Work, Energy, and Power

AP Physics 1 · Vocabulary in context

Word	Example
Energy /'enədʒi/	**Energy** can change from one form to another.
joules /dʒu:lz/	A 3 W lamp uses 360 **joules** in two minutes. 3 W 360
kinetic energy /kɪ'netɪk 'enədʒi/	A fast car has a lot of **kinetic energy**.
scalar /'skeɪlə/	Mass is a **scalar** because it has no direction.
stopping distance	Faster cars have a longer **stopping distance**.
interaction /ˌɪntə'rækʃn/	Every force comes from an **interaction** between two objects.
Work /wɜ:k/	**Work** is force times distance.
displacement /dɪ'spleɪsmənt/	After walking 3 km east, your **displacement** is 3 km east. 3 km 3 km
perpendicular /ˌpɜ:pən'dɪkjələ/	The wall is **perpendicular** to the floor.
work–energy theorem /wɜ:k 'enədʒi 'θɪərəm/	The **work–energy theorem** says work changes kinetic energy.
frictionless /'frɪkʃənləs/	A **frictionless** surface has no friction.
Potential energy /pə'tenʃl 'enədʒi/	**Potential energy** is stored energy.
Gravitational potential energy /ˌgrævɪ'teɪʃənl pə'tenʃl 'enədʒi/	**Gravitational potential energy** is mgh. mgh

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reference level	Choose a **reference level** where height is zero.
Elastic potential energy /ɪ'læstɪk pə'tenʃl 'enədʒi/	**Elastic potential energy** is stored in a stretched spring.
conservative forces /kən'sɜ:vətɪv 'fɔ:sɪz/	Gravity and spring forces are **conservative forces**.
closed path	Around a **closed path**, a conservative force does no work.
satellite /'sætəlaɪt/	The **satellite** goes round the Earth.
escape speed	The Earth's **escape speed** is 11 km/s. 11 km/s
total mechanical energy /'təʊtl mɪ'kænɪkl 'enədʒi/	**Total mechanical energy** is kinetic plus potential energy.
conserved /kən'sɜ:vd/	Energy is **conserved**: the total stays the same.
friction /'frɪkʃn/	**Friction** between the tyres and the road stops the car sliding.
thermal energy /'θɜ:ml 'enədʒi/	Rubbing your hands turns work into **thermal energy**.
non-conservative force	Friction is a **non-conservative force**.
energy bar chart	An **energy bar chart** shows energy at the start and end.
system /'sɪstəm/	A pond is a **system** with water, plants and animals.
internal force /ɪn'tɜ:nl fɔ:s/	An **internal force** acts inside the system.

Word	Example
normal force /ˈnɔːml fɔːs/	The **normal force** acts perpendicular to the contact surface.
Power /ˈpaʊə/	**Power** is energy per second.
watts /wɒts/	The lamp uses three **watts** of power.
slope /sləʊp/	A steeper line has a larger **slope**.
efficiency /ɪˈfɪʃənsi/	A lamp with 20% **efficiency** turns only a fifth of its energy into light.
air resistance /eə rɪˈzɪstəns/	**Air resistance** slows down a falling leaf.
centripetal force /senˈtrɪpɪtl fɔːs/	The string gives the **centripetal force** to the spinning ball.

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