

AQA Chapter 1 Checklist 2017 (Triple)

Can you...?			
Chapter 1: Energy and energy resources			
Describe ways in which energy can be stored.			
Describe how energy can be transferred.			
Describe the energy transfers that happen when an object falls.			
Describe the energy transfers that happen when a falling object hits the ground without bouncing back.			
Describe what conservation of energy is.			
Explain why conservation of energy is a very important idea.			
Describe what a closed system is.			
Describe energy transfers in a closed system.			
Describe what work means in science.			
Describe how work and energy are related.			
Calculate the work done by a force.			
Describe what happens to work that is done to overcome friction.			
Describe what happens to the gravitational potential energy store of an object when it moves up and down.			
I can explain why an object moving up increases its gravitational potential energy store.			
Explain why it is easier to lift an object on the Moon rather than on Earth.			
Calculate the change in gravitational potential energy of an object when it moves up and down.			
Write down what the kinetic energy of an object depends on.			
Calculate kinetic energy.			
Describe what an elastic potential energy store is.			
Calculate the amount of energy in an elastic potential energy store.			
Describe what is meant by useful energy.			
Describe what is meant by wasted energy.			
Describe what eventually happens to wasted energy.			
Describe if energy is still as useful after it is used.			
Describe what is meant by efficiency.			
Write down the maximum efficiency of any energy transfer.			
Describe how machines waste energy.			
Describe how energy is supplied to our homes.			
Explain why electrical appliances are useful.			
Describe what most everyday electrical appliances are used for.			
Explain how to choose an electrical appliance for a particular job.			
Describe what is meant by power.			
I can calculate the power of an appliance.			
Calculate the efficiency of an appliance in terms of power.			

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Calculate the power wasted by an appliance.			
Chapter 1: Equations I need to know.			
Work done (W) = force applied (F) x distance (s) (joules, J) (newtons, N) (metres, M)			
Change in GPE store(ΔE_p) = mass (m) x gravitational field strength (g) x change in height (Δh) (joules, J) (kg) (N/kg) (m)			
Kinetic energy (E_k) = $\frac{1}{2}$ x mass (m) x speed² (v^2) (joules, J) (kg) (m/s ²)			
efficiency = $\frac{\text{useful output energy transferred by the device (J)}}{\text{total input energy transferred to the device (J)}}$			
Power (P) (watts, W) = $\frac{\text{energy transferred to appliance (E) (joules, J)}}{\text{time taken for energy to be transferred (t) (seconds, s)}}$			
efficiency = $\frac{\text{useful power out}}{\text{total power in}}$ (x 100)			
Chapter 1: Equations I am given and need to use.			
elastic potential energy (E_e) = $0.5 \times \text{spring constant (k)} \times \text{extension}^2 (e^2)$ (joules, J) (N/m) (m)			
Chapter 1: Key words I need to know			
Atomic/nuclear energy: <i>a term used to describe energy when it is stored inside atoms. It is another name for nuclear energy.</i>			
Chemical energy: <i>a term used to describe energy when it is stored in chemical substances. Food, fuel and batteries all store chemical energy.</i>			
Dissipated: <i>spread out.</i>			
Efficiency: <i>the proportion of input energy that is transferred to a useful form.</i>			

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<i>A more efficient machine wastes less energy.</i>			
Elastic potential energy/strain energy: <i>a name used to describe energy when it is stored in stretched or squashed things that can stretch back to their original shape. Another name for 'strain energy'.</i>			
Energy: <i>something that is needed to make things happen or change.</i>			
joules (J): <i>a unit for measuring energy.</i>			
Kinetic energy: <i>a term used to describe energy when it is stored in moving things.</i>			
Law of conservation of energy: <i>the idea that energy can never be created or destroyed, only transferred from one form to another.</i>			
Power: <i>the amount (rate) of energy transferred per second. The units are watts (W).</i>			
System: <i>a set of things being studied. For example, a kettle, the water in it and its surroundings form a simple system.</i>			
Thermal energy: <i>a term used to describe energy when it is stored in hot objects. The hotter something is, the more thermal energy it has. Sometimes called 'heat energy'.</i>			
Useful energy: <i>energy transferred to where it is wanted in the way that is wanted.</i>			
Wasted energy: <i>energy that is not usefully transferred.</i>			
watts (W): <i>the unit for measuring power. 1 watt = 1 joule of energy transferred every second.</i>			
Work: <i>the energy transferred by a force. Work done (joules, J) = force (newtons, N) x distance moved in the direction of the force (metres, m).</i>			
Work done: <i>a measure of the energy transferred when a force acts through a distance.</i>			