

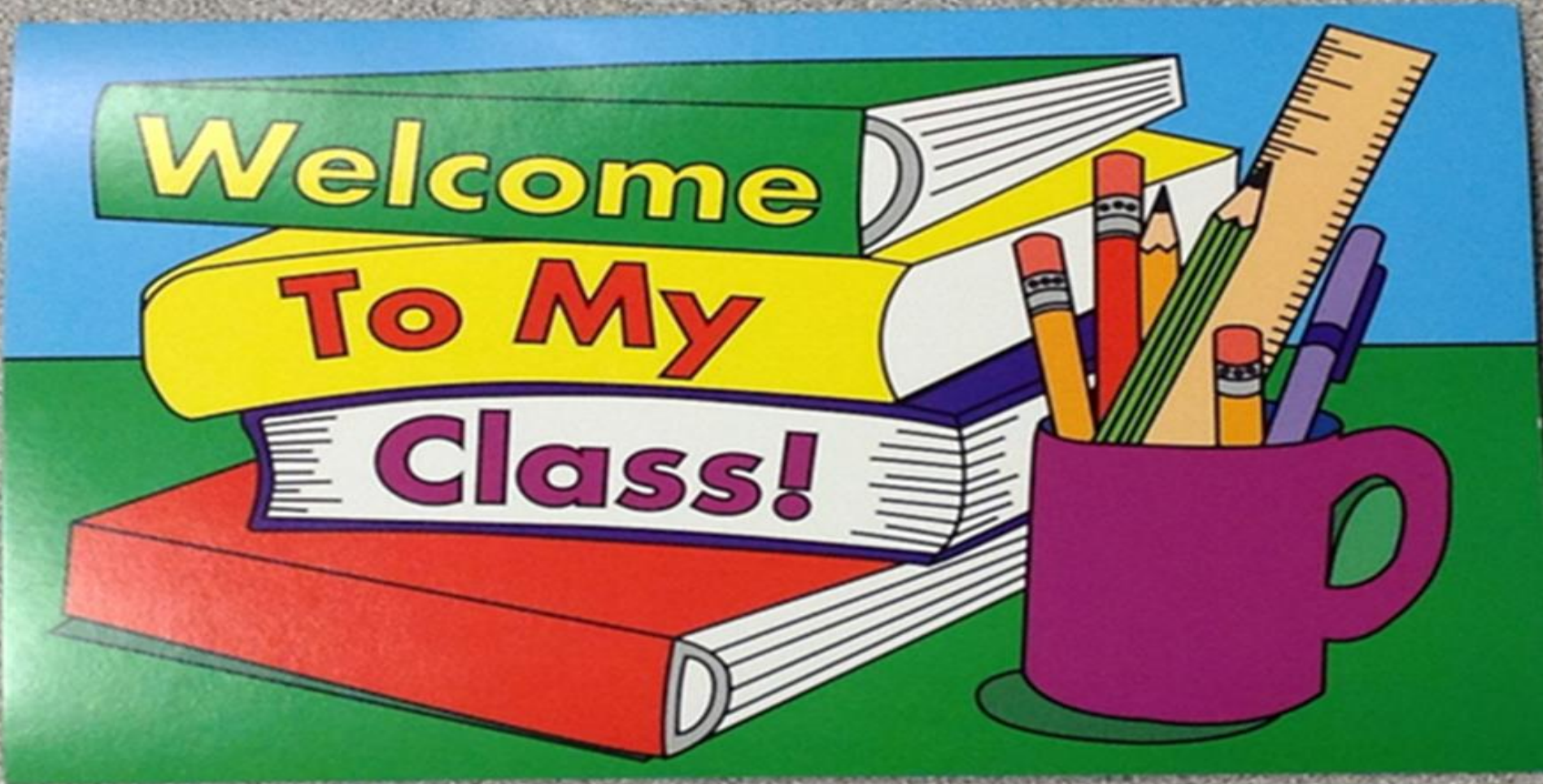


Pakistan School
Kingdom of Bahrain



CLASS 10

SUBJECT :PHYSICS



ENGAGING STARTER

**How does sound travel
from one place to
other?**



TOPIC

Damped Oscillation and Wave motion



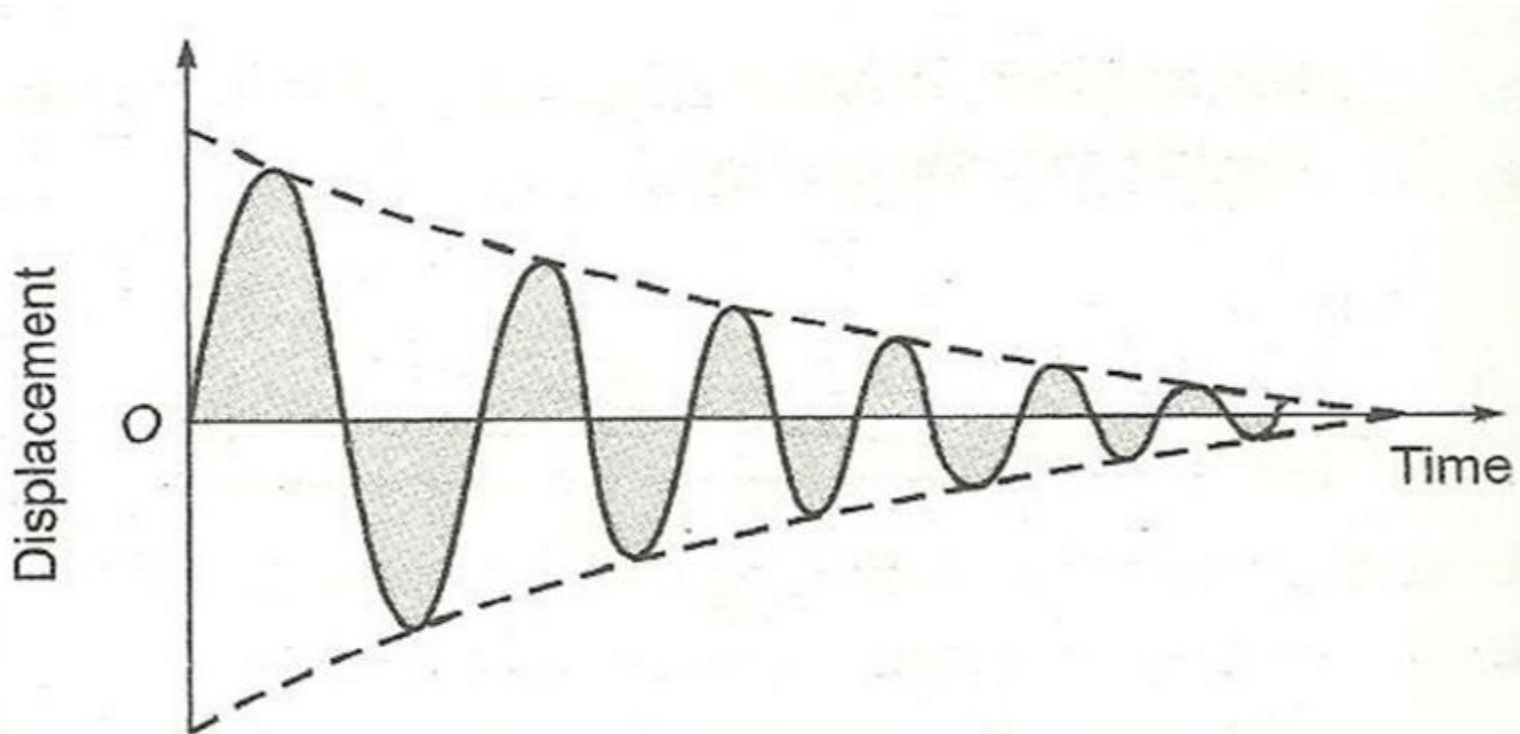
OBJECTIVE

**At the end of this lesson
students will be able to :
Describe different types of
waves**



DAMPED OSCILLATION.

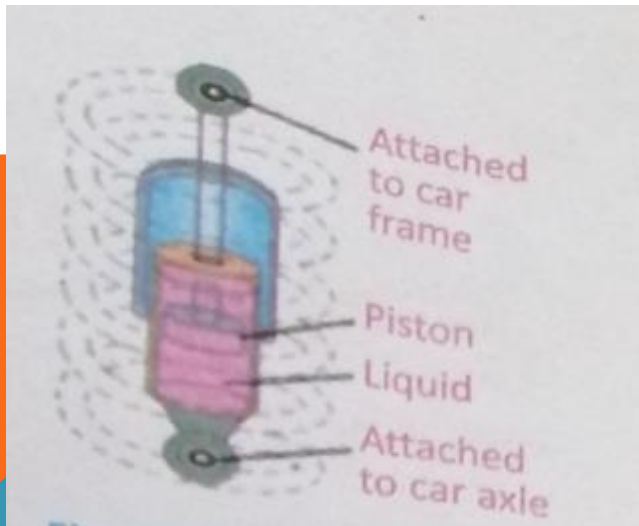
The oscillations of a system in the presence of some resistive force (force of friction) are damped (fades) oscillations.



APPLICATIONS OF DAMPED OSCILLATION

The application of damped oscillation is shock absorber used in cars, buses etc.

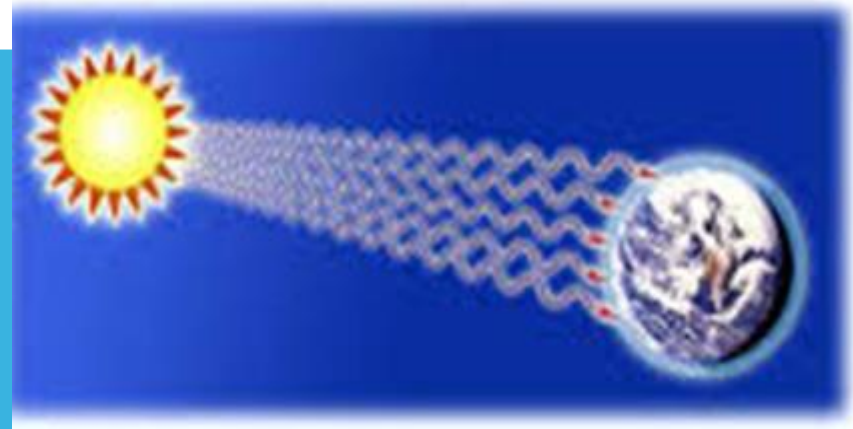
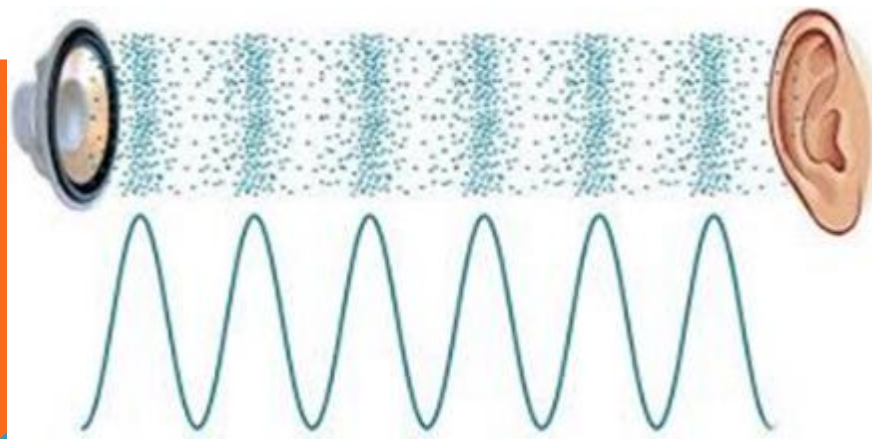
When the car travels over a hump on the road, the car may vibrate violently. The shock absorbers damp these vibrations and convert this energy into heat energy of the 'oil'.



WAVE

“Wave is a mechanism in which energy is transferred from one place to another place due to disturbance in the medium”.

There are some waves, which we can see while there are some, which we cannot see, it can be detect with some sensitive instruments,



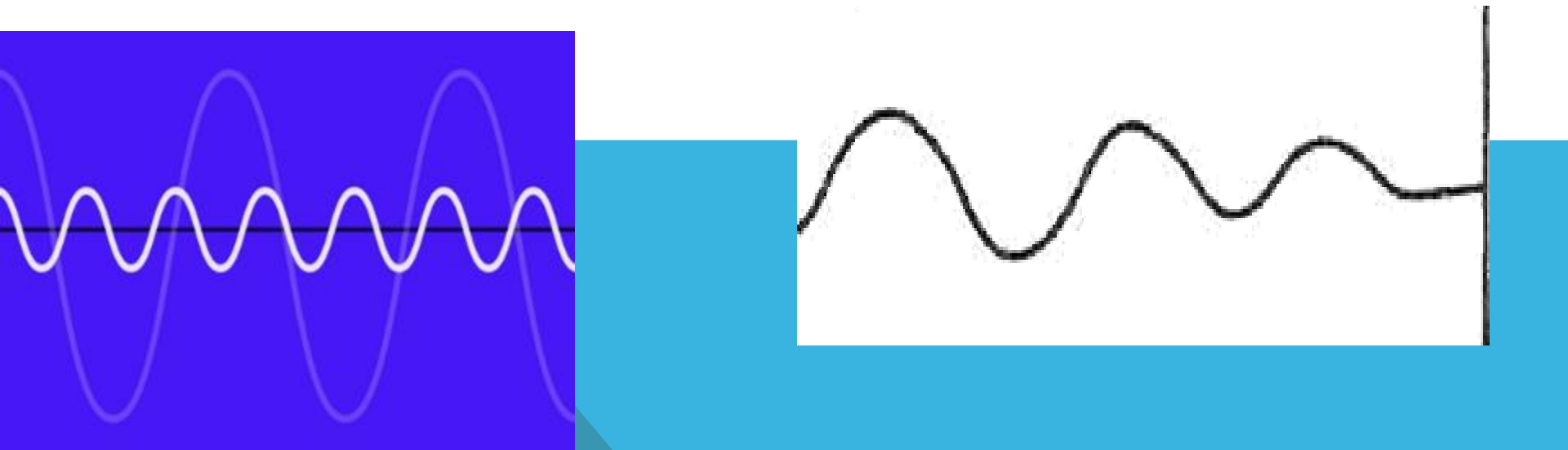
WAVE MOTION

“Wave motion in a medium is due to generated disturbance which causes the constituents of particles to repeat its to and fro motion about its mean position in equal intervals of time, and this disturbance is passed over from one end of the medium to the other.



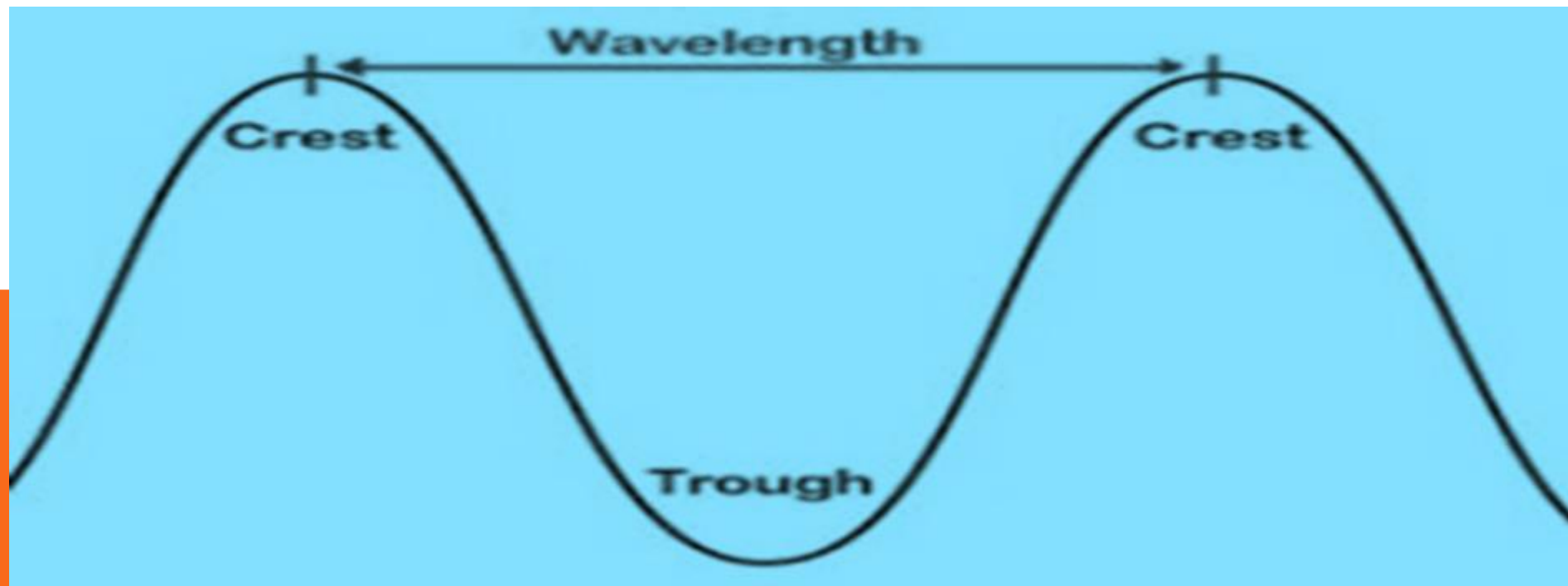
EXPERIMENT-2:

Take a string and mark it with different colors at equal interval's, Attach one end of string with a hook and keep the other end to oscillates. We will See that string will start oscillating vertically up and down briskly end wave will seen. When the color markings are observed the wave will travel down the string and they are vibrating about their mean position.



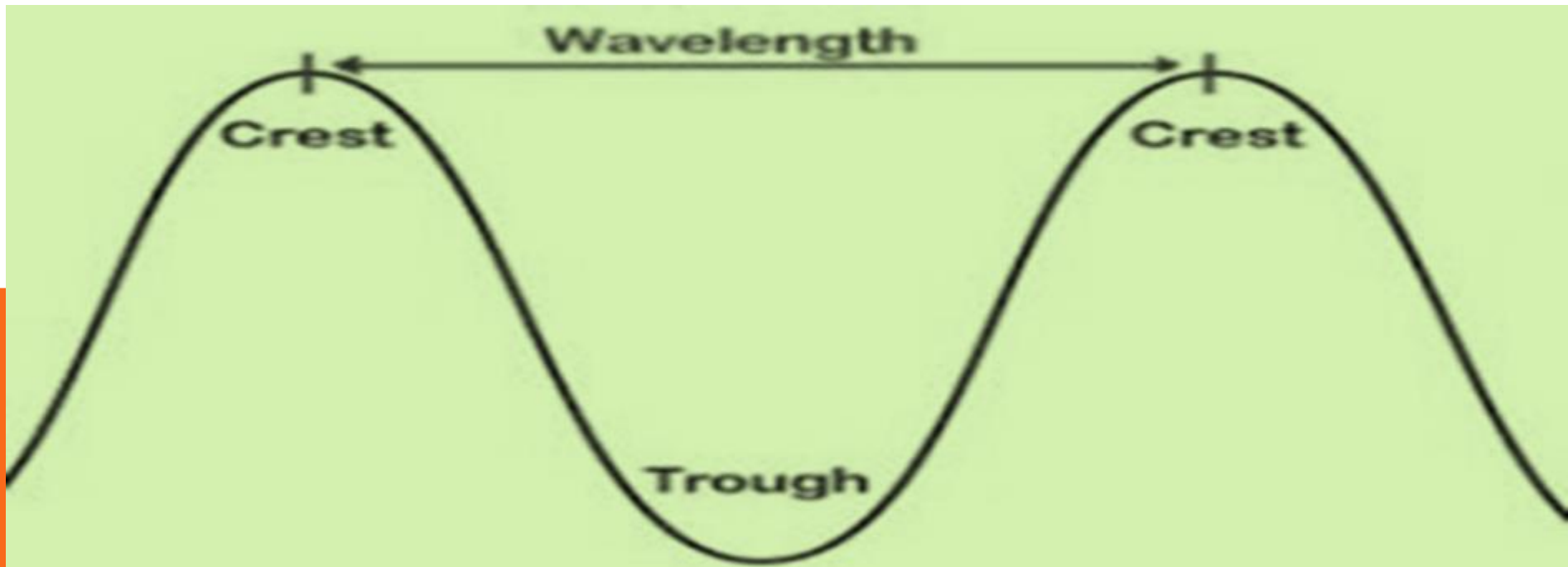
CREST:

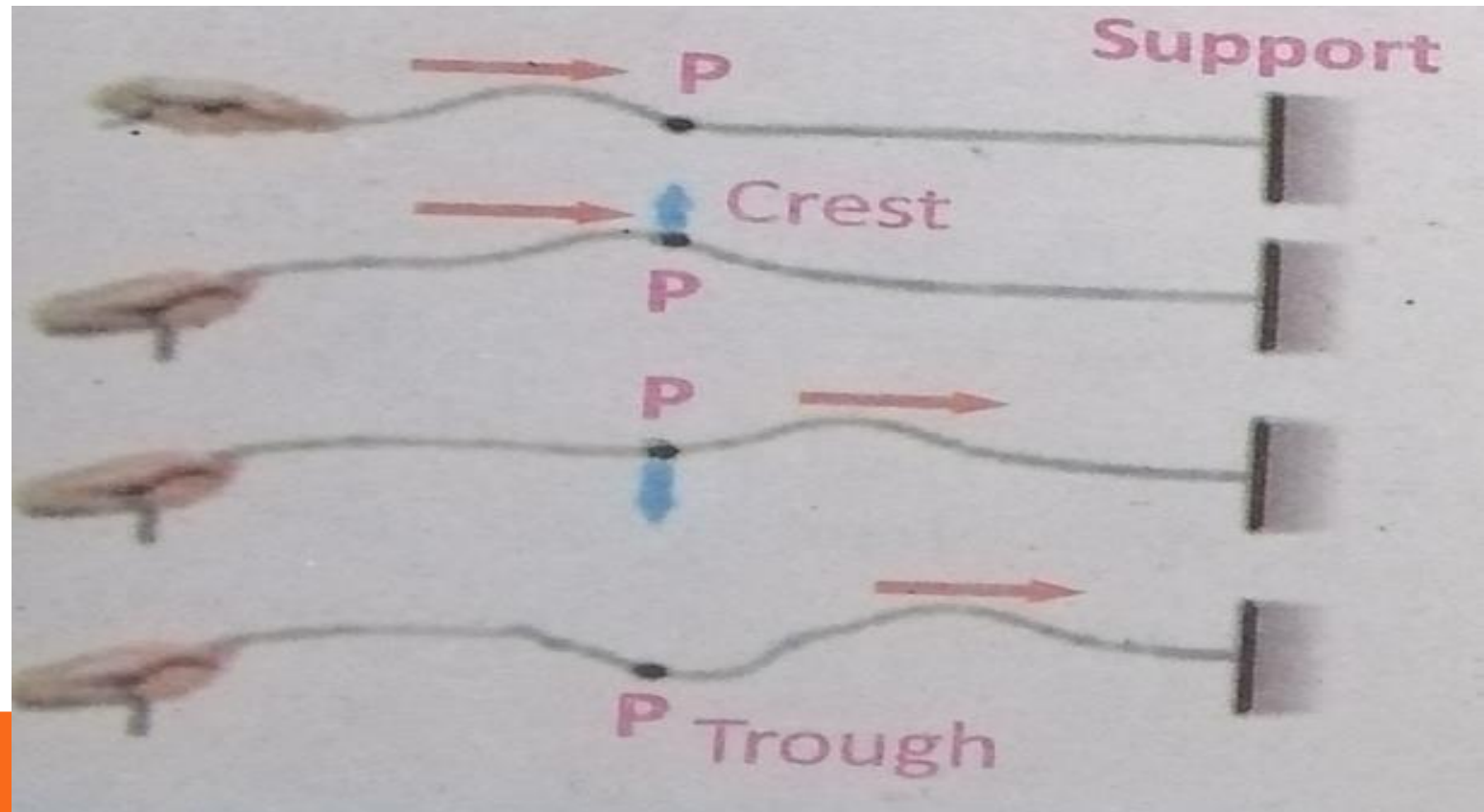
The part of transverse waves where particles of medium are above the normal position are called crest.



TROUGH

The parts of transverse waves where the particles of medium are below the normal position are called Trough.





TYPES OF WAVES:

There are two categories of waves:

Mechanical waves

2. Electromagnetic waves

1) Mechanical waves:

Waves which require any medium for their propagation are called mechanical waves. In such types of waves, the particles of the medium vibrate about their respective mean position and propagate disturbance in the forward direction.

Examples of Mechanical Waves:

- ☐ sound
- ☐ air
- ☐ water
- ☐ ropes
- ☐ earthquakes
- ☐ tsunami waves





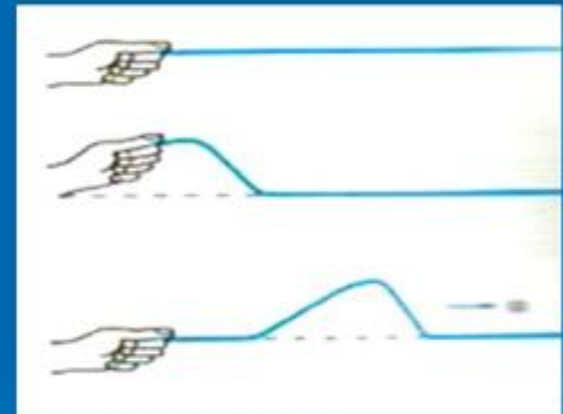
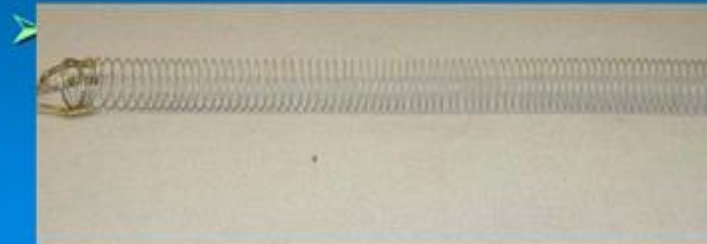
MECHANICAL WAVES

require a **medium** (the material through which the disturbance is moving) to transmit energy

travel through & gradually lose energy to that medium

➤ Examples:

- water, sound, rope, & spring waves

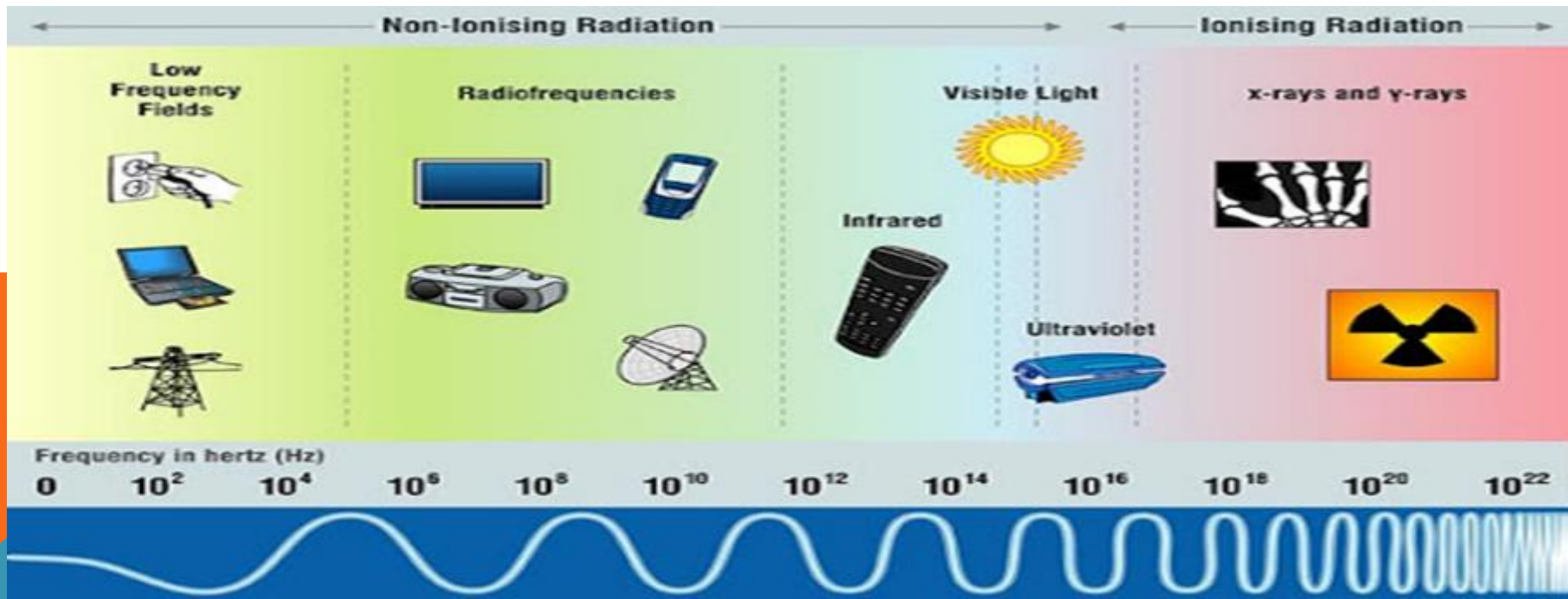


Making a pulse

ELECTROMAGNETIC WAVES:

Waves which do not require any medium for their propagation are called electromagnetic waves.

Such waves are consisted of electric and magnetic fields.



Stay home

Stay safe



Allah Hafiz

