



### Progressive Waves

#### Checklist statement

✓

I can describe oscillation of particles of a medium in a progressive wave.

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I can define amplitude, frequency, wavelength, wave speed, phase and phase difference.

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I can apply  $c = f\lambda$ , define all terms and know their standard units.

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I can apply  $f = \frac{1}{T}$ , define all terms and know their standard units.

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I can measure phase difference in radians, degrees or as a fraction of a cycle.

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### Longitudinal and Transverse Waves

#### Checklist statement

✓

I can describe the nature of longitudinal and transverse waves.

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I can give examples of longitudinal and transverse waves, including sound, electromagnetic waves and waves on a string.

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I can describe the direction of particle or field displacement relative to the direction of energy propagation.

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I can explain that all electromagnetic waves travel at the same speed in a vacuum.

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I can explain polarisation as evidence that a wave is transverse.

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I can describe applications of polarisers, including Polaroid material and aerial alignment for transmission and reception.

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## Superposition and Stationary Waves

### Checklist statement

✓

I can describe the principle of superposition of waves.

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I can describe stationary waves.

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I can identify nodes and antinodes on stationary waves on strings.

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I can explain how stationary waves are formed by two waves of the same frequency travelling in opposite directions.

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I can give a graphical explanation of the formation of stationary waves.

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I can describe stationary waves formed on strings, and those produced using microwaves and sound waves.

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I can describe stationary waves on strings in terms of harmonics.

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I can apply  $f = \frac{1}{2l} \sqrt{\frac{T}{\mu}}$  for the first harmonic, define all terms and know their standard units.

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I can describe a required practical investigating how the frequency of stationary waves on a string depends on length, tension and mass per unit length.

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