

Learning checklist Energy 1

Level 4

- I can use words like kinetic, potential and chemical in my explanations.
- I can give examples of how energy goes to waste.
- I can describe the energy transfers in some devices.
- I know that fuels release energy when they are burnt.
- I can give some examples of how to save fuels.
- I can build some simple circuits and draw them using circuit diagrams.
- I can use the terms current, voltage and resistance in my explanations.
- I know how to measure the current in a circuit.
- I know the effect on the brightness of bulbs of connecting them in series.
- I can build series circuits and draw them as circuit diagrams.
- I know how current flows in series and parallel circuits.
- I know what type of fuels are used in power stations.
- I can classify some renewable and non-renewable resources
- I can give some examples of common temperatures on the Celsius scale.

Level 5

- I know that energy can be stored in various forms.
- I can draw circuit diagrams of parallel circuits.
- I know how to measure the voltage in a circuit.
- I can link the number of cells in a circuit to energy transfers in circuits
- I can describe how electricity is generated using fuels and describe some of the possible environmental effects.
- I can describe how renewable energy resources can be used to generate electricity and provide heating.
- I can describe how insulators can reduce heat loss.
- I can describe conduction, convection and radiation

Level 6

- I can explain a variety of energy transfers.
- I can use a model to show energy conservation (e.g. Sankey diagram).
- I can describe the current in a parallel circuit.
- I understand the effect on the current of connecting bulbs in parallel.
- I know that the voltage change across part of a circuit is a measure of its energy transfer.
- I can compare the advantages and disadvantages of a range of energy resources.
- I can describe how temperature difference leads to a flow of energy.
- I can use the particle model to explain conduction and convection

Level 7

- I can explain some of the problems associated with burning fossil fuels to generate electricity.
- I can describe how the current in various parts of a parallel circuit is affected by the resistance of the components.
- I can apply different models of voltage and energy changes to a circuit.
- I can describe some of the issues associated with using nuclear power
- I can use my ideas about heat transfer to explain the use of conductors and insulators in a range of situations.
- I can use my ideas about energy to explain heat transfer by radiation.

Level 8

- I can explain the advantages and disadvantages of using fossil fuels to generate electricity.
- I can explain, using the idea of energy transfer, the effect of adding more components to a circuit.
- I can explain the relationship between voltage and energy transfer.
- I can describe some of the social, economic and environmental issues arising from our continued reliance on fossil fuels.
- I can describe some of the issues associated with using nuclear power.

