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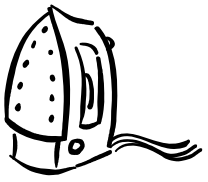
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Sheet 1 - What do we use electricity for?

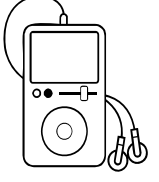
We use electricity for many items in our homes. Look at the objects below and tick whether you think they turn electrical energy into heat, light, sound or movement. Warning: Sometimes you may need to tick more than one!




Heat
Light
Sound
Movement



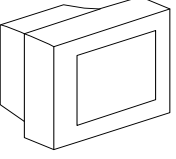
Heat
Light
Sound
Movement



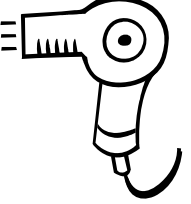
Heat
Light
Sound
Movement




Heat
Light
Sound
Movement



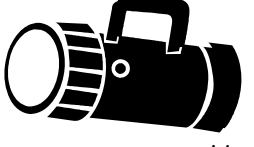
Heat
Light
Sound
Movement




Heat
Light
Sound
Movement



Heat
Light
Sound
Movement



Heat
Light
Sound
Movement



Heat
Light
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Sheet 2 - What is energy?

Use the words in the box to fill in the blank spaces.

Use each word only once.

renewable work forms electricity fossil uranium nuclear generate

Energy is the ability to do _____. It comes in many different _____. These are heat, light, mechanical, electrical, nuclear and kinetic (movement) energy. We use energy in everything we do, from jumping to watching television.

There are two main sources for the energy we use every day:

- Energy that is made using natural resources that can be replaced, like wind, water and sunshine, is called _____ energy. This is also called 'clean energy' or 'green power' because it does not pollute the air or water.
- Non-renewable energy sources are those that cannot be replaced once they are used, such as the _____ fuels oil, natural gas and coal. Most of our electrical energy comes from burning non-renewable energy sources. Non-renewable energy sources also cause pollution.

Renewable and non-renewable energy sources can both be used to produce _____.

Another non-renewable energy source is the metal called _____. Electricity made this way is called _____ energy.

We use all these energy sources to _____ the electricity we need for our homes, work, schools and factories.

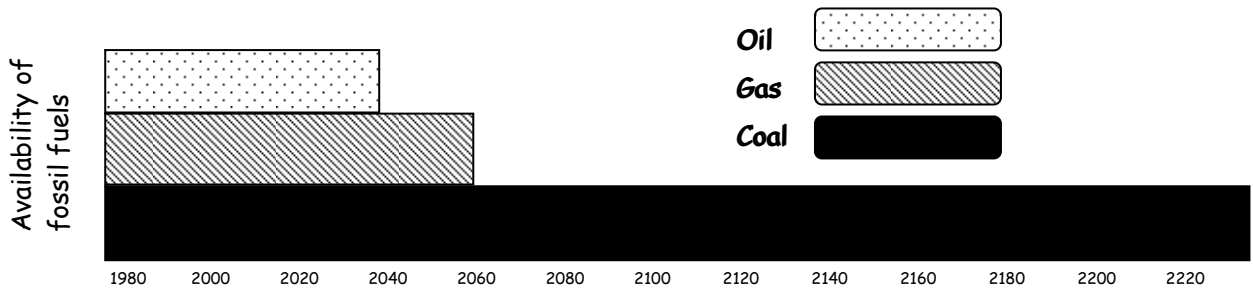
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Sheet 3: How long will fossil fuels last?

Fossil fuels are coal, gas and oil. They were formed millions of years ago when dead plants and animals were pressed under layers of rock. They are non-renewable as once we have used them we cannot make any more.

No-one knows exactly when they will run out, or how much we have left. However, the bar chart below shows what some scientists think may happen in the next 200 years or so:



- Look at the bar chart
- What year is it now? Write the letter N on the time line.
- What year were you born? Write M (for me!) on the time line.
- What year will you be 50? Write X on the time line.
- What fossil fuels will you be able to use when you are 50?

- Will this change anything in your life?

- What could we do to save fossil fuels to make them last longer?

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Sheet 4 - How much energy do we use?

Electrical power lines come into your house or school through an electricity meter. The energy company uses these meters to measure how much electricity has been used. The meter measures electricity in units called kilowatt hours (kWh).

Note: 1 kWh is equal to 1000 watts of electricity used for one hour.

- Remember electricity kills - never play with electricity.
- At home (WITH AN ADULT) or at school with your teacher, take readings from the meter for a week and write the numbers in the table.
- If you can't take the readings every day, take one on the first day and the same day the following week.
- The number of units used each day will be that day's reading minus the reading the day before.
- Ask your teacher for an approximate cost per unit.
- Can you work out the cost per day and for the whole week?

Day	Time	Reading (kWh)	Number of units used (kWh)	Cost per unit (approx)	Cost of electricity (number of units x cost per unit)
Day 1					
Day 2					
Day 3					
Day 4					
Day 5					
Day 6					
Day 7					
Day 8					
One week					

- Are there any big differences in the week?
- Can you explain why?

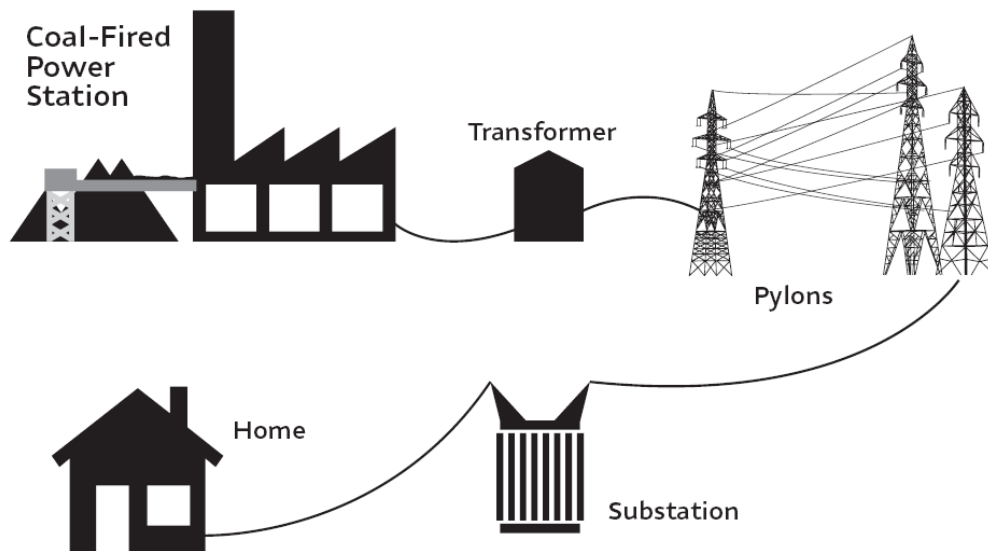
Y/N

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Sheet 5 - Electricity travels!

- How does electricity get into our homes?
- Look at the diagram below.
- Cut out the sentences below and put them in the right order - the first one is in the right place.



Firstly coal, gas and nuclear power stations make most of the electricity we need. The rest comes from wind farms and other types of power station.

In our homes a meter measures the amount of electricity we use and this is used to work out how much we have to pay.

The electricity from all the power stations goes into a system of power lines called the National Grid.

Finally the sockets in our houses are connected by wires to the mains supply so that we can plug in the TV and other electrical items.

The National Grid supplies mains electricity to our homes.

The mains electricity supply passes through fuses in our homes to prevent electrical accidents.

All of these power stations work together to generate and supply enough electricity for the UK.

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Sheet 6 - Supply and Demand

We use more or less electricity depending on what we are doing. For example, putting the lights on at dusk means that the energy companies need to supply us with more energy. This is called supply and demand.

All power stations are linked to the national grid. This means that if the power station nearby has to shut down, the electricity can be supplied from other ones. The other power stations could be miles away.

- Look at two electricity bills - one from the summer and one from the winter.
- Which asks for the most money?
- Can you think of any reasons why more electricity would be used in this part of the year?

In the UK, most of the electricity we need comes from coal and nuclear power stations. Some also comes from gas fired power stations and the rest from renewable sources such as wind or biofuel power stations. Each power station has times when it is not able to generate as much or perhaps any electricity - for example wind power stations if the wind drops or coal power stations if maintenance is needed.

Visit www.eon-uk.com/EnergyExperience/156.htm to play a game based on this:

- Be in charge of supply for a town in Energy Town
- You will need to switch power stations on and off to meet demand.
- See if YOU can meet the demand ALL the time.
- Beware, it is a fast and furious game!