



Name _____ Class _____ Date _____

AFTER THIS WORKSHEET YOU CAN

- ✓ Understand: What is a Wave?
- ✓ Understand: Transverse vs. Longitudinal Waves
- ✓ Understand: Wavelength, Amplitude, Frequency, and Period
- ✓ Understand: The Wave Speed Equation



Section A • Concept Check

• BEGINNER

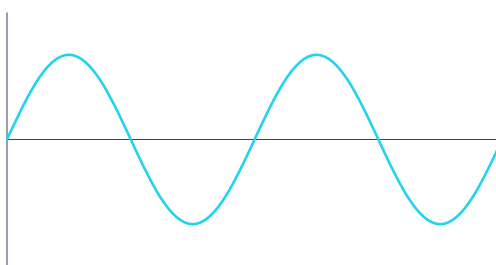
4 × 1 = 4

- 1 A wave has $f=8\text{Hz}$, $\lambda=5\text{m}$. Find speed.

- 2 A wave travels at 300 m/s with $\lambda=1.5\text{m}$. Find frequency.

- 3 A wave has period 0.02s . Find its frequency.

- 4 A wave has frequency 100Hz . Find its period.



A travelling wave: amplitude and wavelength



Section B • Problem Solving

• INTERMEDIATE

4 × 3 = 12

- 5 Do mechanical waves need a medium to travel through?

- 6 Do electromagnetic waves need a medium to travel through?

- 7 Is a water wave transverse, longitudinal, or a combination?

- 8 A wave has speed 15 m/s and frequency 3Hz . Find its wavelength.



9 Why doesn't a wave transport matter from one place to another (in an idealized sense)?

10 What are two examples of longitudinal waves?

Reflection — the most useful thing I learned: _____

A ___/4 B ___/12 C ___/4 **Total** ___/20

Teacher's Signature

Parent's Signature

✂ ANSWER KEY — FOLD OR CUT BEFORE HANDING OUT

1 = 40 m/s 2 = 200 Hz 3 = 50 Hz 4 = 0.01 s | 5 = Yes 6 = No, they can travel through vacuum
7 = Mostly transverse at the surface, though water particles actually move in circular orbits (a combination) 8 = 5 m | 9 = The medium's particles oscillate around fixed equilibrium positions, only passing energy along, not moving with the wave itself 10 = Any valid examples, e.g. sound waves and compression waves in a spring