The Ellesmere Port C of E College

Part of the Frank Field Education Trust

Year 13 Chemistry T2
Learning Programme 3

The LORIC skill focus for his LP is: RESILIENCE
The Moral Virtues focus for this LP are: RESPECT and JUSTICE

Respect - treat others how you would wish to be treated yourself.
Justice - our College rules are fair and reasonable.

What will I be learning about in this Learning Programme?
How to calculate enthalpy and entropy and to be able to recognise if a reaction is feasible.

Where have I seen this learning before?
You have covered enthalpy in Yr12 along with reaction rates

What could I use it for?
Degree course in chemistry or engineering.

Literacy:
- Capital letters must be used at the start of sentences and for the first letter of proper nouns
- Full stops must be used at the end of a sentence
- Question marks must be used at the end of a question
- Apostrophes should only be used for possession or omission
- Days of the week and months must be spelled correctly
- Key words must be spelled correctly

In LP3.1, I will know: 06/01/25 - (WK 2)	Key Vocabulary	Homework
how to explain the term lattice enthalpy (formation of 1 mol of ionic lattice from gaseous ions, ΔLEHΔLEH) and its use as a measure of the strength of ionic bonding in a giant ionic lattice; how to use the enthalpy change of solution of a simple ionic solid (i.e. NaCl, MgCl2) and relevant energy terms (enthalpy change of hydration and lattice enthalpy) for: (i) the construction of enthalpy cycles.	Lattice enthalpy	Practise Questions based on Enthalpy
In LP3.2, I will know: 13/01/25 - (WK 1)	**Key Vocabulary**	**Homework**
that entropy is a measure of the dispersal of energy in a system which is greater, the more disordered a system; how to calculate the entropy change of a system, ΔSΔS, and related quantities for a reaction given the entropies of the reactants and products.	Entropy	Practise Questions based on Entropy
In LP3.3, I will know: 20/01/25 - (WK 2)		
the equations for free energy change and use to justify if a reaction is feasible; the limitations of predictions made by ΔG about feasibility, in terms of kinetics.	Free energy	Practise Questions based on Entropy
In LP3.4, I will know: 27/01/25 - (WK 1)	**Key Vocabulary**	**Homework**
how to construct redox equations using half equations and oxidation numbers; the techniques and procedures used when carrying out redox titrations including those involving Fe2+/MnO4– and I2/S2O32–. Extended Task.	Redox	Practise Questions based on redox equations
In LP3.5, I will know: 03/02/25 - (WK 2)	**Key Vocabulary**	**Homework**
how to complete structured and non-structured titration calculations, based on experimental results of redox titrations involving: (i) Fe2+/MnO4– and I2/S2O32– (ii) non-familiar redox systems; the techniques and procedures used for the measurement of cell potentials	Redox titration	Practise Questions based on redox titrations
In LP3.6, I will know: 10/02/25 - (WK 1)	**Key Vocabulary**	**Homework**
how to predict the feasibility of a reaction using standard cell potentials and the limitations of such predictions in terms of kinetics and concentration; that a fuel cell uses the energy from the reaction of a fuel with oxygen to create a voltage and the changes that take place at each electrode.	Electrode potentials	Practise Questions based on Fuel Cell chemistry
LP2 RLW, I will: 24/02/25 - (WK 2)	**Key Vocabulary**	**Homework**
review my learning, recalling and applying key knowledge, and focus on closing any gaps in my knowledge.		
In LP3.7, I will know: 03/03/25 - (WK 1)	**Key Vocabulary**	**Homework**
how to illustrate using at least two transition elements: (i) the existence of more than one oxidation state for each element in its Extended Task.	Transition elements	Practise Questions based on d block elements

PRT Task 1

PRT Task 2

Resources to support learning:
Knowledge organiser, Microsoft TEAMS, Carousel learning, machem guy YouTube videos. Knock hardy and a level chemistry.co.uk

FFET Award Challenge for this Learning Programme:
Complete three independent learning tasks and evaluate how they have helped you.