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 /ɪ'lɪps/	This **ellipse** is wider than it is tall.
focus /'fəʊkəs/	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 /ˌgrævɪ'teɪʃənl fiːld/	The Earth's **gravitational field** pulls the Moon.
gravitational field strength /ˌgrævɪ'teɪʃənl fiːld streŋθ/	The **gravitational field strength** on Earth is 9.8 N/kg. $9.8\ \mathrm{N/kg}$
field line /fiːld laɪn/	Each **field line** shows the direction of the force.
uniform field /'juːnɪfɔːm fiːld/	In a **uniform field**, the field lines are parallel and evenly spaced.
orbit /'ɔːbɪt/	The Moon's **orbit** takes about 27 days. 27
centripetal force /sen'trɪpɪtl fɔːs/	The string gives the **centripetal force** to the spinning ball.
geostationary orbit /ˌdʒiːəʊ'steɪʃənəri 'ɔːbɪt/	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 /ˌgrævɪ'teɪʃənl pə'tenʃl 'enədʒi/	A rock on a cliff has **gravitational potential energy**.
gravitational potential /ˌgrævɪ'teɪʃənl pə'tenʃl/	The **gravitational potential** is zero far from the Earth.
potential gradient /pə'tenʃl 'greɪdɪənt/	The **potential gradient** gives the field strength.
equipotential surface /ˌiːkwɪpə'tenʃl 'sɜːfɪs/	On an **equipotential surface**, the potential is the same everywhere.
orbital speed /'ɔːbɪtl spiːd/	The Moon's **orbital speed** is about 1 km/s. $1\ \mathrm{km/s}$
escape speed	The Earth's **escape speed** is 11 km/s. $11\ \mathrm{km/s}$
viscous drag	**Viscous drag** slows a ball falling through honey.