Gravitational fields

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

Word	Example
Kepler's laws	**Kepler's laws** describe how planets move round the Sun.
ellipse /ɪˈlɪps/	This **ellipse** is wider than it is tall.
focus /ˈfəʊkəs/	The Sun is at one **focus** of a planet's elliptical orbit.
• **point mass** /pɔɪnt mæs/	Treat the planet as a **point mass** at its centre.
Newton's universal law of gravitation	**Newton's universal law of gravitation** gives the pull between any two masses.
gravitational field /ˌgrævɪˈteɪʃənl fiːld/	The Earth's **gravitational field** pulls the Moon.
gravitational field strength /ˌgrævɪˈteɪʃənl fiːld streŋθ/	The **gravitational field strength** on Earth is 9.8 N/kg. 9.8 N/kg
field line /fiːld laɪn/	Each **field line** shows the direction of the force.
uniform field /ˈjuːnɪfɔːm fiːld/	In a **uniform field**, the field lines are parallel and evenly spaced.
orbit /ˈɔːbɪt/	The Moon's **orbit** takes about 27 days. 27
centripetal force /senˈtrɪpɪtl fɔːs/	The string gives the **centripetal force** to the spinning ball.
geostationary orbit /ˌdʒiːəʊˈsteɪʃənəri ˈɔːbɪt/	A TV satellite is in **geostationary orbit**.

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apparent weightlessness	Astronauts feel **apparent weightlessness** because they are falling freely.
gravitational potential energy /ˌgrævɪˈteɪʃənl pəˈtenʃl ˈenədʒi/	A rock on a cliff has **gravitational potential energy**.
gravitational potential /ˌgrævɪˈteɪʃənl pəˈtenʃl/	The **gravitational potential** is zero far from the Earth.
potential gradient /pəˈtenʃl ˈgreɪdɪənt/	The **potential gradient** gives the field strength.
equipotential surface /ˌiːkwɪpəˈtenʃl ˈsɜːfɪs/	On an **equipotential surface**, the potential is the same everywhere.
orbital speed /ˈɔːbɪtl spiːd/	The Moon's **orbital speed** is about 1 km/s. 1 km/s
escape speed	The Earth's **escape speed** is 11 km/s. 11 km/s
viscous drag	**Viscous drag** slows a ball falling through honey.

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