

Home-School Learning Collaboration – KS3 Science

Topics in this cycle: Energy transfers and energy costs	Taught: Spring 1	Year Group: 7
Key knowledge/concepts to be learnt ('Tell me about....')		Websites/blogs/YouTube links and further reading to deepen and consolidate learning
<ul style="list-style-type: none"> What are fuels? State the unit of energy content of food. Compare the energy values of food and fuels. Compare the energy in foods and fuels with the energy needed for different activities. What are the different energy resources? Describe the energy resources used to generate electricity. Explain the advantages and disadvantages of different energy resources. Describe how energy is transferred from an energy resource to an electrical device in the home. What is energy and power? Describe what you pay for when you pay your electricity bill. Calculate the cost for your home energy usage. Compare the energy usage and cost of running different home devices. What is the law of conservation of energy? Use a model of energy transfer between stores to describe how jobs get done. Describe how the energy of an object depends on its speed, temperature, height, or whether it is stretched or compressed. Show how energy is transferred between energy stores in a range of real-life examples. How is energy dissipated? Describe what dissipation means. Calculate the useful energy and the amount dissipated, given values of input and output energy. Explain how energy is dissipated in a range of situations. 		<p>Notes:</p> <p>Energy resources</p> <p>Energy - KS3 Physics - BBC Bitesize</p> <p>Energy stores - Energy - KS3 Physics - BBC Bitesize - BBC Bitesize</p> <p>Energy in the home - Energy - KS3 Physics - BBC Bitesize - BBC Bitesize</p> <p>Videos:</p> <p>Energy video resources:</p> <p>Energy Stores and Transfers (youtube.com)</p> <p>Energy and Power (youtube.com)</p> <p>Energy Resources (youtube.com)</p>

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Key Vocabulary and Definitions To Be Learnt		What Will The Assessment Look Like?
Chemical energy store	Emptied during chemical reactions when energy is transferred to surroundings, for example when you burn a fuel.	Extended writing –Describe the stages of generating electricity using coal including energy transfers that take place at each stage (6marks) End of Unit test: 25 minutes/25 marks <ul style="list-style-type: none"> • Short answer questions • Extended writing • 3 marks for SPAG
Energy resource	Something with stored energy that can be released in a useful way.	
Fossil fuel	Non-renewable energy resources formed over millions of years from the remains Of ancient plants or animals. Examples are coal, oil and natural gas.	
Gravitational potential energy	Filled when an object is raised, for example, when climbing a ladder.	
Kilojoule	1Kilojoule = 1000J, symbol KJ	
Kinetic energy store	Filled when an object speeds up, for example when a car accelerates.	Family Learning Opportunities
Law of conservation of energy	Energy cannot be created or destroyed, only transferred between stores.	Energy in the New Curriculum IOPSpark Energy in stores IOPSpark Energy in stores IOPSpark Different kinds of energy stores IOPSpark
Non-renewable	An energy resource that cannot be replaced and will be used up. Such as coal oil or gas.	
Thermal energy store	Filled when an object is warmed up, such as when you heat water in a kettle.	
Dissipation	Becoming spread out wastefully.	
Kilowatt hours	A measure of energy that is used to calculate cost of energy usage.	
Watts	Unit for power.	
Power	The rate of energy transfer.	
Elastic potential energy	The energy stored in a spring that has been stretched or compressed.	