# Eduqas Physics – Component 2

## Module 3: D.C. circuits

This topic covers series and parallel electrical circuits including resistor combinations. The use of a potential divider in circuits is investigated. The terms electromotive force and the internal resistance of a source are introduced.

| You should be able to demonstrate and show your understanding of: | Progress and understanding: | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| The idea that the current from a source is equal to the sum of the currents in the separate branches of a parallel circuit, and that this is a consequence of conservation of charge | | | | |
| The sum of the potential differences across components in a series circuit is equal to the potential difference across the supply, and that this is a consequence of conservation of energy | | | | |
| Potential differences across components in parallel are equal | | | | |
| The application of equations for the combined resistance of resistors in series and parallel | | | | |
| The use of a potential divider in circuits (including circuits which contain LDRs and thermistors) | | | | |
| What is meant by the emf of a source | | | | |
| The unit of emf is the volt (V), which is the same as that of potential difference | | | | |
| The idea that sources have internal resistance and to use the equation $V = E - Ir$ | | | | |
| How to calculate current and potential difference in a circuit containing one cell or cells in series | | | | |
| **SPECIFIED PRACTICAL WORK** | | | | |
| Determination of the internal resistance of a cell | | | | |