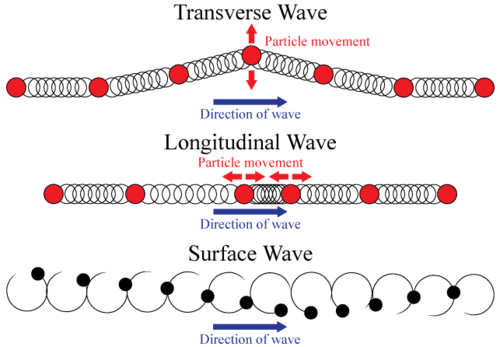
[](https://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwjztI3ZvInXAhWBOSYKHVQtDR0QjRwIBw&url=https://www.ck12.org/book/CK-12-Physical-Science-Concepts-For-Middle-School/section/5.22/&psig=AOvVaw1xfB2AnwAeeJkM0zg4HJQh&ust=1508941872244530)**CHAPTER 15 WAVES**

**Waves**

* \_\_\_\_\_\_\_- a disturbance that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_through matter or space
* Energy may \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ explains differences in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The speed of a wave depends on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Medium-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Ex:
  + Greatest in \_\_\_\_\_\_\_\_\_\_\_\_ and least in \_\_\_\_\_\_\_\_\_\_\_
* 2 Types of Waves: 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**1. Mechanical Waves**

* A wave that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ through which to \_\_\_\_\_\_\_\_\_\_\_\_\_\_
* They are caused by the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ within the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* 3 Types of Mechanical Waves: 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_ waves (air)
  + \_\_\_\_\_\_\_\_\_\_\_\_ waves
  + waves in a \_\_\_\_\_\_\_\_\_\_\_\_\_
  + Explain a tsunami wave.

**Transverse Wave**

* Particles oscillate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ about their equilibrium positions, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the direction of wave propagation
* Its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ perpendicular to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the wave moves
* Ex:

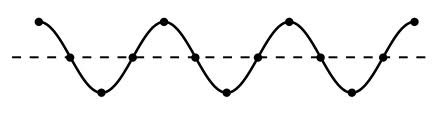
**Longitudinal Wave**

* Particles \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ about their equilibrium positions, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of wave motion
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the same direction as the wave moves
* Ex:

**Surface Wave**

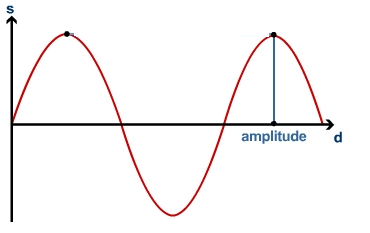
* In a surface wave, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ move in \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Combination of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Ex:

**Wave Properties of a Transverse Wave**

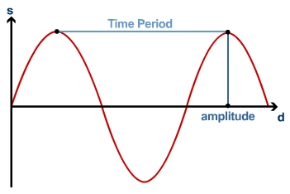
[](http://www.google.com/imgres?imgurl=http://prrd.ab.ca/~dave.blemings/tech_conference_2008/FOV1-0001FFC9/FOV1-0002001E/FOV1-00020028/transverse%20wave.gif&imgrefurl=http://prrd.ab.ca/~dave.blemings/tech_conference_2008/FOV1-0001FFC9/FOV1-0002001E/FOV1-00020028/&h=198&w=759&tbnid=nGyKSJh0ldIagM:&zoom=1&q=transverse%20wave&docid=MtG64JwuTyBaPM&ei=E5lGVJvYIIaRgwTU-4KgDw&tbm=isch&ved=0CHcQMyhSMFI&iact=rc&uact=3&dur=814&page=4&start=64&ndsp=21)

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a transverse wave
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a transverse wave
* A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ consists of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that particles in a medium move from their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Wavelength**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-the distance between any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a wave
  + Ex:
* Short the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

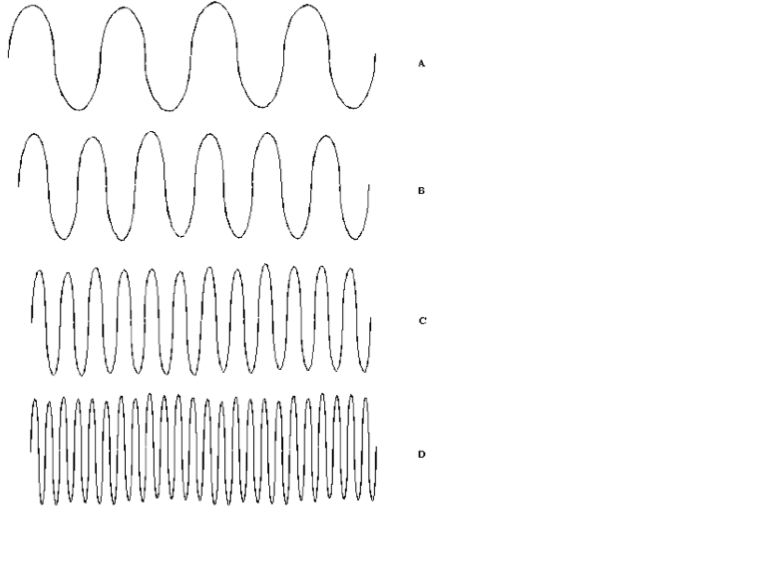
**Amplitude**

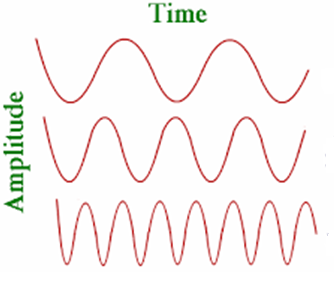
* The amount of \_\_\_\_\_\_\_\_\_\_\_\_carried by a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Large the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Period**

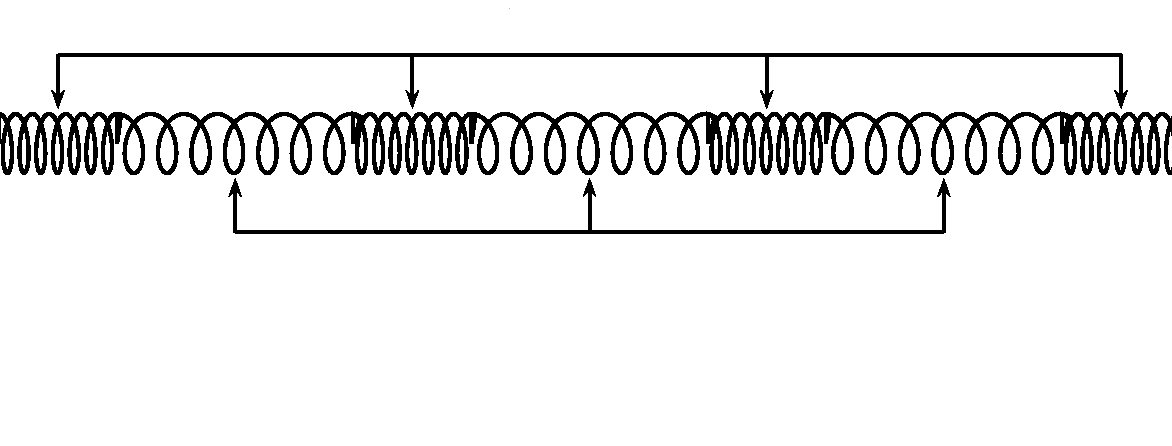
* the time required for one full wavelength to pass a certain point
* complete cycle or wave oscillation to occur

**Frequency**

* The number of cycles or vibrations per unit of time.
* The number of waves produced in a given amount of time.

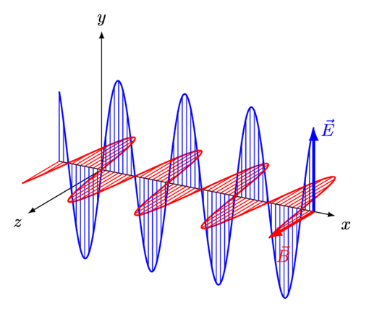


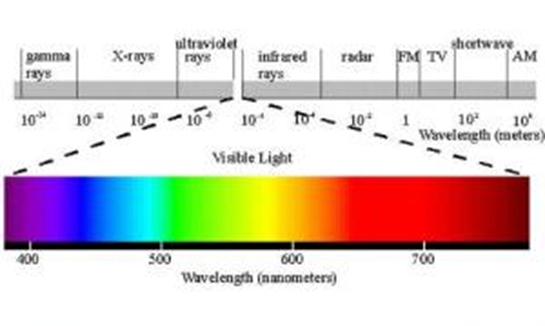
**Wave Properties of a Longitudinal Wave**



* A cycle consists of one compression and one expansion of the particles of the medium.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ areas of a longitudinal wave
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ areas of a longitudinal wave

**2. Electromagnetic Wave**

* Wave caused by a disturbance in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ particles.
  + Does not require a \_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Also called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + can transfer energy through a \_\_\_\_\_\_\_\_\_\_\_\_\_
  + can also transfer energy through a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Ex.

****

**Wave Interactions**

* Waves bend when they pass from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |  |
| --- | --- | --- |
| **Wave Interaction Type** | **Details** | **Diagram** |
| 1. | The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a wave as it meets a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Ex: |  |
| 2. | The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a wave as it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Ex: |  |
| 3. | The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of waves as they pass from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  All waves are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when they pass from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to another at \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Ex: |  |
| 4. | The\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of two or more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the same place at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Occurs in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Ex: |  |
| Type 1:   * Waves \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ any phase difference * Waves combine to form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * Increases \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |
| Type 2:   * Waves combine differing by multiples of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * waves combine to form a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than the largest of the original waves * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_amplitude |  |

