

State whether these are stores or pathways

- Kinetic _____
- Thermal _____
- Mechanically _____
- Electrically _____
- Chemical _____
- Gravitational _____
- Elastic _____
- Electrostatic _____
- Heating _____
- Magnetic _____
- Radiation _____
- Nuclear _____

Energy Transfers - Describe the energy transfers when

A ball rolls up a slope

A rock is dropped from a cliff

A car slows down

A kettle boils water

Define

Conduction

Convection

Infrared radiation

Edexcel Physics (2016 9 - 1) Topic 3

What is the formula for gravitational potential energy?

What is the formula for kinetic energy?

What is the law of conservation?

Define efficiency

What is the formula for efficiency?

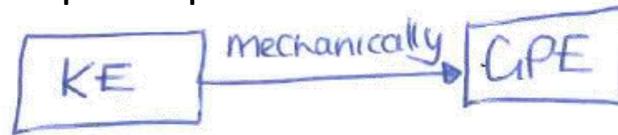
Energy Resource	Advantage	Disadvantage
Fossil Fuels		
Biofuels		
Wind Power		
Solar cells		
Hydroelectricity		
Tidal barrage		

State whether these are stores or pathways

Kinetic	Store
Thermal	Store
Mechanically	Pathway
Electrically	Pathway
Chemical	Store
Gravitational	Store
Elastic	Store
Electrostatic	Store
Heating	Pathway
Magnetic	Store
Radiation	Pathway
Nuclear	Store

Energy Transfers - Describe the energy transfers when

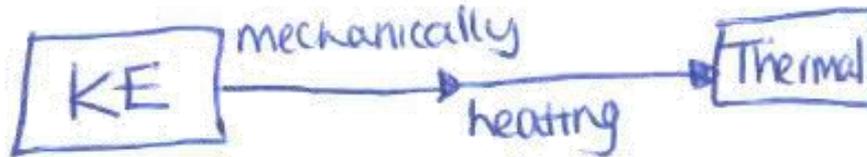
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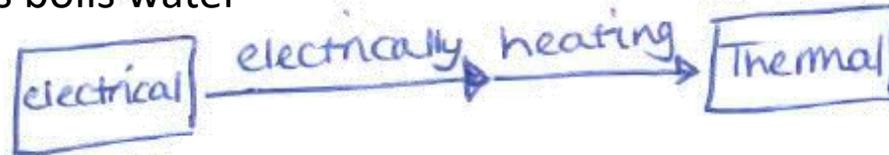
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A kettle boils water



Define

Conduction

**Energy is transferred through solids by heating.
Vibrations are passed from particle to particle.**

Convection

**The movement of particles in a fluid depending on
their temperature.**

Infrared radiation

**The transfer of thermal energy by electromagnetic
waves.**

What is the formula for gravitational potential energy?

$$\Delta GPE = mgh$$

What is the formula for kinetic energy?

$$KE = \frac{1}{2} mv^2$$

What is the law of conservation?

Energy cannot be created or destroyed

Define efficiency

How much of the total energy input is transferred usefully.

What is the formula for efficiency?

$$\text{efficiency} = \frac{\text{useful energy output}}{\text{total energy input}}$$

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Biofuels		
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Solar cells		
Hydroelectricity		
Tidal barrage		

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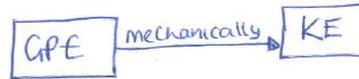
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Thermal	Store
Mechanically	Pathway
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Radiation	Pathway
Nuclear	Store

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Energy Resource	Advantage	Disadvantage
Fossil Fuels	<ul style="list-style-type: none"> Quick response to change in demand Cheap to extract 	<ul style="list-style-type: none"> Release CO₂ Non-renewable
Biofuels	<ul style="list-style-type: none"> Renewable Carbon neutral 	<ul style="list-style-type: none"> High refinery costs Loss of habitat
Wind Power	<ul style="list-style-type: none"> Renewable Low running costs 	<ul style="list-style-type: none"> Noise and visual pollution Only work when it's windy
Solar cells	<ul style="list-style-type: none"> Renewable No running costs 	<ul style="list-style-type: none"> Only works when sunny High initial costs
Hydroelectricity	<ul style="list-style-type: none"> Renewable Immediate response 	<ul style="list-style-type: none"> Flooding/habitat damage Expensive to install
Tidal barrage	<ul style="list-style-type: none"> Renewable Reliable (twice a day) 	<ul style="list-style-type: none"> Damage to habitats Affect boat access