Year 7 – Spring 2

The Law of Conservation of Mass	
The law of conservation of mass states that…	…energy cannot be created or destroyed, only transferred from one form to another.

Energy transfer diagrams show energy being transferred from one form into another.

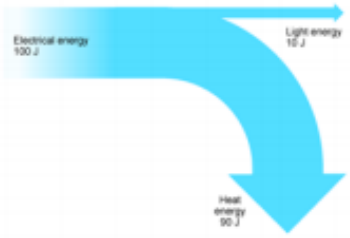
Type of Energy	Description
Kinetic Energy	The energy transferred by a moving object (e.g. a car).
Sound Energy	Energy transferred within a sound wave.
Thermal Energy	Energy transferred as heat (e.g. a cup of tea gives out thermal energy)
Light Energy	Energy transferred as a light wave.
Electrical Energy	The energy transferred by electrons in an electrical circuit.
Elastic Potential	The energy stored in a stretched elastic object (e.g. an elastic band).
Gravitational Potential (GPE)	The energy stored in an object that has been moved upwards in a gravitational field (e.g. a rock on a mountain).
Chemical Potential	The energy stored within chemical bonds (e.g. food/fuels).

Renewable Energy Sources	Non-Renewable Energy Sources
(e.g. wind, solar, hydroelectric power). Unlimited – supplies will never run out.	(e.g. fossil fuels – oil, coal and gas). Supplies of these fuels will eventually run out.

Insulators are…	…materials that prevent thermal energy loss (they're poor thermal conductors). (e.g. plastics).
Conductors are…	…materials which transmit thermal energy from one place to another very quickly (e.g. metals).

Conduction	The movement of thermal energy (heat) along a substance through the vibration of particles. It happens only in solids.
Convection	When thermal energy moves from one place to another, through the movement of heated particles. Convection can only happen in liquids and gases
Radiation	The transfer of thermal energy via infrared waves (not particles).

Efficiency	Power
A device is **efficient** if most of the energy that it put into it is transferred as useful energy and as little as possible is wasted. **Efficiency = (useful energy output ÷ total energy input) x 100**	**Power** is defined as the rate at which energy is transferred, or the rate at which work is done. **Power (W) = work done (J) ÷ time (s)** **Power (W) = energy transferred (J) ÷ time (s)**



Sankey diagrams show…	…the energy transfers which occur in an appliance (e.g. a lightbulb).
The input energy describes…	…the total amount of energy going into the device.
The useful output energy always…	…goes straight across the top.
The arrow going down shows…	…the wasted output energy.
The width of the arrow is…	…proportional to the amount of energy.