**Chemistry Revision: Cells and Batteries**

Mastery Matrix Points TRIPLE ONLY

|  |
| --- |
| Describe what a chemical cell is and list the factors that affect the voltage produced (triple only) |
| Describe what a battery is (triple only) |
| Describe rechargeable and non-rechargeable batteries and cells (triple only) |
| Interpret data for relative reactivity of different metals to evaluate the use of cells(triple only) |
| Describe what a fuel cell is (triple only) |
| Compare and contrast the use of hydrogen and chemical cells (triple only) |
| Write half equations for the electrode reactions in the fuel cell (triple only) |

Key Knowledge

Definitions:

Chemical cell –

Battery –

Rechargeable batteries -

Non-rechargeable –

Fuel cell -

Alkaline batteries – rechargeable/

non-rechargeable?

Factors that affect the voltage produced by a chemical cell

-

-

-

Word equation for hydrogen fuel cell:

Half equation for anode:

Half equation for cathode:



Understanding and Explaining

1. Explain how a chemical cell produces electricity.
2. Evaluate the pros and cons of using rechargeable batteries and non-rechargeable batteries.
3. Explain which of these combinations of electrodes would produce the highest voltage (potential difference) in a chemical cell.

|  |  |
| --- | --- |
| **METAL 1** | **METAL 2** |
| Magnesium | Tin  |
| Zinc | Lead |
| Copper | Nickel |
| Magnesium | Copper |

1. Explain how a hydrogen fuel cells works include the overall word equation and half equations for the anodes.
2. Describe the pros and cons of hydrogen fuel cells compared to using a chemical cell (battery).