

P1 - Energy	Changes in energy
What is kinetic energy?	The energy of a moving object
What is the equation for kinetic energy?	$E_k = 0.5mv^2$ Kinetic energy = 0.5 x mass x velocity squared Velocity is speed
What are the units involved in kinetic energy?	Kinetic energy = Joules J Mass = kilograms kg Speed = metres per second m/s
What is elastic potential energy?	The energy stored in a stretched spring
What is the equation for elastic potential energy?	$E_e = 0.5ke^2$ Elastic potential energy = 0.5 x spring constant x extension squared
What are the units involved in elastic potential energy?	Energy = joules J Spring constant = newtons per metre N/m Extension = metres m
What is gravitational potential energy?	Energy gained by an object raised above ground level
What is the equation for gravitational potential energy?	$E_p = mgh$ Gravitational potential energy = mass x gravitation field strength x height
What are the units involved in gravitational potential energy?	Energy = joules J Mass = kilograms kg Gravitational field strength = newtons per kilogram N/kg Height = metres m

6.1.1.3	Energy changes in systems
How can the energy stored or released from a system as temperature changes be calculated?	$\Delta E = m c \Delta\theta$ Change in thermal energy = mass x specific heat capacity x change in temperature
What are the units involved in this calculation?	Change in thermal energy = Joules J Mass = kilograms kg Specific heat capacity = joules per kilogram per degree Celsius J/kg°C Change in temperature = degrees Celsius °C
What is the specific heat capacity of a substance?	It is the amount of energy required to raise the temperature of one kilogram of the substance by one degree Celsius
6.1.1.4	Power
What is the definition of power?	The rate at which energy is transferred OR the rate at which work is done.
What is the equation for power?	$P = \frac{E}{t}$ Power = energy ÷ time
What are the units involved in the power calculation?	Power = watts W Energy = joules J Time = seconds s
What is 1 watt equal to?	An energy transfer of 1 joule per second
Give an example that can define power	Two electric motors both lift the same weight through the same height but one goes faster so it uses more power.