6.4 Checklist

Lesson	Know	Apply	Extend
6.4.1 Exothermic and endothermic	I can state that an exothermic reaction is one in which energy is given out, usually as heat or light. ☐	I can compare the characteristics of exothermic and endothermic reactions. ☐	I can explain exothermic and endothermic reactions in terms of energy transfers to and from the surroundings. ☐
	I can state that an endothermic reaction is one in which energy is taken in, usually as heat. ☐	I can use experimental observations to distinguish exothermic and endothermic reactions. ☐	I can use energy data to select a reaction for a chemical hand warmer or cool pack. ☐
	I can record temperature changes in exothermic and endothermic changes. ☐	I can calculate the temperature change and make a conclusion in a range of exothermic and endothermic changes. ☐	
6.4.2 Energy level diagrams	I can state that an exothermic reaction is one in which energy is given out, usually as heat or light. ☐	I can use a diagram of relative energy levels of particles to explain energy changes observed during changes of state and chemical reactions. ☐	I can suggest why the temperature of the system decreases at first for an endothermic process. ☐
	I can state that an endothermic reaction is one in which energy is taken in, usually as heat. ☐	I can compare the energy transferred during the combustion of 1 kg of different heating fuels. ☐	I can use models and diagrams to explain energy level diagrams clearly and in detail. ☐
	I can identify whether an energy level diagram is showing an exothermic or endothermic change. ☐	I can models and diagrams to explain energy level diagrams. ☐	I can use an energy level diagram to explain whether a given reaction would be more suitable for a chemical hand warmer or a cool pack. ☐

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Lesson	Know	Apply	Extend
6.4.3 Bond energies	I can state that during a chemical reaction bonds are broken (requiring energy) and new bonds formed (releasing energy). If the energy released is greater than the energy required, the reaction is exothermic. If the reverse, the reaction is endothermic. ☐	I can use a diagram of relative energy levels of particles to explain energy changes observed during a change of state. ☐	I can predict whether a chemical reaction will be exothermic or endothermic given data on bonod strengths. ☐
	I can state that catalysts are substances that speed up chemical reactions but are unchanged at the end. ☐	I can use ideas about bond energies to explain energy changes in chemical reactions. ☐	I can explain in detail bond breaking and bond making in terms of energy changes. ☐
	I can use ideas about bond energies to outline an explanation about energy changes in chemical reactions. ☐		