Dynamics

A-Level Physics · Vocabulary in context

Word	Example
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.
acceleration /əkˌselə'reɪʃn/	The car speeds up quickly, so its **acceleration** is large.
scalar /'skeɪlə/	Mass is a **scalar** because it has no direction.
linear momentum /'lɪnɪə məʊ'mentəm/	**Linear momentum** is mass times velocity.
velocity /və'lɒsɪti/	The ball's **velocity** is 5 m/s to the left. 5 m/s
vector /'vektə/	Velocity is a **vector** because it has a direction.
resultant force /rɪ'zʌltənt fɔːs/	If the **resultant force** is zero, the speed does not change.
impulse /'ɪmpʌls/	A kick gives the ball an **impulse**.
collision /kə'lɪʒn/	Two cars stopped after a **collision**.
kinetic energy /kɪ'netɪk 'enədʒi/	A fast car has a lot of **kinetic energy**.
driving force /'draɪvɪŋ fɔːs/	The engine gives the car a **driving force**.
drag /dræg/	**Drag** slows down a boat in the water.
thrust /θrʌst/	The rocket engine gives an upward **thrust**.

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external force /ek'stɜːnl fɔːs/	No **external force** acts, so the total momentum stays the same.
friction /'frɪkʃn/	**Friction** between the tyres and the road stops the car sliding.
weight /weɪt/	Your **weight** is the pull of the Earth on you.
normal contact force /'nɔːml 'kɒntækt fɔːs/	The table pushes up on the book with a **normal contact force**.
electrostatic /ɪˌlektrəʊ'stætɪk/	Two charged balls push apart with an **electrostatic** force.
gravitational field /ˌgrævɪ'teɪʃənl fiːld/	The Moon is in the Earth's **gravitational field**.
terminal velocity /'tɜːmɪnl və'lɒsɪti/	A skydiver falling at a steady speed has reached **terminal velocity**.
viscous /'vɪskəs/	Honey is more **viscous** than water: it flows slowly.
fluid /'fluːɪd/	Air and water are both a **fluid**.
coefficient /ˌkəʊɪ'fɪʃənt/	The number in front of the letter is the **coefficient**.
viscosity /vɪ'skɒsɪti/	Oil has a higher **viscosity** than water.
cross-sectional area /krɒs 'sekʃənl 'eərɪə/	A thick wire has a large **cross-sectional area**.
thermal energy /'θɜːml 'enədʒi/	Rubbing your hands turns work into **thermal energy**.

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uniform gravitational field /ˈjuːnɪfɔːm ˌgrævɪˈteɪʃənl fiːld/	Near the ground, the Earth's field is a **uniform gravitational field**.
upthrust /ˈʌpθrʌst/	**Upthrust** from the water holds up a boat.
hydrostatic pressure /ˌhaɪdrəˈstætɪk ˈpreʃə/	**Hydrostatic pressure** gets larger as you dive deeper.
parachutist /ˈpærətʃuːtɪst/	A **parachutist** falls slowly after the parachute opens.
gravitational potential energy /ˌgrævɪˈteɪʃənl pəˈtenʃl ˈenədʒi/	A book on a high shelf has more **gravitational potential energy**.
power /ˈpaʊə/	A 60 W lamp has a **power** of 60 watts. 60 W 60
component /kəmˈpəʊnənt/	Find the vertical **component** of the ball's velocity.
perpendicular /ˌpɜːpənˈdɪkjʊlə/	The wall is **perpendicular** to the floor.
conservation of momentum /ˌkɒnsəˈveɪʃn ɒv məʊˈmentəm/	**Conservation of momentum** means the total momentum stays the same.
explosion /ekˈspləʊʒn/	In an **explosion**, the pieces fly apart in opposite directions.
recoil /rɪˈkɔɪl/	A gun moves back when it fires; we call this **recoil**.
inelastic collision /ɪnɪˈlæstɪk kəˈlɪʒn/	Two cars that stick together have an **inelastic collision**.
elastic collision /ɪˈlæstɪk kəˈlɪʒn/	In an **elastic collision**, no kinetic energy is lost.

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relative speed /ˈrelətɪv spiːd/	Two cars at 20 m/s and 30 m/s in opposite directions have a **relative speed** of 50 m/s. 20 m/s 30 m/s 50 m/s
deformation /ˌdiːfɔːˈmeɪʃn/	The dent in the car is a **deformation**.
head-on /hed ɒn/	The two balls meet in a **head-on** collision.
stationary /ˈsteɪʃənəri/	The car is **stationary** at the traffic lights.
alpha particle /ˈælfə ˈpɑːtɪkl/	An **alpha particle** has two protons and two neutrons.
mass-flow rate /mæs fləʊ reɪt/	The **mass-flow rate** is 2 kg of water every second. 2 kg