

Subject	Year 8 Physics content – Spring Term	How to support students' learning
Energy	<u>Energy From Food</u> - Recall the units energy is measured in - Collect information on energy content of different foods - Use an equation to calculate the energy values of food - Evaluate the reproducibility and repeatability of the experiment <u>Energy transfers between objects of different temperatures (conduction)</u> - Name the energy transfer method in solids and Describe conduction using ideas of solid particles - Identify examples of conductors and insulators <u>Convection & Radiation</u> - Describe the terms fluid and vacuum - Name the heat transfer methods through fluids (liquids and gases) and a vacuum - State the effect colour has on emission of infra-red) radiation - Explain convection and how it is generated - Identify examples of heat transfer by radiation and convection <u>Power of household appliances</u> - Recall the standard units for electrical power and energy (kW, W and kJ, J) - Compare the power of different devices - Understand the balance between power, energy and length of time used	Have a look at the nutritional information on different food products in your home to see if you can identify which foods contain the most and least energy. Work through this online lesson on conduction. Lesson: Conduction Teacher Hub Oak National Academy (thenational.academy) Watch the video and complete the quiz from this lesson on convection. Lesson: Convection Teacher Hub Oak National Academy (thenational.academy) Practice your calculations using this website: Power, Energy and Time Calculator - Includes Examples! (si-units-explained.info) Have a look at the appliances in your home. Can you find an appliance that has a high power rating and a different appliance that has a low power rating?

Electromagnetism and Static	<u>Fuel & electrical costs</u> • Define the terms; thermal conductivity, insulator, conductor • Relate thermal conductivity to heat transfer • Use a formula to calculate the cost of electricity • Describe methods of reducing energy losses in the home linked to insulating materials. • Apply knowledge to design an 'Eco-home' <u>Magnets, Magnetic Fields and the Earth</u> • Use key terminology to describe magnetic behaviour (attract, repel, North and South pole) • Recall examples of magnetic materials and know that these only attract (never repel) • Describe the formation of induced magnets • Know that the Earth has a magnetic field and this is used for navigation <u>Electromagnets</u> • Describe the components needed to make an electromagnet • Understand how to change the strength of an electromagnet • Name different types of variables and represent data in graphical form	Look at the information on this BBC Bitesize website: What is domestic energy guide for KS3 physics students - BBC Bitesize – What is Domestic Energy? Magnetism is a fascinating topic in Physics. Read more information from BBC Bitesize: Magnets and magnetic materials - BBC Bitesize Use this summary website to review your understanding of electromagnets Electromagnets - Electromagnetism and magnetism - KS3 Physics Revision - BBC Bitesize
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	<u>Motors</u> • Know that the flow of electrical current through a wire causes the formation of a magnetic field around the wire • Describe the shape of the magnetic field around a current carrying wire • Describe the motor effect • Explain how simple DC motors work <u>Static and uses of static</u> • Describe the effects of similar and opposite charges • Name some uses of static and explain simply the uses of static in industry • Describe how an object becomes charged linked to subatomic particles • Explain how induced charges form	Electric cars are more common so it is important to know about electric motors. See how to make one here: Build a Simple Electric Motor - YouTube Investigate static electricity for yourself at home. Use this video to help you see what is possible. 5 Awesome Static Electricity Experiments for Kids – YouTube
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