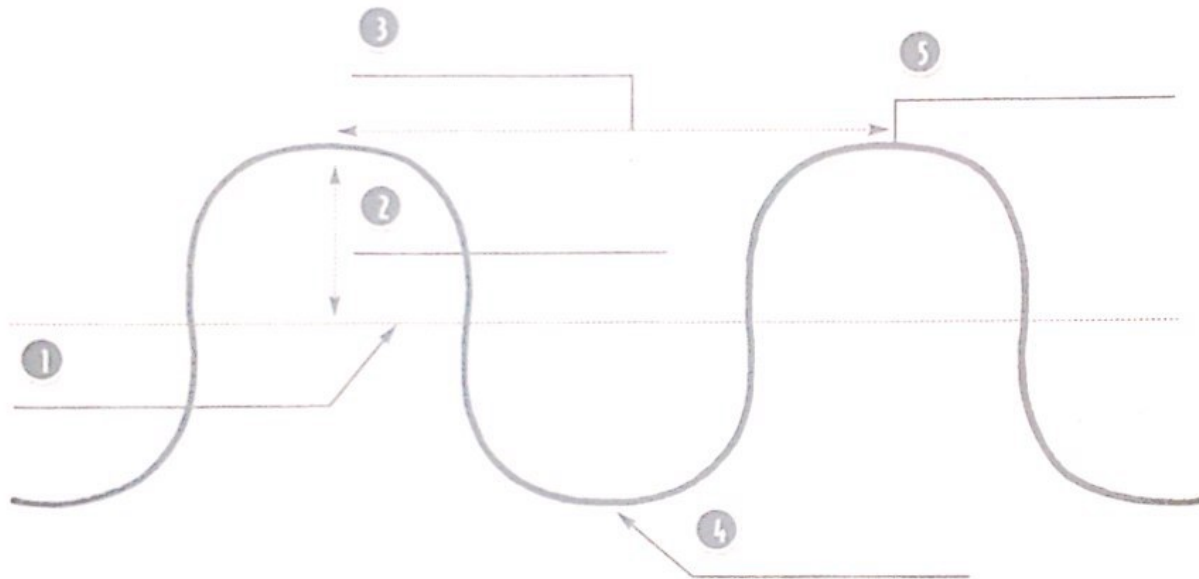


Name \_\_\_\_\_ Date \_\_\_\_\_

# Diagram of a Wave

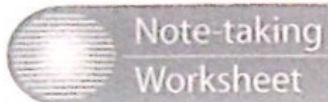
Both light and sound travel in waves. Use the terms in the word box to label the parts of a wave.

amplitude      wavelength      crest      equilibrium      trough



Match each term in the word box above to its description.

- 6 \_\_\_\_\_ This is a measure from a point on one wave to the corresponding point on the next wave.
- 7 \_\_\_\_\_ This is the lowest point on a wave.
- 8 \_\_\_\_\_ This is the highest point on a wave.
- 9 \_\_\_\_\_ This is the distance a wave rises or falls from its equilibrium.
- 10 \_\_\_\_\_ This describes when the wave is at a rest position.



# Waves

## Section 1 What are waves?

- A. Rhythmic disturbances that carry energy without carrying matter are called \_\_\_\_\_.
- B. Molecules \_\_\_\_\_ wave energy without moving themselves, like a line of people passing a ball.
- C. \_\_\_\_\_ waves use matter to transfer energy.
- \_\_\_\_\_ wave—wave energy causes matter in the medium to move up and down or back and forth at right angles to the wave
  - \_\_\_\_\_—matter in the medium moves forward and backward in same direction as the wave
- D. \_\_\_\_\_ waves—compressional waves caused by colliding air molecules
- E. \_\_\_\_\_ waves—transfer energy without using matter; the Sun emits electromagnetic waves that travel through space to Earth

## Section 2 Wave Properties

- A. \_\_\_\_\_—the measure of how high the crests are or how deep the troughs are; or the distance between the particles in a compression and rarefaction
- B. \_\_\_\_\_—distance from the top of one crest to the top of the next crest or from the bottom of one trough to the bottom of the next trough; or the distance from compression to compression or rarefaction to rarefaction
- C. \_\_\_\_\_—number of wavelengths passing a given point per second
- Longer wavelengths result in \_\_\_\_\_ frequencies.
  - \_\_\_\_\_ frequencies result in shorter wavelengths.
  - \_\_\_\_\_ and \_\_\_\_\_ result from wavelengths and frequencies of light and sound.
- D. Wave \_\_\_\_\_—how fast a wave travels through a medium
- Mechanical waves travel faster in a medium in which atoms are \_\_\_\_\_ together.
  - Electromagnetic waves travel faster in a medium with \_\_\_\_\_ atoms in it.