

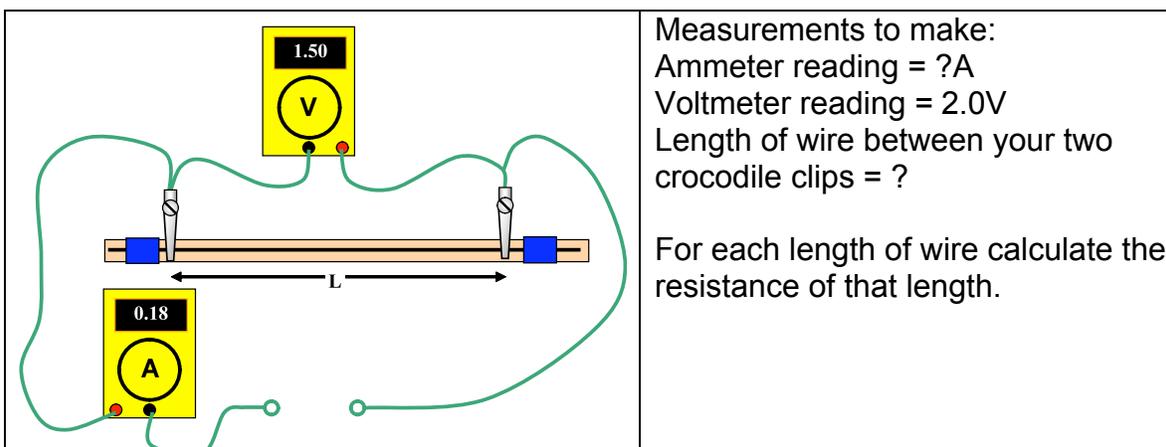
Experiment D: Electric Current (age 14 – 16) – Measurement of Resistance

Experiment Objective:

The aim of this experiment is to help students investigate how the length of a piece of wire affects its resistance.

Classroom Activity:

Set up the circuit shown in the diagram with the crocodile clips 0.90m apart (length L on the diagram). Switch on and adjust the power supply so that the voltmeter reads 0.1 A. Record the voltage and current readings. Repeat this for seven other values of the separation of the crocodile clips from 0.80m to 0.20m. Adjust the voltage to keep it at 1.5V.



Resource materials needed:

1 metre of nichrome wire (28SWG) fixed to a metre rule with tape, a variable voltage dc power supply (0 - 6v) (or 1.5V cell), a dc ammeter (0 - 1A), a dc voltmeter (0 - 6V), two crocodile clips and 5 leads.

Expected outcomes:

By the end of the session students will understand that the resistance of a piece of wire increases in proportion with its length.

Linked Resources

www.twothirtyvolts.org

Ohm's Law Student Revision Notes

Ohm's Law Revision Quiz

Ohm's Law Lesson Plan