The Ellesmere Port C of E College

Part of the Frank Field Education Trust

# Year 10 Physics
# 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 static charges behave.
How current and potential difference behaves in series and parallel circuits; how resistance affects the behaviour of circuits.
The National Grid and how electricity is used domestically.

**Where have I seen this learning before?**

You have covered electrical circuits at KS3, in particular building circuits and investigating electromagnets.

**What could I use it for?**

Electricity and circuits is a key idea in physics and electronics. This knowledge is built upon in year 11 when studying electromagnets. It is also built upon in A level physics in the module; electrons, waves and photons.

**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 difference between nuclear fission and fusion;<br>the different energy resources and their uses;<br>how to describe the advantages and disadvantages of renewable energy sources (wind, solar, geothermal and biofuel). | Nuclear fission | Complete task on Sparx Science. |
| **In LP2.2, I will know:** **02/11/26 - (WK 1)** | **Key Vocabulary** | **Homework** |
| how to describe the advantages and disadvantages of renewable energy sources (water, waves, tides, hydroelectricity);<br>how to describe the advantages and disadvantages of non-renewable energy sources (fossil fuels and nuclear). | Renewable | 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. | Review | Complete task on Sparx Science. |
| **In LP2.3, I will know:** **16/11/26 - (WK 1)** | **Key Vocabulary** | **Homework** |
| how to recall and draw the standard circuit diagram symbols, and describe how to build working circuits using standard circuit diagrams;<br>how to describe current and to define current as the rate of flow of charge, applying the equation Q=It;<br>how to define Potential difference as the energy per unit charge.<br><br>Extended Task. | Electric current | Complete task on Sparx Science. |
| **In LP2.4, I will know:** **23/11/26 - (WK 2)** | **Key Vocabulary** | **Homework** |
| how to describe and explain the factors that can affect resistance, and apply and rearrange the equation V=IR;<br>review and improve my learning through formative assessment and PRT. | Resistance | Complete task on Sparx Science. |
| **In LP2.5, I will know:** **30/11/26 - (WK 1)** | **Key Vocabulary** | **Homework** |
| how to find the variation in resistance for a length of wire - REQUIRED PRACTICAL;<br>how to apply the rules for current and potential difference in series and parallel circuits;<br>how to complete an assessment in science to review my progress. | Potential difference | Complete task on Sparx Science. |
| **In LP2.6, I will know:** **07/12/26 - (WK 2)** | **Key Vocabulary** | **Homework** |
| how to calculate the total resistance in circuits that contain components connected in series;<br>how to find the variation in resistance in series and parallel circuits - REQUIRED PRACTICAL.<br><br>Extended Task. | Series | Complete task on Sparx Science. |
| **In LP2.7, I will know:** **14/12/26 - (WK 1)** | **Key Vocabulary** | **Homework** |
| how to draw and explain current/voltage graphs for a resistor (ohmic), diode, and filament lamp (non-ohmic);<br>how to find the variation in resistance for ohmic and non-ohmic components - REQUIRED PRACTICAL;<br>review my attainment in assessments and close gaps in my learning. | Ohmic | Complete task on Sparx Science. |

PRT Task 1

PRT Task 2

**Resources to support learning:**

EPC Knowledge Organiser, Synergy.

**FFET Award Challenge for this Learning Programme:**

Design a christmas light set up using correct circuit symbols.