

Name: _____ Date: _____ Period: _____

Chapter 20 Reading Worksheet

Chapter 20 Section 1

A wave is an oscillation that travels from one place to another

What is an oscillation? (use glossary) _____

A motion that repeats regularly

Three examples of waves are:

1. Light
2. Cell phone
3. TV

How do waves transmit information?

Uses different signatures to transmit → much like a finger print

Like oscillations, waves have the properties of frequency, period & amplitude. Information in waves is often transmitted in patterns of changing amplitude & frequency. Waves also have two new properties: speed & wavelength

What is the difference between a transverse wave and a longitudinal wave?

T - oscillations perpendicular to direction wave moves
L - oscillations parallel to direction wave moves

What is frequency?

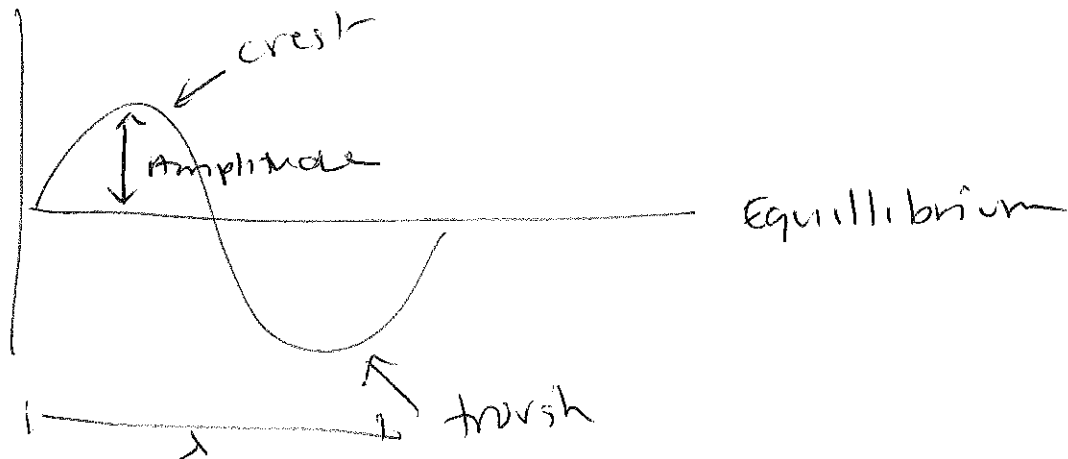
cycles / second

How is it measured?

Hz $(\frac{1}{s})$

What is amplitude? max dist. from average in harmonic motion
(crest/trough) → measured in dist. / #

Diagram the parts of a wave:



How is the speed of a wave calculated?

$$v = f\lambda$$

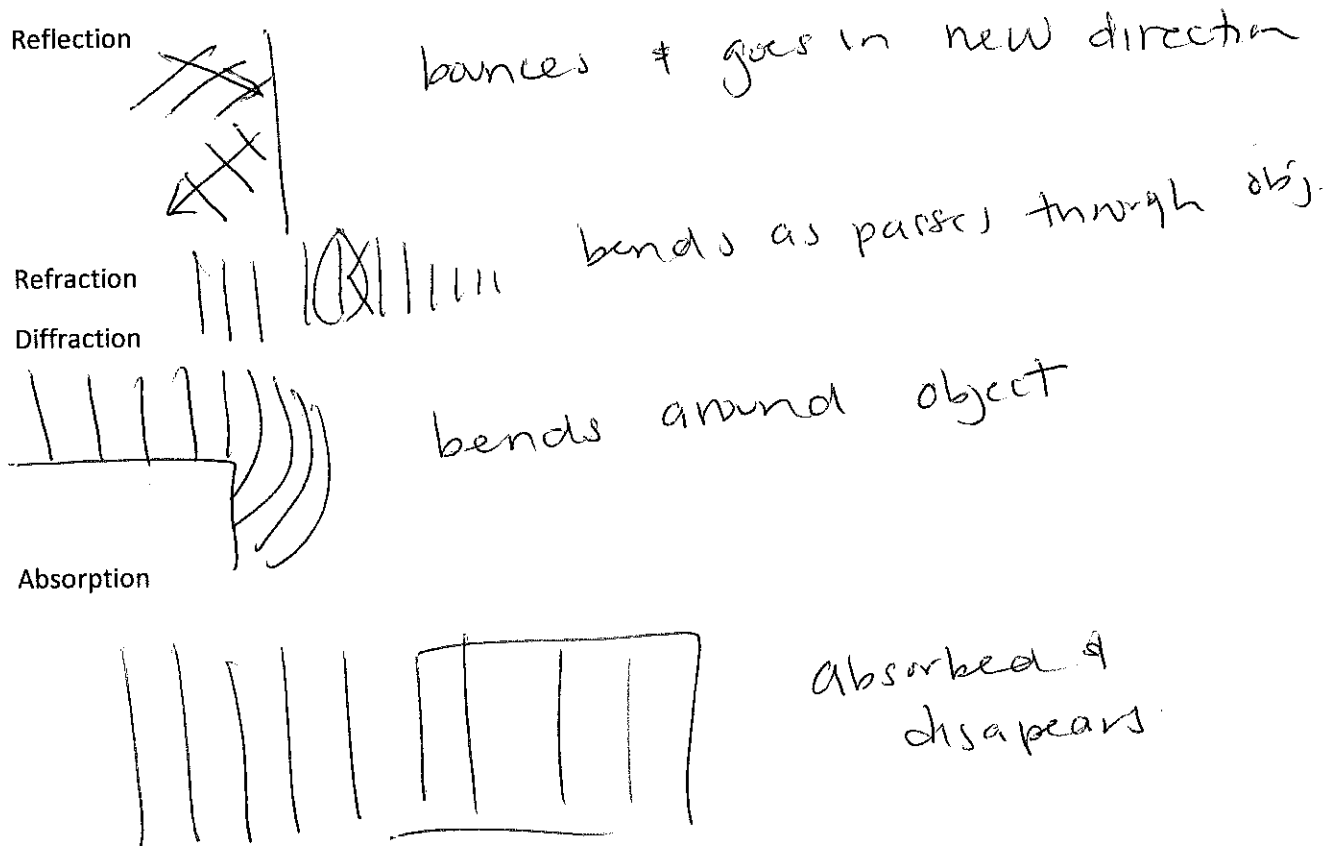
Chapter 20 Section 2

Define the following:

- Propagate spread out from where begin
- Plane wave pattern of parallel waves
- Wave fronts synonym of plane wave
- Circular wave pattern of circular wave front

The direction a wave moves depends on the shape of the wave front. Plane waves are straight and move in a line perpendicular to the crest of the wave. Circular waves move outward in a circle from the center. Anything that changes the shape of the wave front changes the direction the wave moves.

Draw and define the following using Figure 20.12

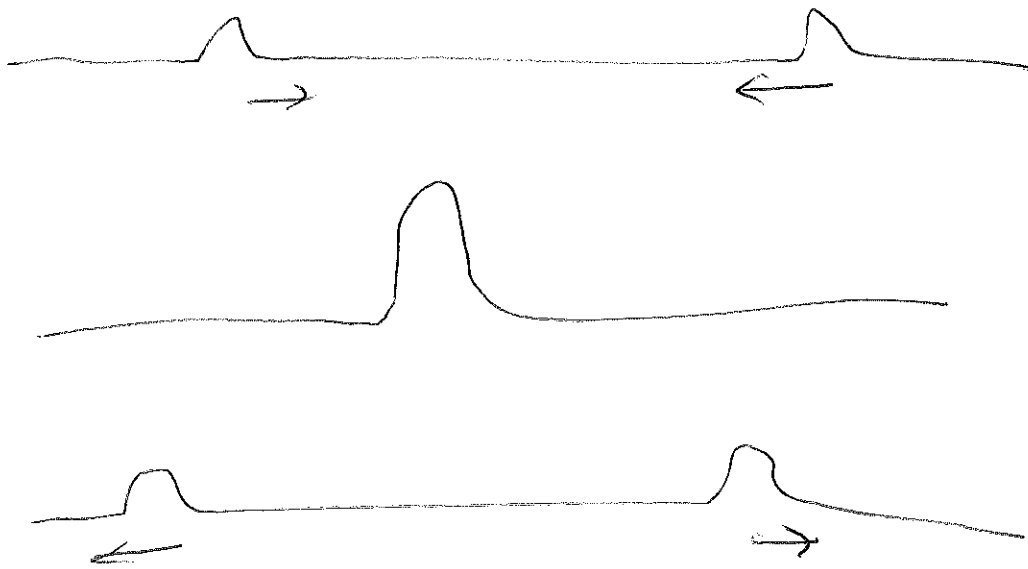


Chapter 20 Section 3

Define the following:

- Interference 2 or more waves mix together
- Superposition total vibration at any pt. is sum of vibrations from each individual wave
- Principle same →
- Wave pulse short length wave
- Constructive interference waves add to make larger amplitude
- Destructive interference waves add to make smaller / zero amplitude

Draw Figure 20.13. This is showing two wave pulses that are in phase can add up to make a single, bigger pulse when they meet. This is an example of **constructive interference**.



Draw Figure 20.14 Two equal wave pulses that are out of phase will subtract when they meet. The upward movement of one pulse exactly cancels with the downward movement of the other. For a moment there is no pulse at all. This is an example of **destructive interference**.

