Oscillations

AP Physics 1 · Vocabulary in context

Word	Example
Simple harmonic motion /ˈsɪmpl hɑːˈmɒnɪk ˈməʊʃn/	**Simple harmonic motion** repeats back and forth, like a spring.
oscillation /ˌɒsɪˈleɪʃn/	A swing makes one **oscillation** every 3 s.
restoring force /rɪˈstɔːrɪŋ fɔːs/	The spring gives a **restoring force** towards the middle.
proportional /prəˈpɔːʃənl/	In simple harmonic motion, the force is **proportional** to the displacement.
displacement /dɪˈspleɪsmənt/	After walking 3 km east, your **displacement** is 3 km east. 
pendulum /ˈpendjʊləm/	A **pendulum** swings back and forth.
periodic motion /ˌpɪərɪˈɒdɪk ˈməʊʃn/	A swinging pendulum is an example of **periodic motion**.
period /ˈpɪərɪəd/	The **period** of the wave is 0.02 s. 
cycle /ˈsaɪkl/	One **cycle** brings the gas back to where it started.
frequency /ˈfriːkwənsi/	A **frequency** of 50 Hz means 50 waves every second.
hertz /hɜːts/	One **hertz** means one wave every second.
stiffness /ˈstɪfnəs/	A spring with high **stiffness** is hard to stretch.
sinusoidally	The position changes **sinusoidally**, like a sine wave.

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amplitude /ˈæmplɪtjuːd/	Loud sounds have a large **amplitude**.
angular frequency /ˈæŋgjʊlə ˈfriːkwənsi/	The **angular frequency** is 2π times the frequency.
equilibrium /ˌiːkwɪˈlɪbrɪəm/	The book is in **equilibrium** because the forces balance.
phase /feɪz/	Two pendulums in **phase** swing together.
kinetic energy /kɪˈnetɪk ˈenədʒi/	A fast car has a lot of **kinetic energy**.
potential energy /pəˈtenʃl ˈenədʒi/	Raising the box increases its gravitational **potential energy**.
turning points /ˈtɜːnɪŋ pɔɪnts/	At the **turning points**, the mass stops for an instant.
unstretched length	The spring's **unstretched length** is 10 cm.
origin /ˈɒrɪdʒɪn/	A straight line through the **origin** shows that two quantities are proportional.
gradient /ˈgreɪdɪənt/	The **gradient** of a distance-time graph gives the speed.
best-fit line /best fɪt laɪn/	Draw a **best-fit line** through the points.
reaction time /rɪˈækʃn taɪm/	Your **reaction time** is the delay before you press the stopwatch.
bob	The **bob** is the mass at the end of a pendulum.