

# I-V Characteristics

## Organise the method used to measure the current and Voltage in various components:

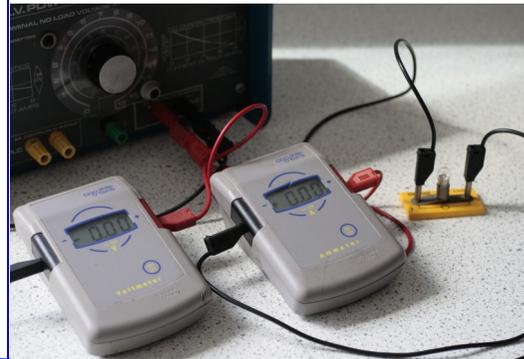
- Swap the connections on the battery. Now the ammeter is connected to the negative terminal and variable resistor to the positive terminal.
- Connect the Voltmeter in parallel across the Power Supply.
- Record the readings on the ammeter and voltmeter in a suitable table.
- Connect the resistor in the circuit as shown in the diagram.
- Continue to record pairs of readings of current and potential difference with the battery reversed.
- Change the component from a resistor to a diode/lamp and repeat.
- Connect the Ammeter in series.
- Adjust the voltage of the Power Supply and record the new ammeter and voltmeter readings. Repeat this to obtain several pairs of readings.
- The readings on the ammeter and voltmeter should now be negative.

## Risk Assessment:

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

1.

2.



3.

What are the variables in this experiment:

Independent:

Dependent:

Control (describe how you might keep these from affecting your experiment):

## Convert the following units

1. 500 mA = ..... A
2. 25 mA = ..... A
3. 770 mA = ..... A
4. 5.8 mA = ..... A
5. 900 mA = ..... A
6. 1 mA = ..... A

### Help?

1000 mA = 1A

mA  $\rightarrow$  A  $\div$  1000

**Plan**

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

**Calculating the resistance**

For each component, complete the sentences

As the voltage and current increase in the lamp, the resistance ..... because

.....

As the voltage and current are increased in the resistor, the resistance .....

The resistance in the diode is high when

.....

Sketch graph for a diode, resistor and lamp

