Waves

IGCSE Physics · Vocabulary in context

Word	Example
wave /weɪv/	A **wave** moves across the water.
energy /'enədʒi/	Food gives your body the **energy** it needs to move.
ripple tank /'rɪpl tæŋk/	A **ripple tank** shows water waves.
wavefront /'weɪvfrʌnt/	Each **wavefront** joins points on the same crest.
wavelength /'weɪvleŋθ/	The **wavelength** is the distance from one crest to the next.
frequency /'fri:kwənsi/	A **frequency** of 50 Hz means 50 waves every second. 50 Hz 50
crest /krest/	The **crest** is the top of the wave.
peak /pi:k/	The wave's **peak** is its highest point.
trough /trɒf/	The **trough** is the lowest point of the wave.
amplitude /'æmplɪtju:d/	Loud sounds have a large **amplitude**.
wave speed /weɪv spi:d/	The **wave speed** is 340 m/s. 340 m/s
transverse wave /træns'vɜ:s weɪv/	Light is a **transverse wave**.
propagation /ˌprɒpə'geɪʃn/	Sound needs a material for its **propagation**.
longitudinal wave /ˌlɒŋgɪ'tju:dml weɪv/	Sound is a **longitudinal wave**.

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Word	Example
reflection /rɪ'flekʃn/	**Reflection** in a mirror lets you see yourself.
refraction /rɪ'frækʃn/	**Refraction** makes a straw look bent in water.
diffraction /dɪ'frækʃn/	**Diffraction** lets you hear sound around a corner.
light /laɪt/	A sensor measures the amount of **light** in a room.
normal /'nɔ:ml/	The **normal** is a line at 90° to the surface. 90°
angle of incidence /'æŋgl ɒv 'ɪnsɪdəns/	The **angle of incidence** is measured from the normal, not from the surface.
angle of reflection /'æŋgl ɒv rɪ'flekʃn/	The **angle of reflection** equals the angle of incidence.
plane mirror /pleɪn 'mɪrə/	A flat **plane mirror** forms a virtual, upright image the same size as the object.
angle of refraction /'æŋgl ɒv rɪ'frækʃn/	The **angle of refraction** is measured from the normal.
ray box /reɪ bɒks/	A **ray box** makes thin beams of light.
refractive index /rɪ'fræktɪv 'ɪndeks/	Glass has a **refractive index** of 1.5. 1.5
total internal reflection /'təʊtl ɪn'tɜ:nl rɪ'flekʃn/	**Total internal reflection** keeps light inside an optical fibre.
critical angle /'krɪtɪkl 'æŋgl/	The **critical angle** for glass is about 42°. 42°
optical fibre /'ɒptɪkl 'faɪbə/	An **optical fibre** carries internet data as light.

Word	Example
converging lens /kənˈvɜːdʒɪŋ lenz/	A **converging lens** brings light rays together.
principal focus /ˈprɪnsɪpl ˈfəʊkəs/	Parallel rays meet at the **principal focus**.
principal axis /ˈprɪnsɪpl ˈæksɪs/	A ray along the **principal axis** passes through the lens without bending.
focal length /ˈfəʊkl leŋθ/	A diverging lens has a negative **focal length**.
diverging lens /daɪˈvɜːdʒɪŋ lenz/	A **diverging lens** spreads light rays apart.
real image /rɪəl ˈɪmɪdʒ/	A **real image** can be shown on a screen.
virtual image /ˈvɜːtʃuːəl ˈɪmɪdʒ/	A **virtual image** cannot be shown on a screen.
magnifying glass /ˈmægnɪfaɪɪŋ glæs/	Hold a **magnifying glass** close to the page to make the words look bigger.
enlarged /enˈlɑːdʒd/	A magnifying glass gives an **enlarged** image.
diminished /dɪˈmɪnɪʃt/	A camera gives a **diminished** image: smaller than the object.
upright /ˈʌpraɪt/	A convex security mirror always gives an **upright** image.
inverted /ɪnˈvɜːtɪd/	The real image from one lens is **inverted**: it is upside down.
short-sightedness /ʃɔːt ˈsaɪtɪdnəs/	People with **short-sightedness** cannot see far objects clearly.
retina /ˈretɪnə/	The **retina** detects light.

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Word	Example
long-sightedness /lɒŋ ˈsaɪtɪdnəs/	People with **long-sightedness** cannot see near objects clearly.
prism /ˈprɪzəm/	A glass **prism** splits white light into colours.
spectrum /ˈspektrəm/	A prism splits light into a **spectrum**.
dispersion /dɪˈspɜːʃn/	**Dispersion** separates white light into a rainbow.
monochromatic /ˌmɒnəkrəʊˈmætɪk/	Laser light is **monochromatic**: it has one colour.
electromagnetic spectrum /ɪˌlektrəʊməgˈnetɪk ˈspektrəm/	Radio waves and X-rays are both in the **electromagnetic spectrum**.
vacuum /ˈvækjuːm/	There is no air in a **vacuum**, so sound cannot travel through it.
radio waves /ˈreɪdɪəʊ weɪvz/	**Radio waves** carry TV and radio signals.
microwave /ˈmaɪkrəʊweɪv/	A **microwave** can carry a signal to a satellite.
infrared /ˌɪnfrəˈred/	A TV remote uses **infrared** light.
ultraviolet /ˌʊltrəˈvaɪəlɪt/	**Ultraviolet** light from the Sun can burn your skin.
X-rays /eks reɪz/	Doctors use **X-rays** to see broken bones.
gamma rays /ˈgæmə reɪz/	**Gamma rays** kill cancer cells.
artificial satellites /ˌɑːtɪˈfɪʃl ˈsætəlaɪts/	**Artificial satellites** send TV signals and weather pictures.

Word	Example
low orbit /ləʊ ˈɔːbɪt/	A satellite in **low orbit** goes round the Earth in about 90 minutes. 90
geostationary orbit /ˌdʒiːəʊˈsteɪʃənəri ˈɔːbɪt/	A TV satellite is in **geostationary orbit**.
analogue /ˈænəlɒg/	An **analogue** signal changes smoothly.
digital /ˈdɪdʒɪtl/	A **digital** signal uses only 0 and 1. 0 1
sound /saʊnd/	**Sound** cannot travel through a vacuum.
compression /kəmˈpreʃn/	**Compression** makes the file smaller.
rarefaction /ˌreərɪˈfækʃn/	A **rarefaction** is where the air particles are far apart.
medium /ˈmiːdɪəm/	Sound needs a **medium**, such as air, to travel.
loudness /ˈlaʊdnəs/	A bigger amplitude gives more **loudness**.
pitch /pɪtʃ/	A higher frequency gives a higher **pitch**.
echo /ˈekəʊ/	We heard an **echo** from the cliff.
Ultrasound /ˌʊltrəˈsaʊnd/	**Ultrasound** scans show a baby in the womb.

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