Redox reactions

Students should be able to:

- Define an oxidant and a reductant in terms of electron accepting and electron donating. (Lesson 1)
- write balanced half equations in acidic solution, with states, given a conjugate pair. (Lesson 2, Solution)
- write a balanced overall equation, in an acidic solution, given two half equations.(Lesson 2a - Solution)
- balance an overall redox equation by first writing the oxidation and reduction half equations and then adding the two to form the balanced overall equation. (Lesson 5)
- calculate the oxidation number of atoms in a compound or element (Lesson 4 Solutions_
- identify the oxidant and reductant conjugate pairs in a redox reaction.(Lesson 5)
- use the electrochemical series to:
    - Predict spontaneous reactions
    - Identify reactive metals
    - Calculate cell EMF
      (Lesson 7)
- draw a galvanic cell labelling the:
    - anode and cathode
    - the polarity of each electrode
    - the material of each electrode
    - direction of electron flow
    - half cell reactions
    - direction of negative ion flow from the slat bridge.
    - cell EMF.
      (Lesson 6)
- draw a labelled galvanic cell given the overall redox reaction. (Lesson 6)
- explain the function of a salt bridge as used in a galvanic cell. (Lesson 6)
- predict metal displacement reactions using the electrochemical series and writing the balanced overall equation with states included. (Lesson 3a)
- predict the relative reactivity of metals using the electrochemical series. (Lesson 7)
- identify a redox reaction justifying their decision using oxidation numbers. (Quiz 5 Solutions)
- identify the atom being oxidised or reduced, the oxidant and reductant, given an unbalanced overall redox reaction. (Quiz 3 Solutions)