The Ellesmere Port C of E College

Part of the Frank Field Education Trust

Year 12 Chemistry T1

Learning Programme 2

The LORIC skill focus for his LP is: ORGANISATION

The Moral Virtues focus for this LP are: COMPASSION and HONESTY

Compassion - the quality of feeling pity and concern for the sufferings or misfortunes of others.
Honesty - the quality of being truthful.

What will I be learning about in this Learning Programme?
How to prepare a standard solution, how to complete a titration to identify the concentration of a unknown acid/base. How to draw and name organic molecules.

Where have I seen this learning before?
Titrations were covered at KS4. You were introduced to organic compounds at KS4 with crude oil and hydrocarbons.

What could I use it for?
Degree level study in analytical chemistry. Careers in chemical synthesis in industry and analytical chemistry.

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 LP2.1, I will know: **19/10/26 - (WK 2)**	**Key Vocabulary**	**Homework**
the techniques and procedures used when preparing a standard solution of required concentration and carrying out acid–base titrations.	Standard solution	Titration calculations
In LP2.2, I will know: **02/11/26 - (WK 1)**	**Key Vocabulary**	**Homework**
how to complete structured and non-structured titration calculations, based on experimental results of familiar and non-familiar acids and bases; how to apply IUPAC rules of nomenclature for systematically naming organic compounds.	Titration	Titration PPQs
LP2 RLW, I will: **09/11/26 - (WK 2)**		
review my learning, recalling and applying key knowledge, and focus on closing any gaps in my knowledge.		Revision
In LP2.3, I will know: **16/11/26 - (WK 1)**	**Key Vocabulary**	**Homework**
how to interpret and use the term skeletal formula (the simplified organic formula, shown by removing hydrogen atoms from alkyl chains; how to interpret and use the terms aliphatic, alicyclic and aromatic, alicyclic. Extended Task.	Skeletal formula	Organic knowlwdge questions
In LP2.4, I will know: **23/11/26 - (WK 2)**	**Key Vocabulary**	**Homework**
the term structural isomers and determine possible structural formulae of an organic molecule, given its molecular formula; how to describe homolytic fission and heterolytic fission.	Isomer	Organic PPQ
In LP2.5, I will know: **30/11/26 - (WK 1)**	**Key Vocabulary**	**Homework**
how to describe reaction mechanisms, using diagrams, to show clearly the movement of an electron pair with 'curly arrows' and relevant dipoles; how to describe alkanes as saturated hydrocarbons containing single C–C and C–H bonds as σ-bonds (overlap of orbitals directly between the bonding atoms), with free rotation of the σ-bond.	Alkanes	Hydrocarbon knowledge questions
In LP2.6, I will know: **07/12/26 - (WK 2)**	**Key Vocabulary**	**Homework**
how to explain the tetrahedral shape and bond angle around each carbon atom in alkanes in terms of electron pair repulsion; the low reactivity of alkanes with many reagents in terms of the high bond enthalpy and very low polarity of the σ-bonds present. Extended Task.	Homologous series	Hydrocarbon PPQ
In LP2.7, I will know: **14/12/26 - (WK 1)**	**Key Vocabulary**	**Homework**
the reaction of alkanes with chlorine and bromine by radical substitution using ultraviolet radiation, including a mechanism involving homolytic fission and radical reactions in terms of initiation, propagation and termination; how to describe alkenes as unsaturated hydrocarbons containing a C=C bond comprising a π-bond and a σ-bond ; with restricted rotation of the π-bond.	Homolytic fission	Fisson knowledge questions

PRT Task 1

PRT Task 2

Resources to support learning:
EPC knowledge organiser, synergy, YouTube search: MaChemGuy.

FFET Award Challenge for this Learning Programme:
Make a model of an organic compound showing the sigma and pi bonds.