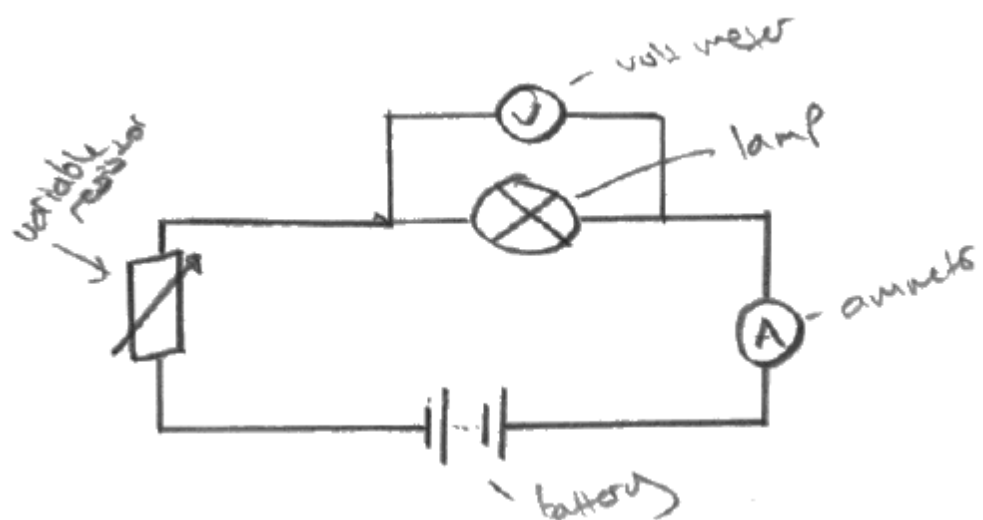
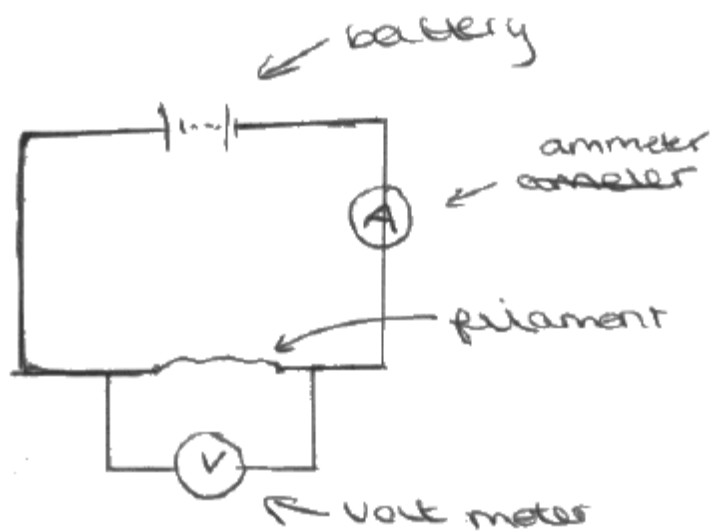
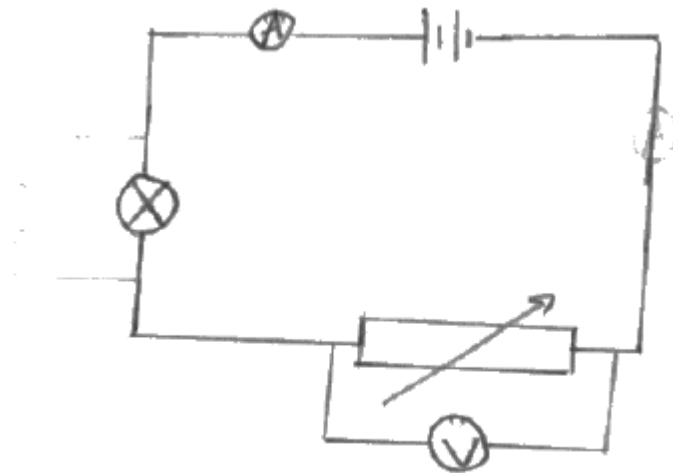


## Activity 5 – Physics

Paper 1P, Q6a



- ① Using different voltages on the power pack to change the voltage
- ② ~~Records~~<sup>Record</sup> the readings from the voltmeter (voltage) and Ammeter (current) <sup>for</sup> each time
- ③ Repeat the experiment
- ④ plot a graph ~~with current~~<sup>with voltage</sup> against voltage current.

The student should set up the circuit as above. She should then turn on the power supply and record the initial readings for current from the ammeter and voltage from the voltmeter. She should then adjust the variable resistor to vary the voltage as  $\text{voltage} = \text{current} \times \text{resistance}$ .

She can then record voltage and current. She should repeat this for a range of different voltages, adjusting the variable resistor each time. She should use the same filament lamp each time.

She can then plot a graph of current against voltage. She should repeat the experiment several times and calculate an average <sup>value for</sup> current for each voltage.

Measure the current & the voltage across the circuit and the bulb with the switch closed. Then ~~measure~~ increase the ~~on~~ voltage, measure it and then measure the current. Continue to repeat these steps. Once ~~done~~ done, repeat the ~~whole~~ whole experiment another 3x and then take an average.

the scale could be more precise. Increase the strength of the magnet ~~field~~ to increase the strength of the magnetic field to produce a greater force

increase the scale of the ammeter,

increase the accuracy of the ammeter

increase the sensitivity of the ammeter

The strength of the permanent magnet can be increased.

In this way, a smaller current will still achieve the effect of causing the coil <sup>(thus the pointer)</sup> to rotate by the same amount (since the force produced on <sup>the coil</sup> is higher), so smaller currents can be measured. One could also increase the number of turns in the coil (e.g. make it a solenoid) to strengthen the magnetic field produced by the current in the coil and thus

(Total for Question 10 = 11 marks)

increase the force on the coil,

produced

~~if the current remained unchanged~~ →  
given the same current