Forces and momentum

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

Word	Example
force /fɔːs/	You use a **force** to push a door open.
interaction /ˌɪntəˈrækʃn/	Every force comes from an **interaction** between two objects.
inertia /ɪˈnɜːʃə/	**Inertia** keeps you moving forward when a bus stops suddenly.
free-body diagram /friː ˈbɒdi ˈdaɪəgræm/	Draw a **free-body diagram** with an arrow for each force.
resultant force /rɪˈzʌltənt fɔːs/	If the **resultant force** is zero, the speed does not change.
translational equilibrium /trænˈsleɪʃənl ˌiːkwɪˈlɪbrɪəm/	A car at a steady speed is in **translational equilibrium**.
static friction /ˈstætɪk ˈfrɪkʃn/	**Static friction** stops a parked car from sliding down a hill.
dynamic friction	**Dynamic friction** slows a sliding box.
spring constant /sprɪŋ ˈkɒnstənt/	A stiff spring has a large **spring constant**.
Stokes' law /stəʊks lɔː/	**Stokes' law** gives the drag on a small ball falling through oil.
viscosity /vɪˈskɒsɪti/	Oil has a higher **viscosity** than water.
buoyancy /ˈbɔɪənsi/	**Buoyancy** helps a ship float.

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momentum /məʊˈmentəm/	A heavy truck has a lot of **momentum**.
conservation of momentum /ˌkɒnsəˈveɪʃn ɒv məʊˈmentəm/	**Conservation of momentum** means the total momentum stays the same.
impulse /ˈɪmpʌls/	A kick gives the ball an **impulse**.
elastic collision /ɪˈlæstɪk kəˈlɪʒn/	In an **elastic collision**, no kinetic energy is lost.
inelastic collision /ɪnɪˈlæstɪk kəˈlɪʒn/	Two cars that stick together have an **inelastic collision**.
explosion /ekˈspləʊʒn/	In an **explosion**, the pieces fly apart in opposite directions.
period /ˈpɪərɪəd/	The **period** of the wave is 0.02 s. 0.02 s
angular velocity /ˈæŋgjʊlə vəˈlɒsɪti/	The wheel turns with an **angular velocity** of 3 rad/s. 3 rad/s
centripetal acceleration /senˈtrɪpɪtl əkˌseləˈreɪʃn/	A car turning a corner has a **centripetal acceleration**.
centripetal force /senˈtrɪpɪtl fɔːs/	The string gives the **centripetal force** to the spinning ball.