

Review P1.2 Energy and efficiency

<i>Can you...?</i>	😊	😐	☹️
P1.2.1 Energy transfers and efficiency			
State that energy can be transferred usefully, stored, or dissipated, but cannot be created or destroyed			
State that, when energy is transferred, only part of it may be usefully transferred; the rest is 'wasted'			
Describe how wasted energy is transferred to the surroundings (which become warmer), and how it becomes increasingly spread out (less useful)			
Calculate the efficiency of a device using either of these equations: $\text{efficiency} = \frac{\text{useful energy out}}{\text{total energy in}} (\times 100\%) \quad \text{efficiency} = \frac{\text{useful power out}}{\text{total power in}} (\times 100\%)$			
Compare the efficiency and cost-effectiveness of methods used to reduce energy consumption, including 'payback time', given relevant data			
Consider methods such as low energy light bulbs and LED lighting, replacing old appliances with energy efficient ones, and making use of 'waste' energy (e.g. in heat exchangers)			
Describe the energy transfers and the main energy wastages that occur with a range of appliances, such as common electrical appliances			
Interpret and draw Sankey diagrams and use them to calculate the efficiency of appliances			