# Chemistry – Energy changes-Checklist

| 4.5.1 Exothermic and endothermic reactions | | | |
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| Define the terms:<br>• exothermic<br>• endothermic.<br><br>Write-up the practical investigations ensuring the following are included:<br>• hypothesis<br>• plan including identification of the independent, dependent and control variables<br>• data collection<br>• analysis of results<br>• evaluation of the results and plan. | | | |
| Define the term activation energy.<br><br>Draw reaction profiles for exothermic and endothermic. Explain what the diagrams display. | | | |
| Calculate the energy transferred in chemical reactions.<br><br>Extended writing: write instructions to another student how to calculate the energy transferred in a chemical reaction.<br><br>Explain why a chemical reaction is classed as being exothermic or endothermic in relation to the energy involved in breaking and making bonds. | | | |

| **4.5.2 Chemical cells and fuel cells** | | | |
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| Describe the composition of a simple cell and a battery as stated in the unit content.<br><br>Explain how the following cells produce electricity:<br>• simple cell<br>• non-rechargeable battery<br>• rechargeable battery. | | | |
| Compare and contrast the uses of hydrogen cells, batteries and rechargeable cells.<br><br>Construct half equations for the electrode reactions in the hydrogen cells.<br><br>Research fuel cell development and use in various space programs including Apollo, the Space Shuttle and the ISS. | | | |