# Year 10 Science: Transverse and longitudinal waves, sound and the EM spectrum

Name: _____ Date: _____

Try these without your notes first, then check the answer key.

## Practice

1. Say whether each is transverse or longitudinal: a ripple on a pond, a sound wave, a light wave, a slinky pushed in and out.

2. A dog whistle makes sound at 34,300 Hz in air at 343 m/s. Find the wavelength, and explain why people cannot hear it.

3. A whale call in seawater (1,500 m/s) has a wavelength of 3.0 m. What is its frequency?

4. Explain why you can hear a train coming through the rail before you hear it through the air.

5. Put these in order from longest to shortest wavelength: X-rays, radio, visible light, microwaves.

## Fix the mistake

6. Correct this statement: "Sound travels fastest in air, because there is less stuff in the way."

7. Correct this statement: "The echo returns after 0.80 s at 1,500 m/s, so the sea is 1,200 m deep."

8. Correct this statement: "A higher note travels faster than a low one."

9. Correct this statement: "A high-pitched sound is a loud sound."