The Ellesmere Port C of E College

Part of the Frank Field Education Trust

# Year 9 Science
# 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?**
The different types of energy and the different ways electricity can be generated. The structure of the atom and how the periodic table was developed by grouping elements and making predictions about them.

**Where have I seen this learning before?**
When studying elements, compounds and mixtures earlier in KS3. Chemical reactions in KS2.

**What could I use it for?**
GCSE Chemistry topic atomic structure and the periodic table.

**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 |
|---|---|---|
| how to use the equation for work done to solve problems, including changing the subject of the equation;<br>the link between power, fuel use, and cost of using domestic appliances. | Energy | Complete task on sparx science. |
| **In LP2.2, I will know: 02/11/26 - (WK 1)** | **Key Vocabulary** | **Homework** |
| how to recognise compounds from their formula and describe how mixtures can be separated;<br>how to explain that early models of atoms developed as new evidence became available. | Molecule | Complete task on sparx science. |
| **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. | | Complete task on sparx science. |
| **In LP2.3, I will know: 16/11/26 - (WK 1)** | **Key Vocabulary** | **Homework** |
| how to recall the masses of protons, neutrons and electrons and understand that atoms become charged if they lose or gain electrons;<br>how to calculate the number of sub-atomic particles in atoms, isotopes and ions using atomic and mass numbers;<br>how to explain that the electronic arrangement of atoms follows a pattern up to the atomic number 20.<br><br>Extended Task. | Subatomic Particle | Complete task on sparx science. |
| **In LP2.4, I will know: 23/11/26 - (WK 2)** | **Key Vocabulary** | **Homework** |
| how to explain how elements are organised in the periodic table;<br>how to explain how Mendeleev was able to make predictions for elements that were not discovered;<br>how to understand that non-metals need to gain or share electrons during reactions, whereas metals lose electrons;<br>review and improve my learning through formative assessment and PRT. | Periodic Table | Complete task on sparx science. |
| **In LP2.5, I will know: 30/11/26 - (WK 1)** | **Key Vocabulary** | **Homework** |
| how to complete an assessment;<br>how to describe the trend down group 0 of increasing boiling point in terms of atomic mass;<br>how to relate the properties of the alkali metals to the number of electrons in their outer shell;<br>how to complete an assessment in Science to review my progress. | Alkali Metals | Complete task on sparx science. |
| **In LP2.6, I will know: 07/12/26 - (WK 2)** | **Key Vocabulary** | **Homework** |
| how to explain why Group 1 are known as the alkali metals and know their properties and reactions;<br>how to describe the order of reactivity and explain the displacement of the halogens;<br>how to draw a graph to show melting point data of elements.<br><br>Extended Task. | Reactivity | Complete task on sparx science. |
| **In LP2.7, I will know: 14/12/26 - (WK 1)** | **Key Vocabulary** | **Homework** |
| how to predict and explain the reactivity down the groups and across periods with links to electronic structure;<br>how to describe similarities and differences between transition metals and contrast them;<br>why an atom can become an ion;<br>Review my attainment in assessments and close gaps in my learning. | Electronic Structure | Complete task on sparx science. |

PRT Task 1

PRT Task 2

**Resources to support learning:**
EPC Knowledge Organiser, Synergy, Youtube - periodic table, BBC Bitesize.

**FFET Award Challenge for this Learning Programme:**
Make a 3D model of an atom.