Gravitational fields

A-Level Physics · Vocabulary in context

Word	Example
gravitational field /ˌgrævɪˈteɪʃənl fiːld/	The Moon is in the Earth's **gravitational field**.
mass /mæs/	The **mass** of this bag of rice is 5 kg. 5 kg
force /fɔːs/	You use a **force** to push a door open.
gravitational field strength /ˌgrævɪˈteɪʃənl fiːld streŋθ/	The **gravitational field strength** on Earth is 9.81 N/kg. 9.81 N/kg
test mass /test mæs/	Put a small **test mass** in the field to measure it.
vector /ˈvektə/	Velocity is a **vector** because it has a direction.
field line /fiːld laɪn/	Each **field line** shows the direction of the force.
• **point mass** /pɔɪnt mæs/	Treat the planet as a **point mass** at its centre.
radial /ˈreɪdɪəl/	The field lines are **radial**: they point straight out from the centre.
uniform field /ˈjuːnɪfɔːm fiːld/	In a **uniform field**, the field lines are parallel and evenly spaced.
Newton's law of gravitation /ˈnjuːtnz lɔː ɒv ˌgrævɪˈteɪʃn/	**Newton's law of gravitation** gives the pull between two masses.
universal gravitational constant /ˌjuːnɪˈvɜːsl ˌgrævɪˈteɪʃənl ˈkɒnstənt/	G is the **universal gravitational constant**. G

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• **scalar** /ˈskeɪlə/	Mass is a **scalar** because it has no direction.
gravitational potential /ˌgrævɪˈteɪʃənl pəˈtenʃl/	The **gravitational potential** is zero far from the Earth.
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.
satellite /ˈsætəlaɪt/	The **satellite** goes round the Earth.
period /ˈpɪərɪəd/	The **period** of the wave is 0.02 s. 0.02 s
Kepler's third law /ˈkepləz θɜːd lɔː/	**Kepler's third law** links a planet's orbit time to its distance.
kinetic energy /kɪˈnetɪk ˈenədʒi/	A fast car has a lot of **kinetic energy**.
centre of mass /ˈsentə ɒv mæs/	The **centre of mass** of a ruler is in its middle.
geostationary /ˌdʒiːəʊˈsteɪʃənəri/	A **geostationary** satellite stays above the same place.
equator /ɪˈkweɪtə/	The **equator** goes round the middle of the Earth.
angular speed /ˈæŋgjʊlə spiːd/	The wheel turns with an **angular speed** of 2 radians per second. 2
infinity /ɪnˈfɪnɪti/	Far away, at **infinity**, the field is zero.
gravitational potential energy /ˌgrævɪˈteɪʃənl pəˈtenʃl ˈenədʒi/	A book on a high shelf has more **gravitational potential energy**.

Word	Example
escape velocity /ɛ'skeɪp və'lɒsɪti/	A rocket needs the **escape velocity** to leave the Earth.

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