Waves

A-Level Physics · Vocabulary in context

Word	Example
progressive wave /prəˈgresɪv weɪv/	A **progressive wave** carries energy from one place to another.
wave /weɪv/	A **wave** moves across the water.
energy /ˈenədʒi/	Food gives your body the **energy** it needs to move.
frequency /ˈfriːkwənsi/	A **frequency** of 50 Hz means 50 waves every second.
phase difference /feɪz ˈdɪfrəns/	The two waves have a **phase difference** of half a cycle.
medium /ˈmiːdɪəm/	Sound needs a **medium**, such as air, to travel.
oscillate /ˈɒsɪleɪt/	The particles **oscillate** about a fixed point.
propagate /ˈprɒpəgeɪt/	Sound waves **propagate** through air.
transverse wave /træns'vɜːs weɪv/	Light is a **transverse wave**.
longitudinal wave /ˌlɒŋgɪˈtjuːdɪnl weɪv/	Sound is a **longitudinal wave**.
Wave motion /weɪv ˈməʊʃn/	**Wave motion** carries energy without carrying matter.
ripple tank /ˈrɪpl tæŋk/	We watch water waves in a **ripple tank**.
displacement /dɪˈspleɪsmənt/	After walking 3 km east, your **displacement** is 3 km east. 

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vector /'vektə/	Velocity is a **vector** because it has a direction.
amplitude /'æmplɪtju:d/	A loud sound has a large **amplitude**.
wavelength /'weɪvleŋθ/	The **wavelength** is the distance from one crest to the next.
in phase /ɪn feɪz/	The two points move up and down together: they are **in phase**.
crest /krest/	The **crest** is the top of the wave.
period /'pɪərɪəd/	The **period** of the wave is 0.02 s. 0.02 s
hertz /hɜ:ts/	One **hertz** means one wave every second.
speed /spi:d/	The bus moves at a **speed** of 15 m/s. 15 m/s
radian /'reɪdɪən/	One full turn is an angle of 2π **radians**. 2π
cathode-ray oscilloscope /'kæθəʊd reɪ ɒ'sɪləskəʊp/	A **cathode-ray oscilloscope** shows the wave on a screen.
time-base /taɪm beɪs/	The **time-base** sets the time for each square across the screen.
y-gain /waɪ geɪn/	The **y-gain** sets the voltage for each square up the screen.
intensity /ɪn'tensɪti/	The **intensity** of light is less far from the lamp.
power /'paʊə/	A 60 W lamp has a **power** of 60 watts. 60 W 60
• **point source** /pɔɪnt sɔ:s/	A small lamp acts as a **point source** of light.

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source /sɔːs/	The speaker is the **source** of the sound.
wavefront /ˈweɪvfrʌnt/	Each **wavefront** joins points on the same crest.
perpendicular /ˌpɜːpənˈdɪkjʊlə/	The wall is **perpendicular** to the floor.
electromagnetic wave /ɪˌlektrəʊməgˈnetɪk weɪv/	Light is an **electromagnetic wave**.
sine curve /saɪn kɜːv/	The graph of the wave is a **sine curve**.
compression /kəmˈpreʃn/	The **compression** of the spring is 3 cm. 3 cm
rarefaction /ˌreərɪˈfækʃn/	A **rarefaction** is where the air particles are far apart.
stationary /ˈsteɪʃənəri/	The car is **stationary** at the traffic lights.
vacuum /ˈvækjuːm/	There is no air in a **vacuum**, so sound cannot travel through it.
Doppler effect /ˈdɒplə ɪˈfekt/	The **Doppler effect** makes a passing car's sound change pitch.
observer /ɒbˈzɜːvə/	The **observer** hears a higher sound as the car comes closer.
electromagnetic spectrum /ɪˌlektrəʊməgˈnetɪk ˈspektrəm/	Radio waves and X-rays are both in the **electromagnetic spectrum**.
microwaves /ˈmaɪkrəʊweɪvz/	**Microwaves** heat food in a few minutes.
infrared /ˌɪnfrəˈred/	A TV remote uses **infrared** light.
ultraviolet /ˌʊltrəˈvaɪəlɪt/	**Ultraviolet** light from the Sun can burn your skin.

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Word	Example
X-rays /eks reɪz/	Doctors use **X-rays** to see broken bones.
polarisation /ˌpəʊləraɪˈzeɪʃn/	**Polarisation** shows that light is a transverse wave.
polarising filter /ˈpəʊləraɪzɪŋ ˈfɪltə/	**Polarising filter** sunglasses cut glare from water.
Malus's law /ˈmæləsɪz lɔː/	**Malus's law** tells us how much light passes through two filters.
plane-polarised /pleɪn ˈpəʊləraɪzd/	After the filter, the light is **plane-polarised**.
transmission axis /trænˈsmɪʃn ˈæksɪs/	Light passes through when it lines up with the filter's **transmission axis**.
γ**-rays** /ˈgæmə reɪz/	γ**-rays** come from the nucleus of an atom.
gamma-rays /ˈgæmə reɪz/	**Gamma-rays** can pass through thick metal.

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