Standing waves and resonance

International Baccalaureate · IB Diploma · Physics · HL · Vocabulary in context

Word	Example
standing wave /ˈstændɪŋ weɪv/	A guitar string makes a **standing wave**.
• **node** /nəʊd/	A **node** on the string does not move.
antinode /ˌæntɪˈnəʊd/	The string moves most at an **antinode**.
boundary condition /ˈbaʊndəri kənˈdɪʃn/	The **boundary condition** is that the fixed end does not move.
harmonic /hɑːˈmɒnɪk/	The second **harmonic** has twice the frequency of the first.
first harmonic /fɜːst hɑːˈmɒnɪk/	The **first harmonic** is the lowest note of the string.
natural frequency /ˈnætʃərəl ˈfriːkwənsi/	A swing has its own **natural frequency**.
driving frequency /ˈdraɪvɪŋ ˈfriːkwənsi/	The **driving frequency** is how often you push.
resonance /ˈrezənəns/	**Resonance** makes the swing go very high.
damping /ˈdæmpɪŋ/	**Damping** makes the swing slowly stop.
light damping /laɪt ˈdæmpɪŋ/	With **light damping**, the swing slowly gets smaller.
critical damping /ˈkrɪtɪkl ˈdæmpɪŋ/	**Critical damping** stops the motion as fast as possible.

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heavy damping /ˈhevi ˈdæmpɪŋ/	With **heavy damping**, the mass returns very slowly.