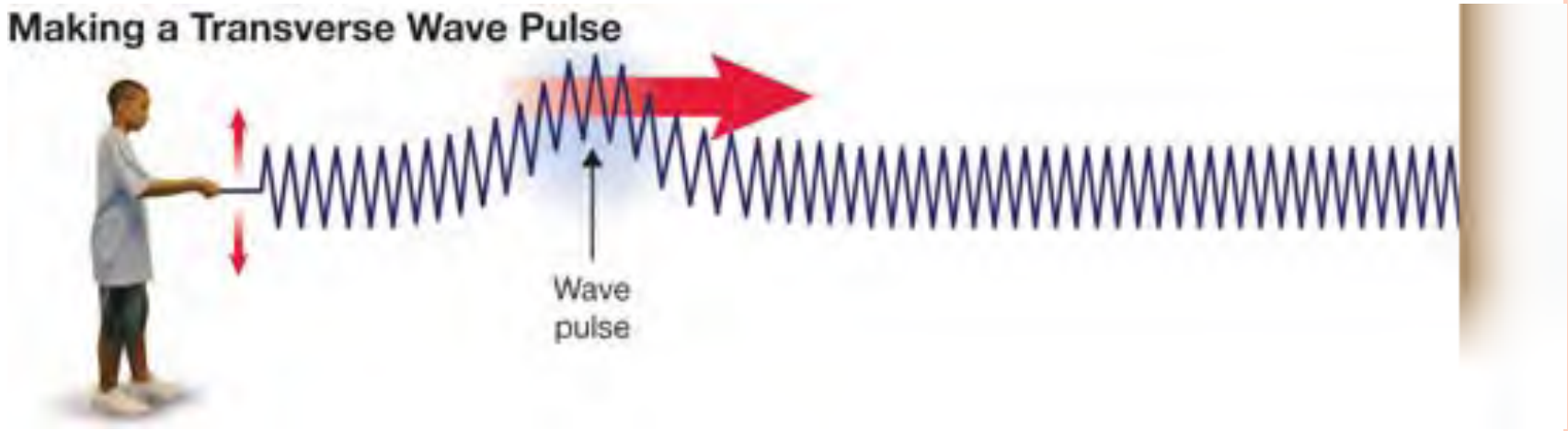
- Traveling oscillation that **transfers energy** through matter or space.

- Waves carry energy without transporting matter from place to place.

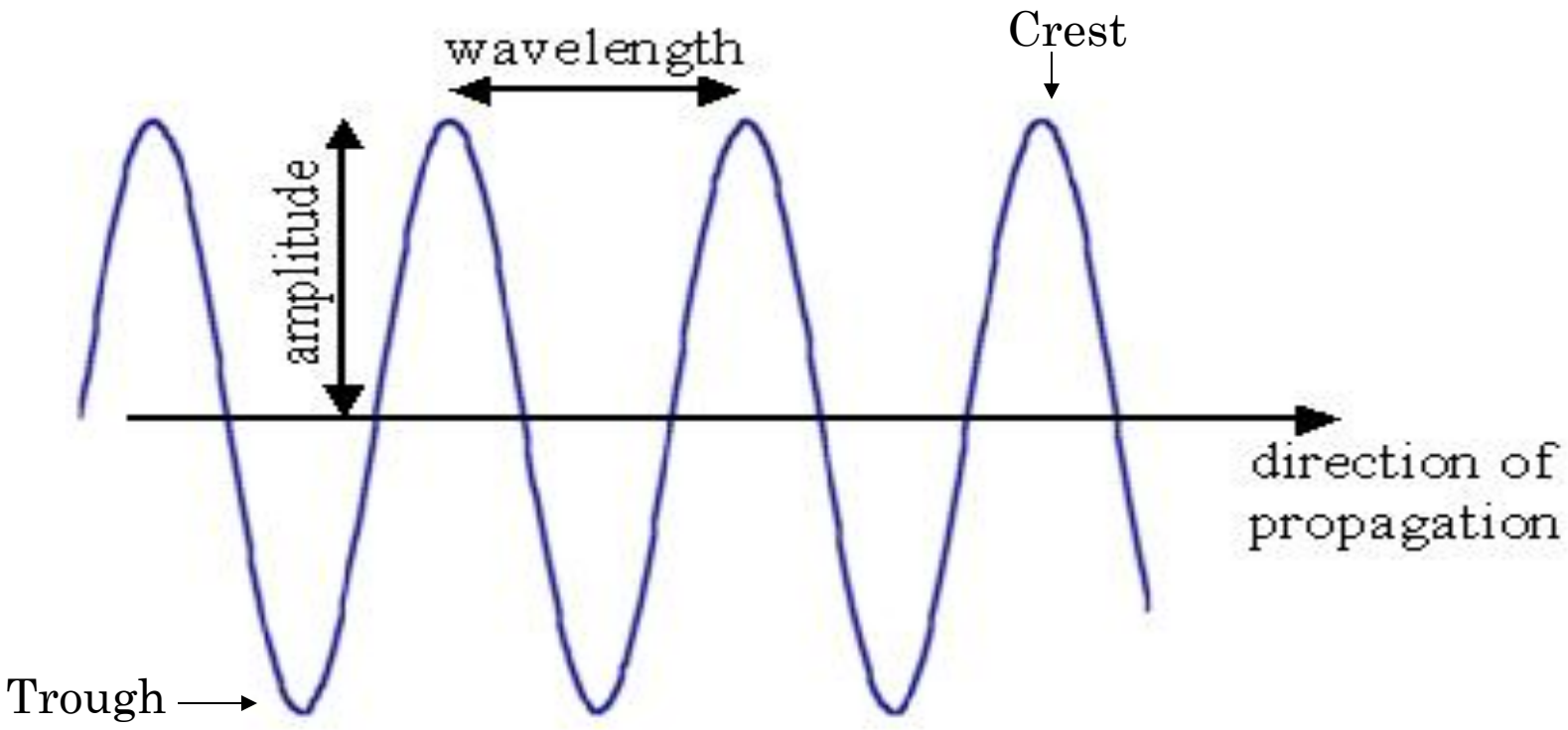


Two types of waves

1. Transverse wave
   - Ex. Water, light, x-ray, microwaves
   - Matter is disturbed perpendicular to the wave direction.

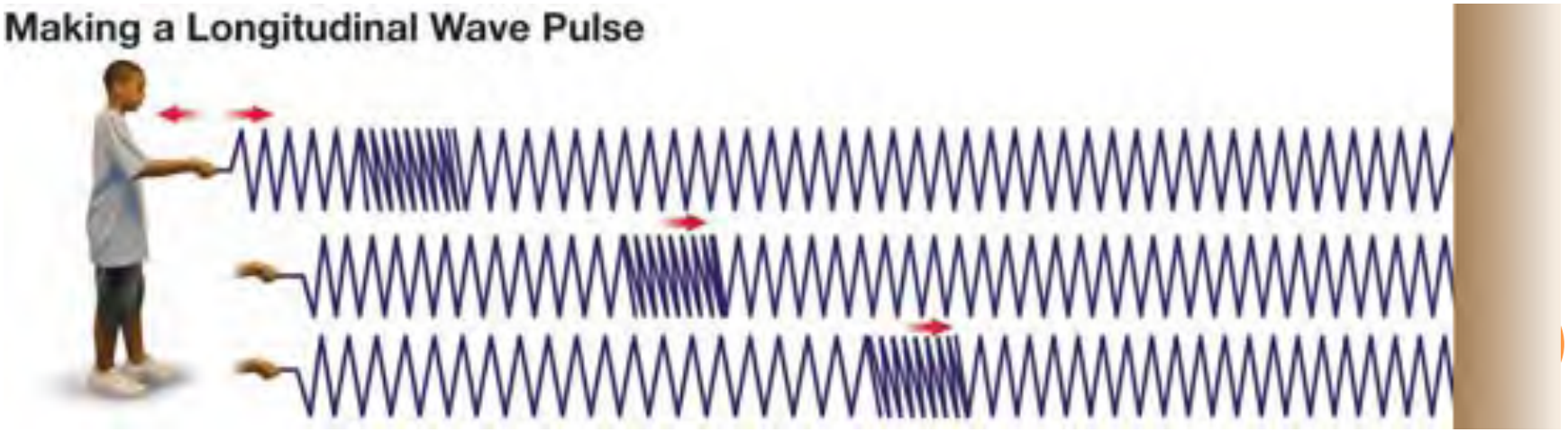


- Wave demonstration



2. Longitudinal wave

- Ex. Sound
- matter is disturbed parallel to the wave direction



Wave demonstration