# Post 16 Personal Learning Checklist (PLC)

NAME: SUBJECT: **Physics**

LEVEL: **AS**

| Area of Specification | Topic | Paper | Red | Amber | Green |
|---|---|---|---|---|---|
| Describe electric current as the rate of flow of charged particles and use the expression $I = \Delta Q/\Delta t$ | 2.4 DC Electricity | Unit 2: Physics at Work | | | |
| Use the expression $V = W/Q$ | 2.4 DC Electricity | Unit 2: Physics at Work | | | |
| Recognise, investigate and use the relationships between current, voltage and resistance, for series and parallel circuits, and know that these relationships are a consequence of the conservation of charge and energy | 2.4 DC Electricity | Unit 2: Physics at Work | | | |
| Investigate and use the expressions $P = VI$, $W = VIt$. Recognise and use related expressions eg $P = I^2R$ and $P = V^2/R$ | 2.4 DC Electricity | Unit 2: Physics at Work | | | |
| Use the fact that resistance is defined by $R = V/I$ and that Ohm's law is a special case when $I \propto V$ | 2.4 DC Electricity | Unit 2: Physics at Work | | | |

| Area of Specification | Topic | Paper | Red | Amber | Green |
|---|---|---|---|---|---|
| Demonstrate an understanding of how ICT may be used to obtain current-potential difference graphs, including non-ohmic materials and compare this with traditional techniques in terms of reliability and validity of data | 2.4 DC Electricity | Unit 2: Physics at Work | | | |
| Interpret current-potential difference graphs, including non-ohmic materials | 2.4 DC Electricity | Unit 2: Physics at Work | | | |
| Investigate and use the relationship $R = \varrho l/A$ | 2.4 DC Electricity | Unit 2: Physics at Work | | | |
| Investigate and explain how the potential along a uniform current-carrying wire varies with the distance along it and how this variation can be made use of in a potential divider | 2.4 DC Electricity | Unit 2: Physics at Work | | | |
| Define and use the concepts of emf and internal resistance and distinguish between emf and terminal potential difference | 2.4 DC Electricity | Unit 2: Physics at Work | | | |
| Investigate and recall that the resistance of metallic conductors increases with increasing temperature and that the resistance of negative temperature coefficient thermistors decreases with increasing temperature | 2.4 DC Electricity | Unit 2: Physics at Work | | | |
| Use $I = nqvA$ to explain the large range of resistivities of different materials | 2.4 DC Electricity | Unit 2: Physics at Work | | | |
| Explain, qualitatively, how changes of resistance with temperature may be modelled in terms of lattice vibrations and number of conduction electrons | 2.4 DC Electricity | Unit 2: Physics at Work | | | |