AS91393 Demonstrate understanding of oxidation-reduction processes

The intent of the standard is to demonstrate understanding of oxidation-reduction processes. Regardless of any practical components which may be carried out, students need access to correct observations for the reactions being assessed.

For Achievement the student identifies what has been oxidised and reduced for both cell types; support with description of either loss/gain of electrons or ON changes and some reference to the requirement of energy for electrolytic cell and reduction potentials for electrochemical cell.

For Merit the student identifies what has been oxidised and reduced with reason and give balanced half equations for both cell types. Explains spontaneity of electrochemical cell with reference to E° values, include reduction potential calculation, and relate species to given observations.

For Excellence Compare and contrast the oxidation-reduction processes in electrolytic and electrochemical cells, including full balanced equations and correct calculations (for electrochemical cells but not electrolytic cells).

Summary of Requirements

Evidence	Achievement	Merit	Excellence
Identifies oxidation and reduction reactions in both cells with reasons (either loss of electrons/ON change)	√	√	√
Reference to requirement of energy for electrolytic cell and reduction potentials for electrochemical cell	√	√	√
Balanced half equations		√	√
Reduction potential calculations		√	√
Compare & contrast oxidation-reduction processes in both cells including fully balanced equation and correct calculations			√