

Lesson Plan

'Fuel Poverty and Energy Efficiency'



Overview of session

Through this session, pupils will develop an understanding of fuel poverty, how it affects people and practical tips for being energy efficient.

Target KS2 9-11yrs

Through the KS1 national curriculum, pupils will already be able to identify everyday objects that use electricity. They will also have some understanding of different fuel sources and how energy is generated. Some links to additional/supporting resources have been provided to help check/improve pupils' understanding.

Session Lead	Teacher	Required equipment	AV - Computer / Projector - Yes
Ideal room layout	N/A	Required equipment	AV - Sound - Yes if accessing videos
Session Length	1 Hour	Resources used	Powerpoint (provided) Household profiles

Learning Outcomes

- Highlight the issue of fuel poverty
- Consolidate pupils' learning through a practical budgeting exercise.
- Increase pupils' awareness of how they can become more energy efficient

Links to additional/supporting resources

- **Northern Powergrid – Fusebox** – How Electricity Gets to Your Home (interactive flow diagram)
- **Northern Powergrid** – Saving Energy (webpage)
- **BBC Bitesize** – Different ways energy is generated (videos)
- **BBC Bitesize** – Protecting our Environment by Conserving Energy (video - 05:18)
- **BP Educational Service** – Saving Energy online experiment (interactive game)
- **Co-op** – Energy Board Game – (print off board game with energy saving prompts)

Extension Activity

- Match the Household Appliances worksheet



5 mins

What is fuel and why do we need it?

- Do you know what fuel is? Fuel makes energy which is used to help power things we use in many areas of everyday life.
- Do you know where fuel comes from? Coal, gas and oil are types of fuel. Coal and gas come from the ground and oil comes from the land and sea.
- Why do we need fuel? Fuel is used to power many things that we use in our day to day lives and is turned into electricity to power many of the appliances in our homes.
- What household objects/appliances can you think of that need fuel to work?

Resources required

Powerpoint





5 mins

What is fuel poverty?

- Do pupils know what fuel poverty is?
A fuel poor household is one which needs to spend more than 10% of its income on all fuel use and to heat its home to an adequate standard of warmth. In England, this is defined as 21°C in the living room and 18°C in other occupied rooms.
- There are three factors which contribute to fuel poverty. Can pupils think of what these might be?
 - > The cost of energy – electricity and gas can be more expensive in some places depending on where you live
 - > The energy efficiency of the property (and therefore, the energy required to heat and power the home) – some homes might be less energy efficient if they are old and don't have very good insulation.
 - > Household income – the combined income of all people in one home. This is generally wages/salary from working but might also include benefits and pensions.

Resources required

Powerpoint



5 mins

What are the effects of fuel poverty?

- Can pupils think of what the effects might be if a household is fuel poor? Prompt them to not just think about effects on health, but also emotional, social, school, work etc.
 - > poor health brought on by cold
 - > existing health conditions worsened by cold
 - > struggling to perform at work/school etc
 - > impact on emotional and mental health
 - > people who are older and weaker due to existing health issues might die
 - > 'heat or eat' – people in this situation often find themselves choosing between 'heating' or 'eating' i.e. sacrificing food budget to heat their home or not heating their home to be able to eat

Resources required

Powerpoint



20 mins

Understanding fuel poverty

Pupils to work in groups and each group given a budget for 3 main outgoings (some brief explanation may be required as to what these are and general/average costs):

- Mortgage
- Food
- Utility bills (this covers heating)

The groups must act as a household to decide how they will split the budget across the 3 main outgoings.

Once this task is completed, inform the class that they've just received an unexpected large bill in the post for e.g. £100. They must now work in their groups to re-budget and decide where to make cut backs. Once the groups have re-budgeted, ask the class to feedback.

- Where did the pupils decide to cut back?
- Did the pupils find it hard to re-budget?
- What are the consequences that might occur because of pupils' choices? E.g. going hungry, repossession if they don't pay the mortgage, becoming ill if they choose to sacrifice heating.
- Did pupils understand that some expenses can't be as easily cut back or out e.g. mortgage?
- Can pupils think of a situation when they have had to budget or re-budget to afford something – maybe saving up for a game?

Resources required

Pens Paper
(for calculation)





15 mins

Energy Efficiency

- Do pupils know what it means to be energy efficient?
Energy efficiency means not using extra energy where it isn't needed and in turn saves us money. By saving money in some areas it means we have more money to spend in other, more important areas (such as food and heating).

How can I be energy efficient?

This can be a class discussion or introduce a competitive element:

- a) Show the images on the powerpoint one by one and ask pupils if they can think of ways to can save money by saving fuel/energy.
 - b) With the pupils split into groups show the images and pupils compete to win points by answering correctly.
- **Clothing** – If you're feeling a bit chilly try putting on a jumper/another layer instead of asking to have the heating on.
 - **Appliances** - Unplug electrical appliances if they are not charging or in use
 - **Energy saving bulbs** – These use less energy and therefore cost less money to light a room, and last up to ten times longer than normal bulbs. Also remember to switch off the lights when you leave the room.
 - **Kettle** – Only put enough water in the kettle for the amount you need. The more water in a kettle, the longer it takes to boil and costs more to do so!
 - **Washing machine** – Try to wash full rather than half loads in the washing machine and wash at cooler temperature (e.g. 30 degrees).
 - **Clothes line** – In the summer you can dry your clothes outside on the clothesline. Not only does it mean the tumble dryer isn't being used, your clothes also feel fresher!
 - **Brushing teeth** - Turn off the tap whilst brushing your teeth. It can save 7 litres a day.
 - **Shower** – Take a quick shower instead of a bath and save on average 10 litres a day. Your parents could save up to £20 a year on gas bills and up to £25 on water bills. If you shower for one minute less every day, it could save you £120 a year!
 - **Toilet** - Each toilet takes on average 5 litres to flush with each household flushing that toilet 5000 times a year. One way to help reduce water usage and become more efficient, use the dual flush where possible!
 - **Windows** – having the windows open when it's cold outside means it takes more energy to heat the house and therefore costs more money. Make sure you close the windows if they don't need to be open!
Did you know that homes that have double glazing save on average £135 a year?

Resources required

Powerpoint



10 mins

Recap / Extension Activities

Any of the resources listed at the beginning of this document could be used to recap or as an extension.

Resources required

Access to computers/tablets

