Knowledge organiser

Big idea:

Y7 topic: energy intro

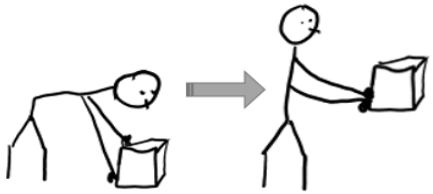
Describing energy

Energy is the amount of change that can happen

(but it is a force that causes the change)

Energy is measured in joules, J

Energy cannot be created or destroyed



They use a **force** to lift the box **(causes change)**

Some **energy** was needed. **(amount of change)**

Energy stores

Energy store	Definition
chemical energy store	The amount of energy stored in objects. This energy can be released after chemical reactions. For example : food, batteries and fuel
elastic potential energy store	The amount of energy stored in an object that has been stretched or compressed. For example : springs, elastic bands
gravitational potential energy store	The amount of energy stored in an object that has been raised off the ground.
kinetic energy store	The amount of energy stored in a moving object.
thermal energy store	The amount of energy in warm or hot objects

Energy transfers

Energy transfer	Definition
light energy	The energy that travels as light
sound energy	The energy that travels as sound
Electrical energy	The energy that travels as electricity
thermal energy	The energy that travels as heat

Conservation of energy

We say that energy cannot be created or destroyed.

The amount of energy we start will always be the same as the energy we finish with.

For example :
A ball with 20 J of gravitational potential energy falls and just before it hits the ground it will have 20 J of kinetic energy

Changes due to energy transfers

Some energy is not stored within an object, but instead travels. These are called energy transfers.

We say the energy is transferred as… light or sound etc

Burning fuels

Fuels are chemical stores of energy that are burnt to release thermal energy.

For example:
Coal, oil, natural gas, petrol, wood ….

Changes to energy stores

Identify the start energy store and the end energy store (or stores)

Then describe the start energy store as decreasing and the end energy store (or stores) as increasing

Calculating amount of energy

Energy store	Equation
gravitational potential energy	Gravitational potential energy = mass x gravitational field strength x height

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Y7 topic: energy intro

I have already learned:

In KS2: not in KS2 curriculum.

This topic links to:
Y7 Energy at home
Y8 electrical energy; Y8 thermal energy

KS4 P1 energy; P2 electricity; P3 particle model; P4 atoms and radiation; P5 forces; P6 waves; P7 magnets

It is important to study about energy because…
Energy is the amount of change that can happen. To understand any change we need to understand the amount of energy involved and the energy changes. Examples of changes are lifting , speaking, switching lights on, boiling kettles, any change really.

Possible careers involving energy are…