**Topic Overview: Voltage and Resistance**

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|  | Ref | Outcome | Achieved | ☺ |
| Emerging | E9SpV1.1 | Describe how a voltmeter is used |  |  |
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| E9SpV2.1 | Draw a circuit diagram to show how voltage can be measured in a simple circuit. |  |  |
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| Developing | D9SpV3.1 | Describe the relationship between current and voltage |  |  |
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| D9SpV4.1 | Calculate resistance using the formula: Resistance (Ω) = potential difference (V) ÷ current (A). |  |  |
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| Securing | S9SpV5.1 | Recall how In a series circuit, voltage is shared between each component. In a parallel circuit, voltage is the same across each loop |  |  |
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| S9SpV6.1 | Predict the effect of changing the rating of a battery or a bulb on other components in a series or parallel circuit. |  |  |
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| Mastering | M9SpV7.1 | Use the idea of energy to explain how voltage and resistance affect the way components work |  |  |
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| M9SpV8.1 | Use an analogy like water in pipes to explain why part of a circuit has higher resistance |  |  |
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| M9SpV9.1 | Draw conclusions about safety risks, from data on voltage, resistance and current |  |  |

**Keywords**

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| **Potential difference (voltage):** The amount of energy shifted from the battery to the moving charge, or from the charge to circuit components, in volts (V). |
| **Resistance:** A property of a component, making it difficult for charge to pass through, in ohms (Ω). |
| **Electrical conductor:** A material that allows current to flow through it easily, and has a low resistance. |
| **Electrical insulator:** A material that does not allow current to flow easily, and has a high resistance. |