Resistance

Organise the method used to obtain results for resistance of a wire:

- Record the length of the wire, the reading on the Ammeter and the Voltmeter.
- Adjust the voltage so that it stays the same.
- Calculate and record the resistance for each length of wire using the equation:
- Change the length of the wire by a fixed amount.
- Set up the apparatus as shown in the circuit diagram.
- Repeat until you have several pairs of meter readings

Risk Assessment:

Suggest what the risks are in this experiment. Describe what you should do to minimise the risks.

1.

2.

3.

Complete the following Calculations in the table, using the rearranged equations in the next box:

Voltage	Current	Resistance
4V	1A	
8V		2Ω
	2A	6Ω
12V	3A	
4V	12A	
4V		8Ω
	20A	10Ω

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Calculating the Resistance of the wire at various lengths uses the following equation:

Rearrange the equation to calculate:

Voltage=

Current =
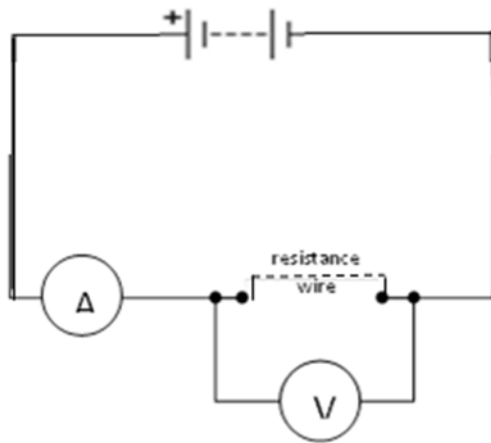
What are the units of the following:
Current:
Voltage:
Resistance:
Length of Wire:

Resistance= Voltage / Current

Plan

Without turning over (!) write a step by step plan for measuring the resistance of a wire.

Calculating the resistance at different lengths of wire

By calculating the resistance at different points on the wire, you will be able to see how resistance changes as the length of the wore changes.

Length of wire (m)	Resistance (Ω)
0.1	2
0.2	3
0.3	4
0.4	6
0.5	9

As the length of the wire _____ the resistance of the wire _____.
This change is not linear be-cause as the current increas-es the wire gets _____ and this affects the _____.

Complete this sketch graph