Oscillations

A-Level Physics · Vocabulary in context

Word	Example
simple harmonic motion /ˈsɪmpl hɑːˈmɒnɪk ˈməʊʃn/	A mass on a spring moves with **simple harmonic motion**.
spring /sprɪŋ/	The **spring** stretches when you hang a mass on it.
pendulum /ˈpendjʊləm/	A **pendulum** swings back and forth.
acceleration /əkˌseləˈreɪʃn/	The car speeds up quickly, so its **acceleration** is large.
displacement /dɪˈspleɪsmənt/	After walking 3 km east, your **displacement** is 3 km east. 3 km 3 km
equilibrium /ˌiːkwɪˈlɪbrɪəm/	The book is in **equilibrium** because the forces balance.
angular frequency /ˈæŋgjʊlə ˈfriːkwənsi/	The **angular frequency** is 2π times the frequency. 2π
frequency /ˈfriːkwənsi/	A **frequency** of 50 Hz means 50 waves every second. 50 Hz 50
capacitor /kəˈpæsɪtə/	A **capacitor** stores charge.
amplitude /ˈæmplɪtjuːd/	A loud sound has a large **amplitude**.
period /ˈpɪərɪəd/	The **period** of the wave is 0.02 s. 0.02 s
phase difference /feɪz ˈdɪfrəns/	The two waves have a **phase difference** of half a cycle.
upthrust /ˈʌpθrʌst/	**Upthrust** from the water holds up a boat.

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velocity /vəˈlɒsɪti/	The ball's **velocity** is 5 m/s to the left. 5 m/s
kinetic energy /kɪˈnetɪk ˈenədʒi/	A fast car has a lot of **kinetic energy**.
damping /ˈdæmpɪŋ/	**Damping** makes the swing slowly stop.
conservation of energy /ˌkɒnsəˈveɪʃn ɒv ˈenədʒi/	**Conservation of energy** means energy is never made or destroyed.
air resistance /eə rɪˈzɪstəns/	**Air resistance** slows down a falling leaf.
friction /ˈfrɪkʃn/	**Friction** between the tyres and the road stops the car sliding.
drag /dræg/	**Drag** slows down a boat in the water.
light damping /laɪt ˈdæmpɪŋ/	With **light damping**, the swing dies away slowly.
natural frequency /ˈnætʃərəl ˈfriːkwənsi/	A swing has its own **natural frequency**.
critical damping /ˈkrɪtɪkl ˈdæmpɪŋ/	**Critical damping** stops the motion as fast as possible.
galvanometer /ˌgælvəˈnɒmɪtə/	The **galvanometer** shows zero when the circuit balances.
voltmeter /ˈvəʊltmiːtə/	Connect the **voltmeter** across the lamp.
heavy damping /ˈhevi ˈdæmpɪŋ/	With **heavy damping**, the mass returns very slowly.
forced oscillation /fɔːst ˌɒsɪˈleɪʃn/	Pushing a swing again and again makes a **forced oscillation**.

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Word	Example
resonance /ˈrezənəns/	**Resonance** makes the swing go very high.
driving frequency /ˈdraɪvɪŋ ˈfriːkwənsi/	The **driving frequency** is how often you push.
resonance curve /ˈrezənəns kɜːv/	The **resonance curve** has a peak at the natural frequency.

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