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| **Core Knowledge Map** | | | |
| Subject: **Physics 1**  **ENERGY** | Year: **7** | | Term: **1/6** |
| What are we learning? | | | |
| The different stores of energy and how energy is transferred between them  Conservation of energy and energy efficiency  How energy is stored in food and fuels  Energy resources – how do we generate electricity  Link between energy, work and power | | | |
| How will I be assessed | | | |
| Retrieval practise questions  Mid topic long answer question  End of topic test | | | |
| Big questions: | | | |
| What are the ways energy is stored and how is energy transferred between them?  How do I calculate how much energy is in a store?  How do I calculate energy efficiency?  How much energy is stored in food and fuels?  What are the different ways we can generate electricity?  How can I calculate the work done during an energy transfer? | | | |
| How does this build on previous learning? | | How will this link to my future learning? | |
| Energy represented in the form of heat.  Electricity in circuits. | | Energy is a key concept that is required to fully understand large parts of Physics and other parts of the curriculum. It will link to your work on particles and chemical reactions as well as how cells use energy to keep organisms alive and how energy is transferred through ecosystems. As you progress through your science curriculum, we will revisit these concepts and look at energy stores, how the energy is transferred between them and how we can provide enough energy for society when we generate electrical energy. | |
| Core knowledge: | | Key vocabulary: | |
| Definition of energy and looking at specific stores of energy; using equations to calculate kinetic energy and gravitational potential energy.  Looking at energy stored in food and fuels and how we measure energy in food.  Know that energy can be quantified and calculated and that the total energy has the same value before and after a change.  Recall the rule of conservation of energy.  Describing how energy is transferred in solids, fluids, and through space.  Describing how energy is generated using a range of renewable and non-renewable sources.  Know how work and power are calculated and to compare power ratings of appliances in watts (W, kW)  Understand domestic fuel bills, fuel use and costs. | | **Conduction** - The way in which energy is transferred through solids. Energy is passed on by vibrating particles in contact with each other.  **Convection** - The transfer of energy by the movement of gases or liquids (fluids).  **Convection current** – the movement of a less dense fluid caused by the heating of that fluid.  **Dissipated** - Energy that has become spread out or ‘wasted’ by heating the environment.  **Energy** – a quantity that is stored in systems and is the ability to do work.  **Joules** - The unit of energy, symbol J.  **Non-renewable** - Energy resources that have a limited supply. They are used uo faster than they are created.  **Power** – The rate of energy transfer measured in Watts or kilowatts.  **Radiation** - The transfer of energy as a wave.  **Renewable** - Energy resources whose supply will not run out. They are created faster than they are used up.  **Temperature** - A measure of how hot or cold something is, measured in degrees Celsius using a thermometer.  **Watt** - The unit of power, symbol W.  **Work** - A way of transferring energy that does not involve heating. | |
| Need more help? | | | |
| BBC Bitesize - <https://www.bbc.co.uk/bitesize/topics/zc3g87h> (7 learner guides)  You Tube Revision Monkey KS3 playlist (scroll through the play list to get to the videos on this topic) - <https://bit.ly/3qYA1PB> (videos 28 – 35)  Animated Science (definitions): <https://www.animatedscience.co.uk/year-7-energy-stores-and-sources> | | | |