Waves: terms, v = fλ and wave graphs

- A wave transfers **energy** without transferring matter; particles vibrate about their rest position.
- **Wavelength** λ: distance between neighbouring crests. **Amplitude** A: maximum displacement from the rest position.
- **Frequency** f: number of complete waves per unit time (Hz). **Period** T: time for one complete wave (s).
- Displacement–**distance** graph → λ and A. Displacement–**time** graph → T and A.
- n wavefronts have (n − 1) gaps. Convert kHz and MHz to Hz first.

Formula card

$$v = f\lambda$$

wave speed = frequency × wavelength

$$f = \frac{1}{T}$$

$$\text{frequency} = \frac{1}{\text{period}}$$

$$\lambda = \frac{v}{f}$$

the same equation, rearranged