**Science 9 – Resistors, Resistance, Ohm’s Law (Current Electricity Notes 4)**

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| **What are Resistors?**   * A resistor is part of an electric circuit that \_\_\_\_\_\_\_\_\_\_\_\_\_\_ the flow of electric **current**. * Symbol for a resistor: * We put resistors in a circuit in order to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ going into different parts of a device. * As current flows through a device/resistor, some of the electrical energy is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ into another form, such as \_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_ energy. * Every device in a circuit has some amount of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, even the \_\_\_\_\_\_\_\_\_\_\_\_\_!!! |

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| **Resistance and the Ohm (Ω)Diagram  Description automatically generated**   * Resistance is expressed using **\_\_\_\_\_\_\_\_\_ (Ω).** * The higher the value, the greater the resistance. (E.g. 10 Ω will resist current more than 2 Ω.) * When a resistor is connected to an electric cell, the amount of **\_\_\_\_\_\_\_\_\_\_\_** that flows through the circuit depends on **the amount of resistance** |

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| **Resistor Colour Code**   * **Table    Description automatically generated**Each resistor has a 4-band colour code that indicates resistance. * Resistance can be determined from the three \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ colours.   Example: Determine the resistance of the resistor below with **Brown**, **Green** and **Red** colour bands.  **Calendar  Description automatically generated** | |
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| The value of a resistor is 230 Ω. What are the first three bands of colour on this resistor? | The value of this resistor is 6400 Ω. What are the first three bands of colour on this resistor? |

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| **Ohm’s Law**   * The relationship between **voltage, current and resistance** is given by Ohm’s Law: * **Voltage** (V) = **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (I) x **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (R)   Volts (V) amps (A) ohms (Ω)   * The greater the resistance, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the current. * The lower the resistance, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the current. * or * or   Practise with Ohm’s Law: |
| Example 1)  A current of 2.5 mA flows through a resistor when connected to a 16 V power supply.  What is the value of this resistor? |
| Example 2)  What is the current produced by a potential difference of 240 volts through a resistance of 0.2 ohms? |