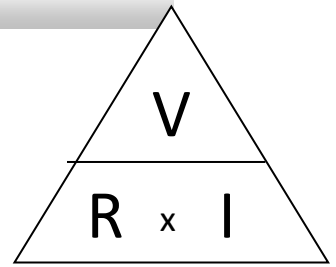


Lesson	Summary of content	Date
1	<p>Circuit symbols. Read page 60 physics 9- 1 CGP book Copy and learn off by heart all of the circuit symbols Draw these circuits :</p> <ul style="list-style-type: none"> • a bulb, 2 cells and a closed switch • battery, resistor and a fuse • 3 cells, 3 bulbs and a variable resistor • 	September
2	<p>Electric charge and current. Read page 61 – 62 physics 9- 1 CGP book. Copy the first 2 paragraphs and figure 4.</p> <p>Copy QIT triangle</p> <p>Copy and learn this the equation off by heart.</p> <p><i>charge flow = current × time</i> $[Q = I t]$ charge flow, Q, in coulombs, C current, I, in amperes, A (amp is acceptable for ampere) time, t, in seconds, s</p> <p>Answer Q page 62</p>	
3+ 4	<p>Resistance</p> <ol style="list-style-type: none"> 1. Read page 63 – 64 physics 9- 1 CGP book. Copy the first 2 paragraphs and example pg 63. 2. 3. Learn off by heart the equation below <p><i>potential difference = current × resistance</i> $[V = I R]$ potential difference, V, in volts, V current, I, in amperes, A (amp is acceptable for ampere) resistance, R, in ohms, Ω</p>	
5	<p><u>Resistance</u> Complete the worksheet 1. If you are stuck complete lesson 3 and 4 above.</p>	
6	<p><u>Required Prac 3:</u> investigate the factors affecting the resistance of electrical circuits. How does the length of a wire affect resistance? Complete worksheet 2- graph paper also needed.</p>	

7	Light Dependent resistors- LDR's and thermistors Read page 80 physics 9- 1 CGP book. Copy the symbol for an LDR and the graph Repeat for a thermistor. Make notes and answer Q page 82	October
8	IV characteristics Read page 65 – 67 physics 9 – 1 CGP book. Copy figure 3, 6, 8 and 10 Make notes on what a diode is and its circuit symbol Answer Q	
9+10	Series circuits Read page 68 – 71 physics 9 – 1 CGP book. Make notes and copy diagrams for the following sections: <ul style="list-style-type: none"> ✓ Components in series ✓ Potential difference in a series circuit ✓ Current in a series circuit ✓ Resistance in a series circuit Copy the summary box Answer Q	
11 + 12	Parallel circuits Read page 72 – 75 physics 9 – 1 CGP book. Make notes and copy diagrams for the following section: <ul style="list-style-type: none"> ✓ Components in parallel ✓ Potential difference in a parallel circuit ✓ Current in a parallel circuit ✓ Resistance in a parallel circuit Copy the summary box Answer Q	November
13	Resistance in parallel and series circuit – required practical Read page 77 – 79 physics 9 – 1 CGP book. Make notes and copy diagrams. Answer the application Q	
14	Electricity in the home Read page 86 – 87 physics 9 – 1 CGP book. Make notes and answer the fact recall Q	
15	Wiring a plug Read page 124 – 125. Exploring science 7 Make notes on fuses. Copy the circuit diagram with a fuse. Draw and label a plug and answer Q	
16	Energy transfers in appliances. Read page 88 – 89 physics 9 – 1 CGP book. Make notes and copy the worked example on page 89	December

	<p><i>energy transferred = power × time</i> $[E = P t]$ <i>energy transferred = charge flow × potential difference</i> $[E = Q V]$</p> <p>Learn these equations off by heart. Recall and apply them. Power - Explain how the power of a circuit device is related to:</p> <ul style="list-style-type: none"> the potential difference across it and the current through it the energy transferred over a given time. 	
17 + 18	<p>Power, potential difference and current Read page 90 physics 9 – 1 CGP book. Learn these equations off by heart including their units. Recall and apply them.</p> <p><i>power = potential difference × current</i> $[P = V I]$ <i>power = (current)² × resistance</i> $[P = I^2 R]$</p> <p>Lesson 17 – answer all the questions on page 91. Copy the question and show the full workings. Mark them using the answers at the back of the book.</p>	
19	<p>The National grid Read page 92 - 93 physics 9 – 1 CGP book. Copy figure 1 and label the different parts that make up the National grid. Make notes and answer Q STRETCH: Complete exam style Q on page 95.</p>	
20	<p>Density - The density of a material is defined by the equation: <i>density = mass / volume</i> Read page 96-97 physics 9 – 1 CGP book. Copy the example showing how to calculate density. Copy the diagrams showing the 3 states of matter. Make notes on the properties of solids, liquids and gases.</p>	
21	<p>Required Prac 5: Read page 98 physics 9 – 1 CGP book. Write a method detailing how to find the density of a regular and irregular sized object</p>	January
22	<p>Density consolidation Read page 96- 98 physics 9 – 1 CGP book. Make notes on any sections you still don't understand Answer the fact recall and application questions.</p>	
23	<p>Recap of learning so far and revision. Use the fold in half sheets to test yourself . LOOK, COVER and CHECK!!</p>	

WORKSHEET 1: Calculating Resistance



Resistance can be calculated from the formula **resistance = voltage/current**.

Resistance is measured in Ohms (Ω)

Easy questions

1. The voltage across a lamp is 12 V and the current through the lamp is 2 A. What is the resistance of the lamp?
2. The current through an ipad is 0.1A and the voltage of its power supply is 12V. What is the resistance of the ipad?

Medium questions

3. The resistance of a thermistor is 34 Ω and the current through it is 0.3 A. What is the voltage across the thermistor?
4. The voltage across an 50 Ω resistor is 6 V. What is the current through the resistor?

Hard questions

5. The resistance of an ipod shuffle is 3 k Ω and the current through it is 4 mA. What is voltage of its power source?
6. The voltage across a woman when she is struck by lightning is 33 MV and the resistance of a human being is around 1 k Ω . What current flows through the woman?

Very difficult question

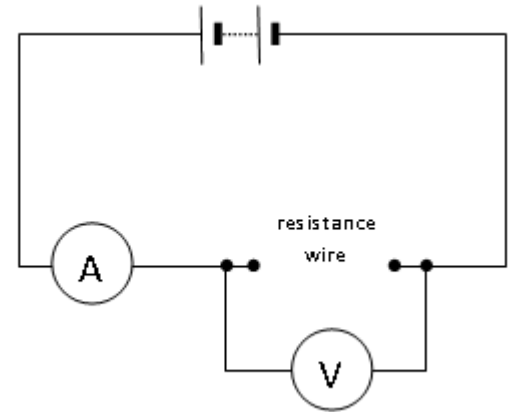
7. The charge on one electron is 1.6×10^{-19} Coulombs. The electron beam in an oscilloscope has 3.4×10^7 electrons flowing per second and the accelerating voltage is 15 kV. What is the effective resistance of the space the electrons flow through?

Can you now write 4 questions of your own (easy/medium/hard/very difficult)?

WORKSHEET 2: RESISTANCE REQUIRED PRACTICAL

Results:

1. Copy the table and calculate the mean
2. Copy and label the circuit diagram
3. Name the independent (what was changed), dependent (what was measured) and control variables (what was kept the same)
4. Draw a line graph. Length of wire = x axis and mean resistance (y axis)
5. Write a conclusion



Length of wire /cm	Test 1 / Ω	Test 2 / Ω	Test 3 / Ω	Mean Resistance / Ω
20	3.1	3.4	3.2	
40	5.9	6.0	6.2	
60	9.3	9.2	9.0	
80	12.4	12.2	12.4	
100	15.7	15.4	19.2	